7-21-2009

Conversations About Reading: An Evaluation of the Metacognitive Processes Middle School Students Utilize While Reading

Lisa Ann Tong
Indiana University of Pennsylvania

Follow this and additional works at: http://knowledge.library.iup.edu/etd

Recommended Citation

Tong, Lisa Ann, "Conversations About Reading: An Evaluation of the Metacognitive Processes Middle School Students Utilize While Reading" (2009). *Theses and Dissertations (All)*. 445.
http://knowledge.library.iup.edu/etd/445

CONVERSATIONS ABOUT READING: AN EVALUATION OF THE

METACOGNITIVE PROCESSES MIDDLE SCHOOL STUDENTS UTILIZE WHILE

READING

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Education

Lisa Ann Tong

Indiana University of Pennsylvania

August 2009

Indiana University of Pennsylvania
The School of Graduate Studies and Research
Department of Professional Studies in Education

We hereby approve the dissertation of

Lisa Ann Tong

Candidate for the degree of Doctor of Education

_____   _____
                             Dr. George R. Bieger, Chair
                             Professor of Professional Studies in
                             Education

_____   _____
                             Dr. Marian S. Beckman
                             Edinboro University of Pennsylvania
                             Professor of Professional Studies in
                             Education

_____   _____
                             Dr. Anne D. Creany
                             Associate Professor of Professional
                             Studies in Education

ACCEPTED

_____   _____
Dr. Michele S. Schwietz
Assistant Dean for Research
The School of Graduate Studies and Research

iii

Title: Conversations About Reading: An Evaluation of the Metacognitive

Processes Middle School Students Utilize While Reading

Author: Lisa Ann Tong

Dissertation Chair: Dr. George R. Bieger

Dissertation Committee Members: Dr. Marian S. Beckman

Dr. Anne D. Creany

An expectation for proficiency in literacy is increasing in this information-driven global society (van den Broek, McMaster, Kendeou, Espin, 2007). For students to be prepared to meet the challenges of their future, instruction must force students beyond being physically present when reading, to being mentally engaged (Lapp, Fisher & Grant, 2008). Students require a continuation of reading instruction in order to be strategic readers and learners.

This study explored metacognitive reading awareness and usage of eighth-grade middle school students from a rural school district in northwestern Pennsylvania. Students voluntarily participated by completing a metacognitive reading survey. The survey was evaluated to determine where middle school students, specifically eighth graders, are in their development of metacognitive awareness and usage. Further, the

study focused on how students' awareness correlated with their academic achievement.

Of the participants, 10 percent were interviewed to gain further insight into students' use and awareness of metacognitive strategies. Students' survey responses along with interview data were correlated with PSSA reading achievement. Data were analyzed using SPSS. No correlations between metacognitive awareness and academic achievement scores were apparent using these data.

The data derived from the survey coupled with PSSA scores showed a negative correlation. These results indicate students with proficient scores on the PSSA often did not use metacognitive strategies before, during and after reading.

Recommendations address measurement of the level of learning expected for the PSSA test and teachers' efficacy in teaching reading strategies in content area classrooms.

Acknowledgments

They say that completing a dissertation requires a readiness for a long and sometimes bumpy journey. I am so grateful to say that the loveliest people in the world have shared this journey with me. I'd like to thank my committee members. Dr. Bieger, you have been so wonderful to lead me in the right direction. I appreciate your humor and lighthearted spirit. Dr. Creany, thank you very much for serving on my committee and for all of your help. I appreciate your expertise. Dr. Beckman, you have been such a wonderful mentor for the past eight years. Your life stories and patience have carried me through some very tough times.

My mother raised me with the understanding that I would be fortunate to have one good friend in my life. She said that true friends are hard to find. I guess this is one area where I have hit the lottery. To my GM friends, you TRULY made this happen for me. I am in your debt! Kimberly, thank you for hanging in with me. You have been such a good friend to me all of these years. Cohort crew… the strength lies within the cohort! Becky, Jim, Lynne, Sandy, and Steve… your interest, two cents worth and encouragement have helped me through this. Karen and Robin, we laughed, we cried, we became family! You two have been such a blessing. I am so glad to know you. Thank you for all of your help.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

THE PROBLEM

For some students who don't understand how to interpret text,

words on a page are no more than signs and symbols. For those of us who

are readers, these words contain great meaning. Students who

understand the code of reading can decode words rather easily, but

understanding what they read is an entirely different occurrence (van den

Broek & Kremer, 2000). Students' ability to read and understand the text

they are managing is critical to lifelong learning. Students who have the

ability to navigate text and the complexities of language while

simultaneously comprehending text increase the likelihood of their school

success (Johnson, 2006). Further, students who are proficient,

independent readers are in a better position to experience opportunities

of independent cognitive growth during their adulthood by continuing to

use strategies they were taught in childhood (Rycik & Irvin, 2005).

During the course of elementary school, students are taught to

identify words by applying decoding strategies. These strategies generally

include phonetic or contextual approaches. A phonetic approach consists

of instruction that teaches symbol/sound relationships whereas a

contextual approach relies on surrounding text to be an indicator of word meaning (Johnson, 2006).

Explicit reading instruction begins in kindergarten. During kindergarten, students are provided with modeled strategies for deciphering words. Words are broken down into phonemes, and sounds are blended together to make words. This approach is often paired with looking at words within the context of the sentence. Thus, students are able to use surrounding words to deduce the identity of the word and its meaning. Once these skills are mastered, typically around third grade, comprehension strategies are generally introduced (Reeves, 2004). Paradoxically, it is often where they end. Explicit reading instruction generally comes to a halt around fourth grade (Jacobs, 2006). Most students beyond fourth grade are not offered explicit reading instruction and as a result, do not understand there is more to learning to read than decoding words (Reeves, 2004).

The aforementioned practices of phonics and the use of context are initiated in the primary grades, and build upon each other throughout elementary school. Upon completion of fifth grade, some students have mastered and internalized these strategies. At this point, these students move from *learning to read to reading to learn* (Schoenbach, Greenleaf,

Cziko & Hurwitz, 1999). These students apply the strategies they have learned to content-specific reading and are capable of comprehension in most texts. Some students, however, have not acquired decoding skills and require more modeling and instruction (McLaughlin & Allen, 2002). Unfortunately, both accomplished and striving readers will likely be promoted to middle school where they are expected to be independent readers.

The shift from explicitly teaching students how to read, and expecting students to read independently follows suit with teachers' instruction and student expectations (Schoenbach et al., 1999). Teachers understand when students are in the primary grades, they are learning how to read. When students are in the intermediate grades, they are reading to learn new knowledge about a particular content (Jacobs, 2006). Students who have a solid foundation of reading strategies may find text difficult, but have the wherewithal to employ such strategies while reading in order to comprehend the intended content (Schoenbach et al., 1999). Students who have not mastered these strategies not only have difficulty with the text itself, but are also not afforded the benefit of understanding the intended content as well (Guthrie & Davis, 2003; Beers & Samuels, 1998). A student's difficulty in school can often be linked to

their lack of reading strategies in deciphering assigned text (Baker, 2008; Jacobs, 2006).

In middle school, independent reading is generally assigned in textbooks. Textbooks are written at a common reading level that is designated by the grade level and often lacks interest that would engage students (Schoenbach et al., 1999; Williams, 2008). Using a common reading level presents a problem in that students coming from elementary school work on a continuum that is differentiated according to their needs and capabilities, not necessarily their grade level (Reeves, 2004). Textbooks and student resources at the middle school level offer a greater level of text complexity (Reeves, 2004; Williams, 2008). Often, they do not differentiate for the wide range of students' reading levels and as a result, students may become frustrated when using the materials (Schoenbach et al., 1999).

Middle school students who have mastered reading strategies will be presented with the task of reading from a textbook. They may find the text difficult, but have the strategies that will allow them to navigate the text. Conversely, other middle school students who are given the same assignment but do not have strategies to use, often become frustrated with the task and begin to rely on lectures as a way of learning the

content (Beers & Samuels, 1998; Ehren, 2005). When students rely primarily on teacher lecture, they are deprived the experience of learning independently and their growth is limited to the content that teachers instruct (Shannon, 2007).

   In a classroom that practices balanced literacy, students are provided with a text that is in accordance with their assessed level of reading ability. Students are then supported at that level while simultaneously being provided scaffolded instruction to the next reading level (Fountas & Pinnell, 2006). Classrooms that do not use this approach instead utilize one common text for all students, with little attention to specific strategy use. Striving readers are generally placed in some form of remediation that constitutes a repetition of readings and skills. Both of these approaches are unique to elementary instruction. When elementary students transition to middle school, previously experienced differentiation is either limited or nonexistent, with the exception of special education programs or with students who have Individual Education Plans (Jacobs, 2006). Lack of differentiation causes students who were successful in a differentiated reading classroom to have difficulty in a traditional classroom that assumes all students can read texts at the same reading level (Schoenbach et al., 1999).

Statement of the Problem

There is an assumption that once students reach middle school, they are independent readers and learners. As a result, middle school students do not generally receive a continuation of reading instruction and strategies. Students in elementary school are more likely to have received differentiated instruction, than those at the middle school level (Beers, 2003; Jacobs, 2006). Differentiation often ceases in middle school and all students are expected to read common materials and derive new knowledge independently (Ivey & Broaddus, 2000). However, middle school students require a continuation of reading instruction that encourages the use of strategies that would allow them to be successful in independent learning situations.

Purpose of this Study

This investigation is an evaluation of strategies that middle school students use while they are reading that allow them to comprehend text. The purpose of this study is to identify awareness of metacognitive strategies that students use, collect students' accounts of their reading strategies and search for correlations of students' use and knowledge of strategies and its relationship to their academic achievement on a state standardized test. A discussion with students concerning the strategies

they perceive employing while reading will reveal trends in usage of strategies. The researcher is interested in students' reporting of their perception of what happens in their minds as they read. This research will explore students' understanding of the text and purposes for reading. Further, the research will report strategies students use to attend to the text as well as comprehending the text.

This study intends to explore reading in the middle school and the potential need for a continuation of differentiated reading strategies that are used in the elementary classroom.

Research Questions

Regardless of the reading instruction approach, the question needs to be asked; do students need to be taught reading strategies, or do they automatically employ them as they read? Knowing comprehension occurs when students use reading strategies to navigate the text suggests a need for focused instruction. The following research questions will guide this exploration:

- What awareness of metacognitive strategies do middle school students perceive utilizing?
- What is the correlation between the reported use of strategies and academic achievement?

- When left to their own devices, what strategies to the students

    perceive using to understand text that is challenging?

<center>Significance of Study</center>

In middle school there is often an assumption that students have

mastered the ability to read multiple texts at varied reading levels (Beers,

2003; Jacobs, 2006; Reeves, 2004; Shoenbach et al., 1999; Tovani,

2004). This study intends to explore students' reading behaviors,

specifically in the realm of metacognition. Students will identify strategies

used before, during and after reading.

Student perception of reading strategies will provide data to better

inform creators of curriculum, particularly in language arts. If it is found

that students are more successful in classrooms due to the number of

strategies they have internalized, then the significance lies in the

construct of our current instructional practice. Therefore, curriculum and

instruction may need to be altered in order to promote repeated success.

Confirmation of the importance of reinforcement of strategies for readers

will alter the current traditional methodology and sustain a differentiated

model supporting all levels of learners. A differentiated model may

support students by equipping them with strategies allowing independent

reading in all content area classrooms. This independence not only

<center>8</center>

supports students throughout their educational experience, but also creates life-long readers.

Limitations

A limitation to this study is sample size. There are 96 participants in this study; more participants may be needed to generalize outcomes. Outcomes of this study may require additional studies to be replicated on a larger scale.

Students participating in this study are generally proficient or advanced readers according to the 2008 PSSA reading test data. Limitations of this factor may be a lack of representation of lower achieving students according to PSSA reading benchmarks.

Limitations extend to the rural community participating in this study due to the limited amount of lower socio-economic status groups represented in this study. In addition, cultural diversity is tremendously limited in this rural community as well.

Finally, reporting may be a limitation. Students' perceptions lie at the mercy of their ability and willingness to communicate their ideas.

Definition of Terms

Balanced Literacy- An approach to literacy that is grounded in research and student assessment. This approach requires individual consideration for student development and instruction while fostering a desire to read through authentic experiences (Fountas & Pinnell, 2007).

Basal reader- a kind of book used to teach reading using similar words and repeated concepts, "includes a set of instructional objects that describes in detail the new behavior expected to occur after instruction" (Dole, 2000, p. 54).

Comprehension- "Literacy comprises a network of in-the head processes that enable the reader to pick up all kinds of information from the text and construct the author's intended meaning. Comprehension is actively making meaning using this kind of in-the head problem solving. All of the complex operation s of the brain before, during and after reading a text- cognitive linguistic, sensory-motor, emotional, artistic, and creative – are operating as readers process texts" (Fountas & Pinnell, 2006, p. 4).

Conditional knowledge- "…involves readers knowing *why* strategies are effective, *when* they should be applied and *when* they are appropriate." (Johnson, Freedman & Thomas, 2008, p. 10).

Declarative knowledge- "… focuses on readers' beliefs and on what they know about the characteristics of the text, the reading task, themselves as learners, and possible strategies that can be employed." (Johnson, Freedman & Thomas, 2008, p. 10).

Differentiated instruction- "…a teacher proactively plans varied approaches to what students need to learn, how they will learn it, and/or how they can express what they have learned in order to increase the likelihood that each student will learn as much as he or she can as efficiently as possible" (Tomlinson, 2003, p. 151).

Expository text- "Expository texts describe the structure and processes involved in a system or event" (Wolfe & Mienko, 2007, p. 542). Another term for non-fiction texts, examples include a textbook, biography or informational texts

IEP- IEP is an acronym for Individual Education Plan. "IDEA requires an IEP to be drawn up by the educational team for each exceptional child; the IEP must include a statement of present educational performance, instructional goals, educational services to be provided and criteria and procedures for determining that the instructional objectives are being met" (Hallahan & Kauffman, 2000).

Metacognition- Awareness of what is read through self-monitoring behaviors, recognition of the purpose of reading assignment and understanding of what is read (Flavell, 2000; Dunlosky & Metcalfe, 2009; Schoenbach et al., 1999)

Middle school- defined for this study, ages of students in middle school range from 11-14 years old and encompass grades 6-8

PSSA- Acronym for Pennsylvania System for School Assessment is a standardized test that measures whether students have mastered the Pennsylvania standards

Procedural knowledge- "… an awareness of process necessary to complete a strategy or task." (Johnson, Freedman & Thomas, 2008, p. 10).

Reading Skills- automatic reading behaviors that contribute to comprehension (Rycik & Irvin, 2005)

Reading Strategies- "thoughtful, conscious plans that readers use to control their reading" (Rycik & Irvin, 2005, p. 27).

Scaffolded instruction- the act of supporting students as they learn new skills until they are independent in the skill (Bruner, 1975)

Self-monitoring- the act of readers keeping track of the task as well as comprehension (Dunlosky & Metcalfe, 2009; Schneider, 2008)

Self-regulating- readers able to plan, direct and evaluate their reading

behavior (Dunlosky & Metcalfe, 2009; Schneider, 2008)

Striving reader- otherwise referred to as struggling, deficient or remedial

reader. Striving reader is a positive term to describe adolescent students

who are not reading at grade level (Sessions & Murray, 2007)

Chapter Summary

As mentioned earlier in the chapter, students in elementary school

are taught sign-symbol relationships as well as contextual approaches to

word meaning. Once mastered, there is a belief that as the student moves

on to middle school, they are capable of reading most texts independently

without having the benefit of reading comprehension instruction. In

reality, students are able to read the text, but not necessarily understand

it in a broader sense. In elementary school, reading instruction supports

the reading and comprehension of children's texts. In middle school,

educators are asking students to do much more thinking when reading

texts (Reeves, 2004). Engaged reading in textbooks can be difficult if

students are not given practice and knowledge to accomplish this task.

This research is being conducted to determine metacognitive awareness

of middle school students. Further, if there is a preference for a certain

strategy, what is its relationship to their overall academic performance?

Finally, this research will report students' perception of the strategies

they use.

CHAPTER 2

REVIEW OF THE LITERATURE

In this chapter, a review of the research literature is presented as it relates to this study. First, middle school instructional practices will be examined. The review will explore current practices in literacy, specifically in reading instruction. Secondly, metacognitive reading will be defined and its purpose will be represented by the literature. Metacognition will be subcategorized into reading skills and strategies utilized before, during and after reading. Finally, this review of the literature will convey current student achievement status and draw parallels between reading strategies and student achievement. In summary, examination of these topics will reveal what the literature reports middle school professionals are practicing in their classrooms, what the research concludes is best practice in metacognitive reading and finally, how current practices and suggested instruction in metacognition impact student learning.

Many teachers believe reading is a skill taught and mastered in the primary grades (Shoenbach et al., 1999). The literature supports the notion that reading instruction begins in the primary school, however, middle school readers require a continuation of systematic reading instruction (Radcliffe, Caverly, Hand & Franke, 2008). Reading strategies

need to be taught over time (Brown, Pressley, Van Meter, & Schuder, 1996; Schoenbach, 2003). Experimental research has found that explicit instruction of comprehension strategies increases the likelihood of comprehension and retention of text content (Brown, Pressley, Van Meter, & Schuder, 1996; Pressley, 2002).

Brown, Pressley, Van Meter, & Schuder (1996), tested the impact of strategy instruction with 60 second-grade students. All participants were determined to be students with low achievement in reading. The sample consisted of 10 second-grade classrooms. Within each classroom, six students were placed in a reading group. This grouping occurred within each of all ten classrooms. Of the 10 classrooms participating in the study, five classrooms presented students with traditional instruction, while five presented explicit instruction with reading strategies. Explicit instruction along with modeling and word decoding strategies were taught to the non-traditional group.

Data were collected over one academic school year through interviews, think-alouds, retelling and the Stanford Reading test. The outcomes of the study demonstrate a greater awareness in metacognitive reading strategies, and greater achievement on the Stanford reading test among the students who received explicit instruction along with modeling

and word decoding strategies. This study demonstrated strength in instructing students explicitly (Brown, Pressley, Van Meter, & Schuder, 1996). However, research in this case has not quite found its way into practice (Greenwood, Tapia, Abbott & Walton, 2003; Vacca, 2002). Reading instruction at the middle school level has often been limited due to the beliefs that a) students who have not mastered reading in primary grades missed their opportunity to understand it, and b) those who do understand how to read require no further instruction (Guthrie & Davis, 2003; Shoenbach et al., 1999). Either scenario becomes false when teachers find students are not reaching academic success when required to read from content text (Radcliffe et al., 2008; Schoenbach, 2003). In other words, students are not able to find meaning within texts independently.

The reality is, students require a continuation of reading instruction so that they will develop comprehension skills (Harvey & Goudvis, 2007; Keene & Zimmerman, 2007). Reading skills will allow middle school students to negotiate understandings from their reading, as well as assimilate new understandings into their lives, both within and outside of the context of school (Vacca, 2002).

Middle School Reading Instruction

Students in primary grades are provided systematic instruction and modeling in reading (Fountas & Pinnell, 2007; Pressley, 2002). Within their primary years, students are presented explicit instruction building their phonemic awareness (Moats, 2000). Students are provided with modeling and are instructed with sound-symbol relationships as well as decoding skills (Fountas & Pinnell, 2006). In addition, instruction in the primary grades focuses on phonetically regular sounds and spelling relationships (Moats, 2000). Instruction for primary students is delivered and modeled by using resources complementing the student's reading level (Fountas & Pinnell, 2006). In other words, students read from text written at a readability level they can understand (McLaughlin, & Allen, 2002). This systematic approach is generally effective in the elementary school (Fountas & Pinnell, 2006). However, even with this systematic approach, many students are entering middle schools with deficiencies in reading (Beers, 2003; Humphrey, 2002; Williamson & Nelson, 2005).

Often educators believe middle school students have learned all they need to know about reading or that it is too late for them to learn reading skills (Glasglow, 2005). The notion that middle school students cannot develop further in the area of reading is untrue. As Rycik & Irvin (2005)

explain, the need for middle school reading instruction is not necessarily due to elementary teachers' failure to teach students. Rather, ongoing instruction is simply necessary to support the continuous growth of the student (Vacca, 2002). It is recognized that students require further instruction in math to support growth and development (Rycik & Irvin, 2005). This is no different from the support students require for their growth and development in reading. Further instruction in literacy at the middle school level will support continued growth and development (Harvey & Goudvis, 2007; Keene & Zimmerman, 2007). Some middle school teachers may view the development of reading as similar to the development of oral language, occurring naturally without requiring direct instruction (Boulware-Gooden, Carreker, Thornhill & Joshi, 2007). Reading abilities require continual growth in order for readers to extend mastered skills into new genres of texts and topics (Rycik & Irvin, 2005; Schoenbach, 2003). Vacca (2002) concurs stating, "Continued literacy development is of critical importance because it helps to shape the core strategies by which adolescents learn to negotiate meaning and think critically about texts in their lives" (p. 186).

Gillet, Temple, Crawford & Cooney (2003) label the development of reading in middle school as the *Reading to Learn* stage. Reading to learn is

the most typical stage of reading development in middle school (Rycik & Irvin, 2005). Students reading complex text with the support of explicit reading instruction have better understanding of how to comprehend texts in a multitude of formats (Rycik & Irvin, 2005; Vacca, 2002). The literature presents a growing body of evidence positively supporting a systematic approach to instruction in reading for students of all ages (Pressley, 2002; Vacca, 2002; Williamson & Nelson, 2005). In addition, the literature supports a continuation of coherent and consistent reading practice and instruction each day, within all content areas (Brown, Pressley, Van Meter, & Schuder, 1996; Humphrey, 2002; Reeves, 2004). A continuation of reading comprehension instruction will offer support for middle school curriculum challenges.

The middle school curriculum shifts content dramatically both in quantity and types of reading students are expected to accomplish (Rycik & Irvin, 2005). In contrast to the small group format used in elementary school, teachers in middle school tend to present their content in a large group instructional format (Guthrie & Davis, 2003; Ivey & Broaddus, 2000). Within this forum, content is presented with materials typically supplied by the school district. Instructional materials include textbooks and basal readers. Textbooks included within these resources are written

in a manner presuming all students are able to comprehend text written

for that grade level (Ivey & Broaddus, 2000; Humphrey, 2002). In

contradiction, students in elementary school are presented content with a

variety of resources in order to provide an opportunity for students to

access text at their individual reading levels. Johnson, Freedman &

Thomas (2008) report:

> Many content area teachers rely upon the use of the textbook
>
> related to the content subject for most of the required reading
>
> (Guthrie & Davis, 2003). This seems reasonable since the textbook
>
> typically includes knowledge expected to be covered in the content
>
> curriculum. There is reason, though, to evaluate the relationship
>
> between curriculum guidelines; readers' different reading abilities;
>
> and textbook structure, format, content load, and readability. If
>
> there is a mismatch within this complex relationship, students may
>
> have difficulty comprehending the information they are expected to
>
> garner from the text. For instance, readability tests in a variety of
>
> middle-level social studies textbooks reveal reading levels that are
>
> often higher than the grade level of the audience addressed (p.
>
> 29).

The question becomes whether middle school teachers are prepared to foster, develop and encourage reading in the content area (Johnson, Freedman & Thomas, 2008). Many middle school teachers are aware students have difficulty reading these materials but do not know how to support their students (Block & Duffy, 2008; Humphrey, 2002). Typically, middle school pre-service teachers' plan of study at the university includes one reading course to prepare them for the content area classroom (Rycik & Irvin, 2005; Vacca, 2002). Many high schools are not required to teach reading; as a result, many secondary educators do not know how to teach reading in their content specific classrooms (Block & Duffy, 2008; Reeves, 2004). This is a concern considering reading is critical to academic, economic and social success (van den Broek et al., 2007), especially as the demand for students to be prepared for a literate world is increasing (Rycik & Irvin, 2005; Vacca, 2002). Parris, Gambrell & Schleicher (2008) caution educators by expressing that students "require the ability to use reading appropriately, including digital technology and communication tools, to access, manage, integrate and evaluate information; to construct new knowledge; to communicate with others to anticipate effectively in society" (p. 12).

Textbooks

Middle school teachers require students to read extensively in their content area classrooms and are confronted with feedback indicating students do not want to read, have difficulty reading, and when they do read, do not understand what they have read (Ivey & Broaddus, 2000; Tovani, 2000, 2004). Educators cannot assume students who can comprehend text will choose to do so (Guthrie & Davis, 2003; Rycik & Irvin, 2005). Often, students do not want to read and therefore rely on other sources to gain information from the assigned text (Ehren, 2005). Their desire not to read may stem from frustration experienced while reading textbooks (Tovani, 2004). Student frustration comes from a direct response to text complexities (Humphrey, 2002; Jacobs, 2006). Complexities within text include variables such as unfamiliar text structures and challenging vocabulary. When middle school students continually meet frustration or repeatedly fail in their attempts at reading content, they either read passively without any attempts to comprehend, or they rely on lecture (Ehren, 2005). This contributes to why academic conversations in middle school classrooms are limited, and why it is more likely to observe students receiving instruction through lecture or

exercises requiring recitation (Ivey & Broaddus, 2000; Tovani, 2000, 2004).

In a study aimed to explore students' thoughts about reading, Reeves (2004) uncovered the methods students report using to avoid reading. Reeves interviewed twenty-five high school students. The interview was unstructured. Reeves designed the study this way to allow the students to freely discuss their thoughts and feelings surrounding their reading.

Throughout the interviews, students explained they skimmed the text and relied heavily on classroom discussion in place of reading. In addition, they read subtitles or the questions at the end of the text passage and selectively targeted their reading toward the specified content items. Students explained it was not necessary for them to read entire passages when the teacher provided study guides that explicitly revealed the intention for reading the text. If teachers did not provide study guides, the students relied on Cliffs Notes to get them through, although most admitted they didn't even bother looking into the story. Students who were not willing to get the Cliffs Notes depended on the movie of the book or a peer to tell them what the text was about. Reeves (2004) found that students viewed these actions as strategies.

Reading from textbooks elicits different expectations from the reader (Reeves, 2004). First, textbooks tend to confront students with complex and detailed vocabulary (Jacobs, 2006). Students require instruction and guidance in order to be independent in textbook reading (Rycik & Irvin, 2005). Instruction and guidance is necessary because textbooks demand an array of reading strategies for students to comprehend the content (Glasgow, 2005; Schoenbach, 2003). Understanding text structures and self-monitoring the use of effective reading strategies is an ongoing process (Schneider, 2008). The ability to manage reading strategies effectively continues to develop through young adulthood. Middle school readers lack understanding about important reading strategies allowing them to comprehend, memorize and internalize text materials (Schneider, 2008). Students do not consider searching for answers within an expository text as reading (Reeves, 2004). Middle school students would like instruction that offers guidance in reading expository text (Johnson, Freedmand & Thomas, 2008).

Suggested Instruction

For decades educators have experienced suggested reading instruction emanating from both research-based outcomes as well as theoretical frameworks (Shanahan, 2002). Within the last twenty years,

educators have been urged to explicitly teach reading to all students

(Block, 2008; Brown, Pressley, Van Meter, & Schuder, 1996). Through

explicit instruction, students will become engaged in their reading and

learning (Schneider, 2008). Engaging the reader can begin through

metacognitive discussions.

Instruction and guidance can come in many forms such as

metacognitive discussions. Metacognitive conversations provide an

opportunity for the students to hear what is going on in the mind of the

reader. The act of reading is an invisible, mental process, which could

benefit students if made visible or audible (Reeves, 2004). Conversation

led by proficient readers in the classroom, who discussed their process of

monitoring, could serve the entire group of readers (Vacca, 2002).

Metacognitive conversations would give the opportunity for proficient

students to reinforce strategies they use by explaining their process of

understanding. In addition, striving readers would benefit from having the

opportunity to experience the methods used by proficient readers in

order to gain understanding through metacognitive strategies (Messina &

Baker, 2003; Vacca, 2002). Providing structured opportunities for

collaboration allows students time to discuss their reading and how they

are making sense of the content (Guthrie, 2008). Collaboration provides

experiences of networking content and literacy learning (Brozo, 2008).

Scaffolded instruction, and collaborative instruction are needed and

desired by middle school students. A lack of opportunity to engage in

metacognitive discussions within these various subject areas may

contribute to these students' lack of communication concerning their

reading (Blanton, Wood & Taylor, 2007).

Although metacognitive conversations are recommended, limited

experiences engaging in metacognitive conversations may occur because

some teachers believe having students read extensively will produce more

proficient readers, and so reading takes the place of conversation

(Pressley, 2002). Assigning students endless reading tasks without

providing them the tools to successfully manage the text will not improve

their skills in reading. In addition, "Today's literacy programs with scripted

lessons, prompted by results of timed literacy assessments that label

students with little or no application to instruction, do not reflect

metacognitive teaching and learning" (Johnson, Freedman & Thomas,

2008, p. 63).

Vacca (2002) asserts adolescent readers are more strategic in

their reading than primary readers. Middle school students are more

capable of self-monitoring than elementary-aged students (Schneider,

2008). Self-monitoring refers to students being able keep track of the task and to constantly check for comprehension (Schneider, 2008). Proficient adolescent readers are more likely to use metacognitive strategies to self-monitor their comprehension (Brown & Smiley, 1977; Vacca, 2002).

In a recent study conducted by Johnson, Freedman & Thomas (2008), data were collected relating to students' reading confidence. Data from 300 students ranging from grades six to twelve revealed students' opinions relating to capability of self-monitoring and reading strategies used to help them comprehend assigned texts. Along with the students, 120 teachers participated in the study. Teachers relayed their instructional practices and perception of preparing students to be engaged in their reading.

Teachers reported believing that teaching reading strategies to students would support the growth of confident, independent readers. Students were in agreement with teachers by stating strategies would increase their confidence in reading, while adding they would prefer to be taught strategies in a supportive classroom environment.

Students participating in this study strongly expressed a desire for metacognitive strategies to be taught explicitly, as well as being provided

more scaffolded instruction through practice in class, read alouds, and modeling (Johnson, Freedman & Thomas 2008). Students in this study reported awareness of some reading strategies, while lacking knowledge of other reading strategies. Students indicated, knowledge of strategies was not enough to support their reading comprehension. Students required explicit instruction concerning *when* and *why* they should use metacognitive strategies. Interestingly, in this study, teachers and students often reported opposing perceptions of instruction. While teachers claimed they provided metacognitive instruction, students alleged they did not receive it and truly and wanted this form of instruction.

The study conducted by Johnson, Freedman & Thomas (2008) serves as one example of the students' desire to be connected with their learning by being engaged. Students participating in metacognitive conversations and strategies maintain a level of engagement creating meaningful learning experiences.

Metacognition

There is a growing body of evidence suggesting reading comprehension is paramount to successful reading (Cummins, Stewart & Block, 2005; Donndelinger, 2005; Hare & Smith, 1982) which has led to

calls for more research in the nature and development of deeper

comprehension (van den Broek, et al., 2007).

Definition

Emerging from reading research in the 1970's a reformed definition

of metacognition took hold. Metacognition has been described as thinking

of one's thinking (Brown & Knowles, 2007; Caine & Caine, 1994; Dunlosky

& Metcalfe, 2009). John Flavell coined the term "metacognition" in 1979

after years of studying a stage theorist in cognitive development, Jean

Piaget (Pintrich, 2002). Although the theory of metacognition has been

aligned with various theories, Piaget's explanation of thought may best

compare with metacognition. Piaget's explanation of assimilation and

accommodation can be transferred to the concept of metacognition.

Assimilation requires the child to meld new information with existing

ideas. Accommodation on the other hand, is changing prior ways of

thinking about a particular concept to adapt to the new information.

(Piaget & Inhelder, 1969). The relationship between Piaget's theory and

Flavell's (1979, 1999, 2000) definition of metacognition is further

explained as "any knowledge or cognitive activity that takes as its

cognitive object, or that regulates, any aspect of any cognitive ability" (p.

6). Metacognition has also been defined as personal understanding of

one's own processing skills, the purpose of the task and the strategies

utilized to complete such tasks (Dunlosky & Metcalfe, 2009; Flavell 2000;

Schneider, 2008). Johnson, Freedman & Thomas (2008) propose

metacognitive knowledge as it relates to reading can be organized into

three subcategories: procedural, conditional and declarative knowledge.

Procedural knowledge relates to understanding the purpose of the

task and knowing how to accomplish it (Bruning, Schraw & Ronning,

1998; Johnson, Freedman & Thomas, 2008). Others have defined the

concept of understanding the purpose and demands of the text as *task*

knowledge (Vacca, 2002; Vandergrift, Goh, Mareschal & Tafaghodtari,

2006).

Conditional knowledge allows the reader to employ strategies for

specific circumstances because they have understanding of why the

strategy is effective (Johnson, Freedman & Thomas, 2008). *Conditional*

knowledge has also been defined as *strategy knowledge* (Vandergrift et

al., 2006).

Declarative knowledge can be explained as knowledge about

ourselves as readers and factors leading the reader to comprehension

(Sungur, 2007). *Declarative knowledge* relates to self-awareness of the

reader, the task presented and strategies used to accomplish the task

(Johnson, Freedman & Thomas, 2008). Another term for *declarative knowledge* is *person knowledge* (Vacca, 2002; Vandergrift et al., 2006).

Procedural, conditional and declarative knowledge, are not utilized independently of each other. This knowledge is fluid and lies on a developmental continuum (Boulware-Gooden et al., 2007; Bruning, Schraw & Ronning, 1998). Flavell (1979) supported this notion by claiming children go through a series of developmental stages when learning. Mastery of learning within each stage relies upon the degree of engagement (Flavell, 2000). Metacognition can be identified with deeper comprehension and higher order reading (Boulware-Gooden, et al., 2007; Dunlosky & Metcalfe, 2009). Metacognitive awareness is critical to effective instruction and learning, and ultimately impacts readers' independence (Johnson, Freedman & Thomas, 2008). Children who are involved in the learning process by understanding their thinking exemplify metacognition.

Historical Overview

Metacognition's construct is deeply rooted in the beginning conversations relating to thought. The conceptual genesis of metacognition can be traced back to the famous poet and philosopher, Simonides in the year 403 B.C. (Dunlosky & Metcalfe, 2009). Simonides

introduced the premise of Introspectionism or observing the thoughts in the brain while they are occurring. Dunlosky & Metcalfe explain that Introspection, while noted in antiquity and found among the relics of the Middle Ages in the form of memory systems, has been reintroduced in research within the last 30 years (2009).

Introspection, synonymous with metacognition, was refuted by Comte' who suggested it was not possible for one to observe the mind while utilizing the mind in another capacity (Baker, 2008; Dunlosky & Metcalfe, 2009). His claim is referred to as Comte's Paradox. Although there were many introspection proponents who refuted Comte's Paradox, years lacking empirical evidence of introspection paved the way for John Watson's philosophy of Behaviorism (Hothersall, 1995). Mental processing research continued but was overshadowed by the enormous amount of research that came forth from the works of Skinner, Tolman and Hall (Dunlosky & Metcalfe, 2009).

While Behaviorism had its hold on research gains and contributions in behavior of humans and animals for almost 40 years, there were some questions that could not be answered by the standards of Behavioral research (Bruning, Schraw & Ronning, 1998; Hunt & Ellis, 2004). Behavior evolving from Behavioral research experiments that did not produce a

response from an external stimulus required further explanation. Introspection was reintroduced to answer questions of behavior that could not be answered by stimulus response results (Bruning, Schraw & Ronning, 1998; Dunlosky & Metcalfe, 2009). In spite of Behaviorists refusing to embrace the reemergence of Introspection, research ensued and as mentioned, has been developing for the last 30 years. Listed below are a few researchers who have contributed to the concept of metacognition.

Giving credence to research in metacognition, Joseph Hart (1965) created a landmark study changing the way metacognitive research was conducted and viewed. Hart's research pertaining to recall empirically demonstrated participants' ability to make accurate judgments based on their introspection. Hart's research offered credibility to metacognition research by contributing valid, reliable results of human thought.

Another pioneer in metacognition, Ann Brown (1978) determined through her research a "distinction between knowledge and the understanding of that knowledge is a valid and important distinction" (p 157). In other words, there is a difference between having knowledge, and having understanding of the knowledge. Brown was instrumental in introducing researchers to the concept and importance of metacognition

in child development (Bruning, Schraw & Ronning, 1998; Dunlosky & Metcalfe, 2009).

An example of such contribution can be found in a study by Brown & Smiley (1977). Brown & Smiley conducted research with students ranging in ages 8-18. Students were given text and asked to read it. After reading the text, the students were told that some of the text was not important. Students were asked to remove one quarter of the least important text. After removing the text, students again were asked to review the text and remove one quarter of the least important text while maintaining the theme of the text. Through this process, Brown and Smiley determined that the age of the student and discrimination of text importance were related. Older students were more likely to discern important text from text that was not necessary to maintaining the text's theme, while younger students could not. Brown & Smiley established that older students were more likely to have critical knowledge, thus adding to the research of cognitive development (Dunlosky & Metcalfe, 2009).

Finally, Ellen Markman (1977), a colleague of John Flavell at Stanford University was the first psychologist to research metacognition. Markman's impact on the field of cognitive development in reading was

significant as well. Through her research she introduced a method to explore comprehension monitoring by using a process now referred to as error detection (Dunlosky & Metcalfe, 2009). In addition, Markman (1979) presented the possibility of a potential for students to learn metacognitive strategies when she concluded her research by stating:

> Children have the ability to do better. Simply informing the older children that there was a problem improved their performance. This demonstrates that at least the older children have the capacity to monitor for consistency if we can discover ways to assist them. It should be possible to develop educational techniques that can foster such self-monitoring skills. (p. 654)

In reviewing the evolution of metacognition, it is more easily understood why interest in reading comprehension has focused attention on recall, fluency and vocabulary (Baker, 2008; Dunlosky & Metcalfe, 2009; Pressley, 2002; Schneider, 2008). Measurement of recall, fluency and vocabulary are more easily quantified (Pressley, 2002). Metacognitive research after the dominance of Behaviorism required reliable, valid measures of outcomes (Dunlosky & Metcalfe, 2008) for credibility purposes. Initial metacognitive research involved requiring participants to have the ability to recall, read with fluency and determine vocabulary.

Through this research, there was a presence of strategy use (Baker, 2008; Pressley, 2002). Participants often demonstrated or explained usage of specific types of reading strategies aiding them in judgments (Baker, 2008; Schneider, 2008; Vacca, 2002).

The literature has revealed that the use of strategies can be an indicator for the proficiency level of the reader (Brown, Pressley, Van Meter, & Schuder, 1996; Afflerbach, 2002). Often the utilization of strategies positively correlated with comprehension (Pressley, 2002). Research on the effectiveness of strategies ensued and strategies were often evaluated independently (Baker, 2008). To date, strategies are evaluated independently (Block & Duffy, 2008). Think-aloud studies brought attention to the codependent nature of strategies and validated that good readers utilize many strategies at one time (Pressley, 2002). Reporting of multitude of strategies used in order to comprehend has continued to generate interest related to metacognition in reading.

The concept of metacognition reaches many branches of understanding. Definitions in metacognition extend to, but are not limited to social, cognitive, spiritual dimensions (Dunlosky & Metcalfe, 2009). For the purpose of this study, metacognition will be discussed in the cognitive realm, specifically its relationship to literacy.

Metacognition in Literacy

Metacognition in literacy is the awareness of what is read through self-monitoring behaviors, knowing the purpose of the reading assignment and awareness of comprehension of text (Dunlosky & Metcalfe, 2009; Schoenbach et al., 1999).

As mentioned earlier, metacognition is comprised of three branches of knowledge that intertwine: procedural, conditional, and declarative (Johnson, Freedman & Thomas, 2008). Metacognition in literacy is functional when there is a fluidity of knowledge that ultimately supports understanding (Pressley, 2002). Readers utilizing procedural knowledge understand their purpose for reading. Utilizing procedural knowledge, readers focus their thoughts to mentally prepare for the text and to seek information within the text that meets their criteria for the purpose of reading (Bruning, Schraw & Ronning, 1998; Dunlosky & Metcalfe, 2009). Individuals using procedural knowledge understand the information to be derived from the text, and the manner in which the information will be used (Johnson, Freedman & Thomas, 2008). Although each knowledge is used in conjunction with one another, procedural knowledge is typically utilized by the reader *before* reading begins. Readers consider the text, and decide how they will approach it to meet the purpose.

Readers exercising conditional knowledge are thinking strategically about their reading (Johnson, Freedman & Thomas, 2008; Vandergrift et al., 2006). Readers approach the text with strategies used for specific situations (Dunlosky & Metcalfe, 2009). Some examples of conditional knowledge utilized in reading include: self-monitoring, making predictions and connecting to the text (Ivey & Broaddus, 2000; Tovani, 2000). Conditional knowledge is often used *during* reading. Readers applying conditional knowledge are constantly making adaptations while they read. They are self-monitoring for comprehension. If comprehension is not occurring, readers will adjust the pace of their reading or reread the text (Vacca, 2002). Utilizing these strategies demonstrates their ability to apply conditional knowledge to their reading to ensure comprehension.

Finally, declarative knowledge is the readers' understanding of themselves (Dunlosky & Metcalfe, 2009). Declarative knowledge is comprised of the readers' prior knowledge and the synthesis that occurs between the new and prior knowledge (Johnson, Freedman & Thomas, 2008; Vandergrift et al., 2006). Readers with understanding of their declarative knowledge are aware of the concepts they have already attained, then take new knowledge and connect it with prior understandings (Ivey & Broaddus, 2000; Tovani, 2000). Readers utilizing

declarative knowledge are keenly aware of when comprehension is not

occurring. They know when they need to apply strategies and which

strategy to use (Vacca, 2002). Procedural, conditional and declarative

knowledge used in harmony with each other, lead readers to

comprehension (Duke & Pearson, 2002).
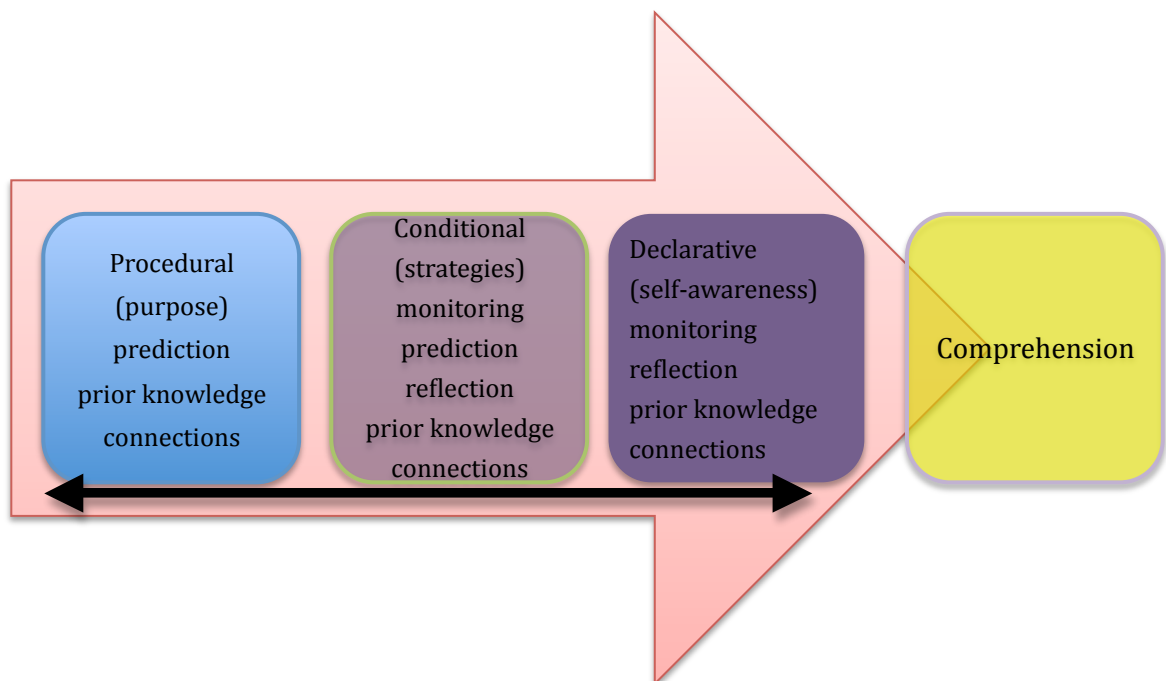
Figure 1.
Components of metacognition impacting comprehension.

Figure 1 illustrates the fluid nature of metacognition. Represented

in the figure are the three components of knowledge that must be

functional for comprehension to occur. The purpose of Figure 1 is to

illustrate some of the strategies employed *before, during* and *after*

reading. Several strategies are used for more than one type of knowledge. Strategies are fluid, just as knowledge is fluid (Duke & Pearson, 2002).

Readers may use prior knowledge *before* they read to prepare their brain for the information they will be using for the text (Marzano, 2007; Pressley, 2002). When readers use prior knowledge, they are applying procedural knowledge by preparing their brain for the purpose of the reading. Readers rely on past purposes to know how to prepare themselves for the reading task, thus utilizing prior knowledge.

Readers may use prior knowledge *during* their reading to make meaning of the text. By activating prior knowledge, readers are making connections, sometimes subconsciously (Marzano, 2007; Pressley, 2002). When they are utilizing prior knowledge, readers are using two strategies; they are activating their brain to remember what they already know, and making connections between what they know and the text (Duke & Pearson, 2002). Readers utilizing conditional knowledge may exercise the strategy of prior knowledge as a way to make meaning of the text.

Finally, readers may use prior knowledge *after* they read to make meaning of the text. The purpose for using prior knowledge *after* reading is coupled with the strategy of being reflective. Readers use their prior knowledge to understand what they have read (Pressley, 2002). When

readers are utilizing prior knowledge they are taking what they already

know, and being reflective of their reading in order to make new

knowledge.

As illustrated and explained, metacognition is a complex set of skills

and strategies contributing to comprehension (Dunlosky & Metcalfe,

2009; Pressley, 2002). Readers are required to orchestrate a complex set

of abilities in order to comprehend the text. McLaughlin & Allen (2002),

authors of *Guided Comprehension: A Teaching Model for Grades 3-8*,

explain:

> Good readers are described as active participants in the reading
>
> process who have clear goals and constantly monitor the
>
> relationship between the goals they have set and the text they are
>
> reading (Theide, et al., 2005). Good readers use comprehension
>
> strategies to facilitate the construction of meaning. These
>
> strategies include previewing, self-questioning, making connections,
>
> visualizing, knowing how words work, monitoring, summarizing and
>
> evaluating. Researchers believe that using such strategies helps
>
> students become metacognitive readers (p.11).

Such a set of complex strategies requires ongoing instruction

(Tovani, 2000). Students require modeled and scaffolded instruction

before they can be expected to perform such tasks independently (Shoenbach et al., 1999).

Instruction in metacognitive strategies is difficult to observe in middle schools, and even more difficult to observe in content area classrooms (Ivey & Broaddus, 2000). Students require awareness of their reading process. They need to understand how they think and how their thinking supports their understanding of the text (Shoenbach et al., 1999; Tovani, 2000). While it is important for students to enjoy the text, it is simply not enough for students to want to read. They need to be well equipped with the strategies that allow them to understand what they have read.

Motivation to read the text and metacognition are directly linked with each other (Dunlosky & Metcalfe, 2009; Guthrie et al., 2004). Agreement between motivation and metacognition is a common sense approach to reading instruction because the level of motivation determines the degree of engagement (Duke & Pearson, 2002). Likewise, when students are invested in their reading they are more motivated to read the text. Students who are consistently met with frustration while reading have less motivation to read, just as students who read appropriate leveled texts desire to read more because the complexity of

the text is no longer a concern (Ehren, 2005). Having appropriate text levels allows the student to focus less on word meaning and more on text meaning (Vacca 2002).

Students who are seeking to learn by reading texts must be capable of monitoring their reading while applying strategies allowing them to understand the information they are attempting to attain from the text (Blanton et al., 2007). The strategies students employ are not exercised in isolation but used in harmony with several strategies that support each other while sustaining understanding. Middle school students use a multitude of strategies during a single reading (Beers, 2003; Pressley, 2002).

Teachers have been expected to monitor student comprehension (Pressley, 2002). Teachers have done this by requesting the students to read a passage, then answer the questions at the end of the passage (Shoenbach et al., 1999). This is not necessarily monitoring comprehension, but monitoring whether or not the student is able to retrieve information from the text. When teachers assume the responsibility of student comprehension, students give up control of their reading (Tovani, 2000). However, when students are capable of metacognition, they are more likely to use problem solving as a strategy

when understanding does not occur (Dunlosky & Metcalfe, 2009; Hare &

Smith, 1982). Students often do not realize they do not understand until

they are asked to do something with their reading (Tovani, 2000). Asking

students to monitor their reading remedies many of these comprehension

issues. When students are monitoring their comprehension, they must be

active in their reading *before* they begin reading, *while* they are reading

and reflective of their comprehension when they are *finished* reading

(Vacca, 2002).

Before Reading Strategies

There are several mental activities that can prepare middle school

students for the text they will be reading (Vacca, 2002). A proficient

reader does not open a text and begin reading (Pressley, 2002). A

proficient reader employs strategies *before* they read the text. Some

before reading strategies include prediction, surveying the text, activating

prior knowledge and determining the purpose of the reading (Beers,

2003; Pressley, 2002).

Most students are capable of making predictions about texts that

are logical (Tovani, 2000). Making predictions forces the student to

consider what they are going to read before they read it (Rycik & Irvin,

2005). When students make predictions about text, it automatically

prepares them for concepts within the text, as well as the strategies they may need to employ to navigate the text (Vacca, 2002). Predictions generally are derived from surveying the text (Tovani, 2000). During this process, students take several text characteristics into consideration. Students may utilize the text's title, pictures, subtitles or summaries to make intelligent predictions about the text (Rycik & Irvin, 2005). Making predictions by surveying the text allows the student to activate prior knowledge.

It is important for students to be able to build upon what they already know (Glasgow 2005; Messina & Baker, 2003). Activating prior knowledge enables the students to search their minds for concepts and life experiences previously encountered by the reader (Messina & Baker, 2003; Ryicik & Irvin, 2005). Doing so allows the reader to build upon previously experienced concepts making it easier to comprehend new information (Keene & Zimmermann, 2007). Activating prior knowledge provides focus to concepts presented within the text (Vacca, 2002).

Students need to set goals before they begin to read so they know what it is they are attempting to accomplish (Rycik & Irvin, 2005; Smith, 2003). Before reading, students should set an expectation of their reading by determining the purpose of their reading and preparing a

mental plan to accomplish it (Reeves, 2004; Vacca, 2002). For effective

comprehension, students require purpose and motivation before they

begin to read (Glasgow, 2005). Students need to be interested in what

they are reading in order to be engaged. When students are interested,

they are more motivated to understand the text and more likely to apply

the text to deeper understandings (Guthrie et al., 2004). When middle

school students have a reading goal in mind, they tend to produce in-

depth explanations of the text as well as inferential explanations of *why*

and *how* events happened in the text (van den Broek, et al., 2007).

Knowing the purpose for the reading, allows the students to ask

themselves questions preparing them for remembering particular details

within the text (Duke & Pearson, 2002). Comprehension will occur when

authentic and purposeful reading activities are presented (Guthrie, 2008).

During Reading Strategies

Students who are engaged in monitoring their comprehension

increase their understanding of text (Theide, Dunlosky, Griffin & Wiley,

2005; Guthrie et al., 2004). During reading strategies ensure the reader is

engaged in the text (Vacca, 2002). Glasgow (2005) states, "The purpose

of during reading strategies is to help the students read constructively,

use a range of transactions appropriate to the task, and capture personal

responses to the text" (p. 11). Many middle school students read the words, but do not understand the meaning of the text (Pressley, 2002). For this reason, during reading strategies are critical. Metacognition *during* reading occurs when students evaluate their comprehension and employ strategies allowing them to continue their comprehension (Ehren, 2005, Rycik & Irvin, 2005; Tovani, 2000). Students who have been explicitly or systematically taught metacognitive strategies are more likely to employ them (Guthrie, et al. 2004). Such strategies include changing the pace of their reading, asking questions about the text, rereading for understanding, making connections and predictions (Boling & Evans, 2008; Tovani, 2000). While students are reading, the number of strategies employed is not indicative of their reading comprehension; rather it is the choice of appropriate strategies necessary for comprehension that determines comprehension of the text (van den Broek, et al. 2007). Mindful reading or interactive reading in the areas of self-monitoring, focusing on purpose and comprehension, are the fluctuations that permit the reader to make meaningful connections (Theide, et al., 2005; van den Broek, et al. 2007).

Students should be self-monitoring their comprehension (Theide, et al., 2005; Rycik & Irvin, 2005). They should stop and question whether or

not they understand the text. When students are utilizing monitoring

strategies, the likelihood of understanding increases (Ehren, 2005). As

students read, their focus becomes a balancing act of monitoring

incoming text information while ignoring outside information within and

outside of the text (van den Broek et al., 2007). In other words, students

need to be mindful of the text they are reading, and comprehend how it

fits into their current knowledge. At the same time, students must be

mindful of text that has no significant importance to their comprehension

of the text, as well as ignoring events happening outside of their reading,

such as their personal life.

　While they are reading, some students slow down the rate of their

reading to provide time to internalize the text while making connections

(van den Broek, et al., 2007). Reading becomes a process of interpreting

symbols into a diverse world that represents individual experiences

(Reeves, 2004). When students are reading the text, they are making

connections with personal learning experiences in order to make sense of

the text for themselves (Smith, 2003).

　While students are reading, they should be questioning the text

(Ivey & Broaddus, 2000). Students should be engaged in questioning the

author's purpose, the content they are reading, and how the content fits into what they already know (Rycik & Irvin, 2005).

Middle school students are not often aware of their thoughts when they are reading (Rycik & Irvin, 2005; Tovani, 2000). Students should be able to hear their voice interacting with the text, visualize a picture of what is being read, and be capable of retelling what they have read (Smith, 2003; Tovani, 2000). Readers can retell what they have read by making mental maps of what they are reading (Rycik & Irvin, 2005; Smith, 2003). In other words, readers are actually mapping out story sequence, story plots or text concepts in their brains in order to make sense of the text. Periodically summarizing what they have read throughout their reading ensures comprehension (Reeves, 2004, Shoenbach, et al., 1999).

After Reading Strategies

Metacognitive strategies students use after reading the text allow the reader to extend understanding within the text (Vacca, 2002) and build upon those understandings to create new ideas. Glasgow (2005) finds, "After reading strategies encourage reflection and lead readers deeper into the book, allowing them to probe and clarify ideas" (p. 11). Students who are able to be reflective about their reading are more likely to be engaged while reading and as a result, more effective readers (Rycik

& Irvin, 2005; Tovani, 2000). Metacognitive strategies used after reading include summarization, making connections with the text and self-questioning.

Middle school students need to be reflective of their reading to determine if they met their reading goal (Rycik & Irvin, 2005; Shoenbach et. al, 1999; Tovani, 2000). Middle school readers should be able to make connections from what they read to their prior knowledge (Rycik & Irvin, 2005; Smith, 2003). Students who self-question during and after reading must evaluate their comprehension by creating connections between their knowledge and reading material (Ehren, 2005). Unanswered questions may require the student to be compelled to reread passages that were not understood (Pressley, 2002). The products created by readers are often an indicator of students' comprehension *after* they read (van den Broek, et. al, 2007). Some examples of products include student recall or question based tasks requiring the reader to respond to their reading (Smith, 2003). This can be a difficult task for less motivated students. Students need to be reminded that just because the reading is done, doesn't mean the learning and thinking is done (Beers, 2003).

Student Reading Achievement
and Implications of Overall Achievement

The No Child Left Behind Act 2001 (Ed.gov, 2008) addresses a concern for the number of children in American schools who are not able to read at their grade level. This Act explains that reading should be a priority in schools. Through NCLB, students are assured reading instruction which yields positive outcomes in both reading and student achievement (Papanastasiou, 2008). The promises of the NCLB Act (2001), confirm the notion that one of the main purposes of education is to prepare students with the necessary skills to read with understanding (Papanastasiou, 2008). Students who have the skills to read with understanding are better equipped to interact with the ever-expanding global environment (Shannon, 2007). Global societies require a literate community in order to contribute to social and economic growth (Papanastasiou, 2008). Knowing there is a governmental effort in place as well as pending community expectations for graduating students, has not impacted achievement rates significantly (NAEP, 2007). Research continues to reveal significant dysfunctions in underperforming schools relating back to insufficient curriculum objectives (Van de Grift & Houtveen, 2006). The outcome of such objectives for learning and

teaching are apparent in consistent reports from the National Assessment of Educational Progress (NAEP).

NAEP (2007) has reported statistics of levels of reading achievement for the last seventeen years. For the last eleven years, eighth-grade students have consistently performed below the expected proficiency level. NAEP (2007) reports for the years 2007, 2005, 2003, 2002 and 1998 that on average, 68% of the students scored at basic or below basic. NAEP reports 43% of the nation's eighth-grade students scored basic, while 27% scored below basic (2007). These data indicate a lack of proficiency in reading during the years reported. Underachievement in reading has been consistent for the last eleven years. Certainly, school achievement rates vary from school to school (Papanastasiou, 2008). There is, however, a concern with the consistent data indicating lack of proficiency. The data suggest students who have low achievement in reading, remain low achieving in reading, while the higher achieving remain high (NAEP, 2007). The data demonstrate the Matthew Effect.

Keith Stanovich (2000, 1986) uses the term Matthew Effect, to describe a phenomenon observed in research. Stanovich (1994) explains:

"The term Matthew effect derives from the Gospel according to Matthew: "For unto everyone that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath" (XXV: 29). It is used to describe rich-get-richer and poor-get-poorer effects that are embedded in the educational process" (p. 281).

Stanovich (1994,1986) indicates early success in reading skills generally leads to later success in reading, while delayed skills in early reading experiences may lead to life-long reading difficulties. When students are required to *read to learn*, overall academic achievement is affected as students fall further behind in school and in some cases drop out of the educational system (Papanastasiou, 2008, Stanovich, 2000).

Research on the validity of Matthew Effect found in reading indicates variances in its reliability of existence; however, researchers who ascribe in the Matthew Effect encourage policy makers to provide high quality interventions (Morgan, Farkas & Hibel, 2008). Morgan et al. (2008) conducted longitudinal research evaluating varied socio-economic status (SES) groups, ethnicities, gender and academic achievement with reading abilities. The study revealed students who entered school having difficulty in reading, continued having reading difficulty and in some cases

showed a decline in ability. Morgan et al. (2008) assert their research may differ from those who previously measured for Matthew Effect due to their large sample size as well as use of the variables of gender, ethnicity, SES and reading ability. This research calls for reformation in current interventions. Intervention efforts as well as instructional practices require highly skilled educators and intense instruction (Morgan et al., 2008).

To date, there has been little attention given to metacognition and how it relates to issues pertaining to school achievement (Sodian & Frith, 2008). Data support the notion that adolescent literacy is directly linked to high school completion rates (Boling & Evans, 2008). In thinking about the Matthew Effect, consider the data indicating 8 million middle school students cannot read or understand what they read at a basic level (Boling & Evans, 2008). Students who are not proficient readers feel a disconnect from their peers because they lack the basic skills needed to communicate at that social level (McLaughlin & Allen, 2002; Shoenbach et al., 1999). Students who feel disconnected, and as a result do not complete high school make up a substantial population. There are many students graduating from high school with limited reading ability (ACT, 2008). Due to inadequate literacy skills, an estimated 32 percent of

college-bound high school students have little likelihood of succeeding in

college courses (ACT, 2008). This statistic is further supported by the

National Center for Higher Education Management Systems (NCHEMS)

finds that only 64.9 % of students entering higher education, graduated

with a degree (2007). When students' are consistently challenged by

comprehension that reaches a level of frustration, students avoid reading

and learning (Block & Duffy, 2008). A downward spiral of academic failure

follows this frustration and avoidance.

Chapter Summary

Instruction in the elementary classroom strives to reach all readers.

Comprehension becomes a focus in the later elementary grades because it

provides a foundation for learning at the secondary school level (Guthrie

et al., 2004). Without the understanding of skills used to comprehend

and the interest by the student to read to comprehend, students'

academic growth is limited. Limiting academic growth reduces the sense

of capability. There is an increasing need to empower students with skills

in reading to allow them to contribute to the developing global

community (Papanastasiou, 2008). Empowerment comes by engaging

students in successful reading opportunities that instruct and assist in

making meaning from the text (Glasgow, 2005).

When students complete fourth grade, many have mastered the skills of learning to read (Brown, Pressley, Van Meter, & Schuder, 1996; Schoenbach, 2003). Then as they venture into the middle school grades, they are being asked to read in order to learn. Learning to read, and applying reading skills to acquire new knowledge requires mastery of a complicated set of skills.

Showing students how to use strategies for maximizing understanding when reading does not require the content area teacher to be a reading specialist (Vacca, 2002). Effective content area teachers need to scaffold instruction in their content while simultaneously modeling familiar reading strategies they use themselves (McLaughlin & Allen, 2002; Shoenbach et al., 1999). Providing unique reading instruction will support adolescent students' literacy development. Many students have not received adequate reading instruction to prepare them for the types of text they will encounter (Blanton et al., 2007). Inadequate reading instruction causes students who are striving readers to fall into a pattern of disparity and failure when they are asked to read text that is beyond their understanding. Middle school students tend to employ survival strategies allowing them to acquire the content information without having to actually read to obtain it (Lesley, Watson, & Elliot,

2007). Such strategies include using peer notes and relying on the

teacher's lectures. In place of students creating or obtaining strategies

for reading, strategies to gather information from sources outside of the

text are filling in the gaps of learning. This type of learning is not in

congruence with what the literature purports and further, is not reflective

of the progress educational researchers have made in understanding

comprehension.

Historically speaking, approaches to literacy have shifted from an

Introspective to Behavioral approach, now returning to a Metacognitive

approach (Bruning, Schraw & Ronning, 1998; Dunlosky & Metcalfe, 2009).

Reading research has given insights to students' thought processes while

reading (Brown, 1978; Markman, 1977; Pressley, 2002). Extending back

to the late 1970's an evolution of reading research has informed

educators, that engaging the student *before, during* and *after* reading

increases the likelihood of comprehension (Baker, 2008; Block & Duffy,

2008).

Middle school students require instructional support of their reading

until they have mastered the skill and can apply the techniques to their

individual learning practice. When instructional support is limited or

quickly withdrawn, students' achievement often drops dramatically and

does not transfer when a more difficult cognitive task is presented

(Blanton et al., 2007). Reduction of student achievement can be avoided

when teachers match instruction with the individual's need and reading

level (Ivey & Broaddus, 2000). Students who are paired with the

appropriate text become more engaged in their reading and have more

opportunities to practice a reading skill at their level of understanding

(Vacca, 2002). When students are placed in educational situations

complementing their level of reading ability students make significant

gains in their academic achievement (Ivey & Broaddus, 2000).

CHAPTER 3

DESIGN AND METHODOLOGY

The purpose of this study was to determine the metacognitive

strategies that middle school students employ while reading. Specifically,

this analysis will reveal the metacognitive strategies students report

using. Analysis of students' understanding of their reading metacognition,

coupled with a comparative evaluation of student achievement and

metacognitive data may determine a need for continued instruction in

reading strategies students require in order to comprehend varied genres

and levels of text complexity.

Subjects

Participants included in this study were eighth-grade adolescents.

Participants attended a rural northwestern Pennsylvania middle school.

The population of the middle school stood at 693 students, 179 enrolled

in the eighth-grade class. Of the eighth-grade class, 8% of the population

participated with the free and reduced lunch program. The middle school's

eighth-grade class consisted of 106 males, and 73 females. Of this class

population, 9 students qualified for the learning support program.

Learning support students were not included in this study, leaving the

remaining 170 students to be invited to participate in the study.

Setting

The survey and interviews took place in a northwestern middle

school in Pennsylvania. Students were evaluated during regular school

hours. Evaluation took place in a computer lab located in the eighth-grade

learning area. The computer lab consists of 30 computers, tables, chairs

and a teacher desk located centrally in the room.

Instrumentation

Metacognitive Strategy Index Validity and Reliability

All participants included in the study completed a Metacognitive

Strategy Index (MSI) (Appendix A). Students completed the Index created

by Dr. Maribeth Schmitt, Director of Literacy at Purdue University. Dr.

Schmitt created this survey in 1990, to explore the behaviors students

practice *before, during*, and *after* reading in order to gain comprehension

of the text. The MSI is recognized as a reliable measure of metacognitive

awareness. "Reliability of the MSI reports an internal consistency value of

.87 using the Kuder-Richardson Formula 20" (Schmitt, 1990, p. 455).

Validity of this index was compared with the Index of Reading Awareness

(IRA), which is a report of the reading processes. A statistically significant

correlation was found between the IRA and MSI suggesting both are

measuring similar strategies (Schmitt, 1990). In addition, significant

correlations were found between the MSI and cloze and detection tasks. The cloze and detection task are commonly used to determine a students' level of metacognitive ability (Schmitt, 1990). The Flesch-Kincaid readability tests are designed to indicate comprehension difficulty when reading a passage. The Flesch-Kincaid readability test determined the MSI was written at a fourth grade reading level.

MSI Design

The index was comprised of twenty-five partial statements structured in a multiple-choice format. The statements included in the MSI required the participant to select a completion statement that would indicate awareness of strategies used for fiction text. Ten partial statements required students to respond specifically to the thought process they employ *before* they read. Ten partial statements required students to respond to the thought process *during* reading. Five partial statements require students to respond to actions they take *after* they read. Each statement was focused on a particular metacognitive strategy. Strategies included were: previewing text, predicting and verifying, purpose of reading, self questioning, using schema, summarizing, and using fix-up strategies. The full example can be found in Appendix A and examples of survey items include (Schmitt, 1990):

- Before I begin reading, it's a good idea to

    A. Check to see if I am understanding the story so far.

    B. Check to see if the words have more than one meaning.

    C. Think about where the story might be taking place.

    D. List all of the important details.

- While I'm reading it's a good idea to

    A. Read the story very slowly so that I will not miss any

    important parts.

    B. Read the title to see what the story is about.

    C. Check to see if the pictures have anything missing.

    D. Check to see if the story is making sense by seeing if I can

    tell what's happening so far.

- After I've read a story it's a good idea to

    A. Underline the main idea.

    B. Retell the main points of the whole story so that I can

    check to see if I understood it.

    C. Read the story again to be sure I said all of the words

    right.

    D. Practice reading the story aloud.

In addition to the Metacognitive Reading Index, ten percent of students, randomly selected, participated in an interview with the researcher. Students responded to 12 questions concerning their thought process *before, during* and *after* reading and reason why they use the strategies they perceive using. Questions were created (Appendix E) and administered by the researcher. Interview questions were validated with seventh-grade students. Students were asked the interview questions and adjustments were made according to students' responses. Initially, all questions were generic. The interview questions simply asked students how they read to understand the text. While testing the clarity of the questions, two students wanted to know if the interview questions were referring to fiction books, or textbooks. Students who asked the questions concerning text genre indicated responses would be different for each type of text. At that time, the researcher decided to include interview questions for both fiction and expository texts in order to give some dimension to the interview questions as well as exploring students' responses to both types of texts.

Examples of interview questions are:

- What do you do *before* reading in order to understand the text?

- What do you do *during* reading in order to understand the text?

- What do you do *after* reading in order to understand the text?

Procedures

Students were asked to participate voluntarily in completing the Metacognitive Strategy Index (Appendix A). All consents on behalf of the creator of the instrument (Appendix B) district (Appendix C), as well as parent and student (Appendix D) were confirmed before student participation.

Students completed the Metacognitive Reading Index by using the computer lab facilities in the middle school. Students entered into the computer lab and sat at a self-selected seat. Participants logged on to a website containing the Index. Students entered their student identification for verification of their grade level as well as permission to participate. Students read a set of directions to complete the survey, and then began the survey. The survey required approximately 20 minutes to complete in an online format.

Ten participants were randomly selected for an interview. Signed consent forms were folded and placed into a box. Students' consent forms were randomly drawn from the box by the researcher. Participants who were randomly selected for interviews were placed in a room one at a time for an individual session with the researcher. Students were asked

twelve questions pertaining to their reading (Appendix E). The twelve

questions were focused on the students' processing of the text, in order

to make meaning for themselves. Each interview was audio taped for later

transcription (Appendix F).

Finally, the researcher utilized public information obtained by the

Pennsylvania Department of Education, specifically PSSA reading data, in

order to identify any correlation between student responses to the

Metacognitive Reading Index and academic achievement as reported by

Pennsylvania Department of Education. The 2008 PSSA reading data were

given to the researcher by the participating school district. Data included

student identification number, level of reading achievement on the PSSA

reading test, and PSSA reading score. In addition, the researcher

requested data that indicated students who received learning support

services for the purpose of excluding learning support students from the

study. Students who qualify for learning support services were excluded

due to an inconsistency with the PSSA measure. Learning support

students are administered a variation of the PSSA reading test termed

PASA. The results from the PASA do not coincide with PSSA results and

would misrepresent data derived from the study analyses.

Data Analysis

Data for this study were collected by StudentVoice.com.
Participants logged onto the computer using their student identification
numbers, then entered the URL website issued by StudentVoice. A set of
student directions as well as a twenty-five item Metacognitive Survey
Index was accessed and completed by participants. The completed Index
results were reported to Student Voice.

Ten percent of the participants were randomly selected for further
questioning. The researcher asked twelve questions pertaining to the
student's thoughts while reading. Students' accounts of their reading and
comprehension were recorded on audiocassette.

Data collected through the Metacognitive Reading Index, interview
and observation and the PSSA results were triangulated in order to seek
correlation between participant usage of metacognitive strategies and
academic achievement.

Summary

The purpose of this study was to determine what metacognitive
reading strategies eighth-grade students use. Data collected examined
self-reporting as well as outcomes of performance on a statewide-

standardized test. Data were collected to seek correlations between usage of metacognitive reading strategies and academic achievement.

In Chapter 4, data are presented from the results of participant responses from the MSI, PSSA data and student interviews. Trends and correlations will be drawn and analyzed.

CHAPTER 4

DATA ANALYSIS

The purpose of this study was to investigate metacognition perceptions of middle school students. This study evaluated usage of metacognitive strategies among middle school eighth-grade students through self-reporting. This investigation aimed to identify metacognitive strategies that students were aware of as well as employed in order to comprehend the text. Further, a comparison of the usage of strategies and student achievement was drawn to seek correlations between the two.

The hypothesis of this research asserts there is a direct correlation between student achievement and awareness and usage of metacognitive strategies students use before, during and after reading.

Metacognitive awareness was explored using the Metacognitive Survey Index (Schmitt, 1990). The survey consisted of 25 open-ended items probing students about the metacognitive strategies they use *before*, *during* and *after* reading. Each item consisted of a partial statement followed by four completion statements. The students were instructed to select one statement that best explained the strategy they utilized. Each of the four statements was labeled using the letters A-D. Of

the four plausible statements, one statement was considered the *desired response*, or the best possible answer. Students reported strategies they perceived utilizing by completing an electronic survey.

In addition to the survey, 10 percent of the participants were interviewed. Interviewed eighth-graders were asked 12 questions concerning the strategies they use *before, during* and *after* reading. Questions were presented to participants in the form of an interview to provide a forum to reinforce or extend beyond the survey responses.

This chapter includes a report of the results of the quantitative analysis of the data from the Metacognitive Survey Index (MSI), followed by a comparison of metacognitive strategies used and PSSA scores. Quantitative data collected by the survey were analyzed using SPSS. Descriptive analyses were used to find frequencies of responses. This chapter concludes with reported results of qualitative analysis of the interviews.

Statistical data represented in this study aim to answer the following research questions:

1. What awareness of metacognitive strategies do middle school students perceive utilizing?

2. What is the correlation between the reported use of strategies and academic achievement?

3. When left to their own devices, what strategies to the students perceive using to understand text that is challenging?

The data are presented in congruence with the research questions listed. Gender data are listed to provide further insight into the participants.

Participants

Eighth-grade middle school students of a rural school district in Northwestern Pennsylvania were invited to participate in this study. This class consisted of 179 students. Nine learning support students were excluded from the study, leaving a remaining 170 student to be invited to participate. Of the 170 students invited to participate in this study, 96 permission letters were signed by both participant and guardian indicating a willingness to participate, 24 students returning permission letters indicated they were not willing to participate, and 50 students did not return their permission letter which led to excluding them from the study.

Table 1 shows the gender breakdown of the participants.

Table 1.

Participants

Gender	Frequency n
Male	55
Female	41
Total	96

Among the participants, (n=55) males and (n=41) females

volunteered to provide their input into this study.

Results

Data Analysis for Research Question 1

Research Question 1 aimed to report awareness of the

metacognitive strategies that participants perceive utilizing while reading.

Participants were administered a 25 item survey. Students were offered a

partial statement that required completion using four plausible completion

statements labeled A through D. Each item offered a *desired response,*

otherwise referred to as the "best answer." Using the term "correct

answer" would indicate that all other responses were wrong. The survey

was designed with a *desired answer* that is indicative of metacognitive

awareness and therefore is referred to as such term throughout this

analyses. Students selected their perception of the strategy they use

before, during and after reading. Table 2 shows the distribution of

student responses collected from the electronic metacognitive survey.

Responses are delineated according to the A-D format provided by the

survey. The partial statement has been abbreviated for this explanation.

The main idea of each statement is provided.

Table 2.

Distribution of Frequency of Survey Responses

Items	A	B	C	D
Statement 1- Before reading I make guesses	40	4	33*	19
Statement 2- Before reading I look at the pictures	16*	50	3	27
Statement 3- Before reading I read the title	3	84*	4	5
Statement 4- Before reading I use the title and pictures	31	10	44*	11
Statement 5- Before reading I decide why I am reading	39*	4	44	9
Statement 6- Before reading I ask myself questions	28	54*	12	2
Statement 7- Before reading I use questions/guesses to guide	66	18*	9	3
Statement 8- Before reading I think about what I already know	25*	60	6	5
Statement 9- Before reading I think about what the characters might be like	3	19	38*	36
Statement 10- Before reading I think about the setting	41	2	42*	11
Statement 11- During reading I check that the story makes sense	36	8	3	49*
Statement 12- During reading I stop and retell main points	70*	16	4	6

* Indicates desired response

Table 2. (continued)
Distribution of Frequency of Survey Responses

	A	B	C	D
Statement 13- During reading I keep thinking of title and pictures	19	16	27*	34
Statement 14- During reading I check to see if I can answer my questions	34	47*	13	2
Statement 15- During reading I check to see if guess are right or wrong	6	25	29	36*
Statement 16- During reading I check that the story makes sense	13	73*	6	4
Statement 17- During reading I answer the questions I ask myself	36*	18	32	10
Statement 18- During reading I try to see if guess are right or wrong	36*	17	14	29
Statement 19- During reading I keep thinking about what I already know	18	43	3	32*
Statement 20- During reading I reread some parts	16*	73	5	2
Statement 21- After reading I check to see if I met the purpose	10	7	67*	12
Statement 22- After reading I retell the main points	10	78*	4	4
Statement 23- After reading I think about what made me predict right/wrong	14	6	46*	30
Statement 24- After reading I think about how it connects to what I know	5	5	10	76*
Statement 25- After reading I put myself in the place of the character	58*	12	7	19

* Indicates desired response

Distribution of Frequency of Survey Responses table indicates students chose the full range of plausible completion statements. *Desired responses* were not always selected. For 18 out of 25 items, the "best answer" was the most frequently given response, however, in all cases, more respondents chose answers other than the "best answer."

74

Table 3 focuses in on *desired responses* "best answer" and shows

the percentage of times participants selected the *desired response* as a

reflection of the strategies they employ in order to understand the text.

Table 3.

Percentage of Students Selecting the Desired Response

	Percent of Desired Response
Statement 1 Before Reading-I make guesses	42%
Statement 2 Before Reading-I look at pictures	17%
Statement 3 Before Reading-I read the title	88%
Statement 4 Before Reading-I use the title and pictures	46%
Statement 5 Before Reading-I decide why I am reading	41%
Statement 6 Before Reading- I ask myself questions	56%
Statement 7 Before Reading-I use questions/guess to guide	19%
Statement 8 Before Reading-I think about what I already know	26%
Statement 9 Before Reading-I think about what characters might be like	40%
Statement 10 Before Reading-I think about the setting	44%
Statement 11 During Reading- I check that story makes sense	51%
Statement 12 During Reading- I stop and retell main points	73%
Statement 13 During Reading- I keep thinking of title and pictures	28%

Table 3. (continued)

Percentage of Students Selecting the Desired Response

Statement 14 During Reading- I check to see if I can answer my questions	49%
Statement 15 During Reading- I check to see if guesses are right or wrong	38%
Statement 16 During Reading- I check that story makes sense	76%
Statement 17 During Reading- I answer the questions I asked myself	38%
Statement 18 During Reading- I try to see if guesses are right or wrong	38%
Statement 19 During Reading- I keep thinking about what I know	33%
Statement 20 After Reading- I reread some parts	17%
Statement 21 After Reading- I reread some parts	70%
Statement 22 After Reading- I retell the main points	81%
Statement 23 After Reading- I think about what made me predict right/wrong	48%
Statement 24 After Reading- I think about how it connects to what I know	79%
Statement 25 After Reading- I put myself in the place of the character	60%

The data represent the percentages of *desired responses* selected by participants. Of the 25 items, 50 percent or greater selected the desired response 36 percent of the time, leaving 64 percent of the participants selecting a non-desired response.

The 25 items within the survey could be categorized as belonging

to one of seven strategies. Strategies found *before, during and after*

reading include: predicting, purpose setting, self-questioning, background

knowledge, previewing and summarizing and fix-up strategies. Strategies

represented were not equally distributed among open-ended statements.

Explanations of item quantities of each strategy are represented in the

following table as "points possible". Minimum, maximum, mean and

standard deviation statistics represent the *desired responses* or "best

answer" of each student. The lowest points (O) indicates that out of the

total number of participants, there was at least one occurrence when a

participant did not select one "best answer" for that particular strategy.

For example, the table represents there was at least one student who did

not select ANY "best answers" for predicting and verifying. On average

the total number of participants had 3 out of 7 "best answers" for

predicting and verifying. The greatest number of points (7) for predicting

and verifying was attained by at least one participant. The column Points

Possible indicates the number of points possible for each strategy. Points

Possible is equivalent to the number of *desired response* for a particular

strategy in the survey.

Table 4.

Desired Responses Possible and Selected

Strategies	Points Possible	Minimum	Maximum	Mean	Std. Deviation
Predicting and Verifying	7	0	7	3.07	1.50
Purpose Setting	3	0	3	1.29	.724
Self-Questioning	3	0	3	1.43	.992
Background Knowledge	6	0	6	2.82	1.23
Previewing	2	0	2	1.04	.433
Summarization and Fix-up	4	0	4	2.22	.954

Of the 7 possible points available for predicting and verifying, there was at least one student who scored (0) for this strategy and one who scored (7), This indicates that of the 96 students taking the survey, at least one student did not answer with the "best answer" for the strategy of predicting and verifying. This is represented as (0) minimum points awarded. Of the 96 students taking the survey, at least one student responded with all of the "best answers". This is represented as (7) maximum points awarded. The mean of *desired responses* for predicting and verifying is 3.07 with a standard deviation of 1.5. The mean indicates that out of the 96 participants responding, on average (3) "best answers" out of (7) "best answers" were selected for the predicting and verifying strategy.

Of the (3) possible points available for purpose setting, there was at least one student who scored (0) indicating no metacognitive awareness with the strategy of purpose setting and one who scored (3) suggesting complete awareness. The mean of *desired responses* for purpose setting is 1.29 with a standard deviation of .724. The mean demonstrates that out of the 96 students taking the survey, on average, at least (1) "best answer" out of "3" possible "best answers" was selected for purpose setting.

Of the 3 possible points available for self-questioning, there was at least one student who scored (0), indicating no metacognitive awareness of self-questioning and one who scored (3) suggesting complete awareness. The mean of *desired responses* for purpose setting is 1.43 with a standard deviation of .992. The mean indicates that on average at least (1) out of (3) possible "best answers" were selected for self-questioning.

Of the (6) possible points available for background knowledge, there was at least one student who scored (0), indicating no metacognitive awareness of background knowledge, and one who scored (6), suggesting complete awareness. The mean of *desired responses* for purpose setting is 2.82 with a standard deviation of 1.23. The mean

indicates that on average at least (2) "best answers" out of (6) "best answers" was selected by the participants about background awareness.

Of the (2) possible points available for previewing, there was at least one student who scored (0), indicating no metacognitive awareness of previewing and one who scored (2) suggesting complete awareness. The mean of *desired responses* for purpose setting is 1.04 with a standard deviation of .433. The mean indicates that at least (1) "best answer" out of (2) "best answers" was selected for the previewing strategy.

Of the (4) possible points available for summarization and fix-up strategies, there was at least one student who scored (0), indicating no metacognitive awareness of summarization and one who scored (6) suggesting complete awareness. The mean of *desired responses* for purpose setting is 2.22 with a standard deviation of .954. The mean indicates that on average (2) "best answers" were selected out of (4) "best answers for the summarization strategy.

Further exploring the strategies that students report using in order to understand the text, Table 5 provides data for the total number of *desired responses* students report using. The 25-item survey was comprised of 25 points, each item weighing one point. The minimum

reports the lowest number of *desired responses,* or "best answer" by a participant. The maximum represents the greatest number of *desired responses* or "best answer" by a participant. The mean indicates the average of the total number of *desired responses,* or "best answer" of all of the participants.

Table 5.

Total Number of Desired Responses

	Minimum	Maximum	Mean	Std. Deviation
Desired responses selected	2	20	11.87	3.40

Desired responses selected by each participant per survey fell within the range of (2) *desired responses* and (20) *desired responses*. This indicates that at least one student selected only (2) "best answers", while at least one student selected (20) "best answers". The mean indicates that out of a 25-item survey, 11.87 *desired responses* were selected among 96 participants, with a standard deviation of 3.40. The mean represents that on average, (11) "best answers" were selected by all of the participants.

Data Analysis for Research Question 2

Question 2 of this study poses: What is the correlation between the reported use of strategies and academic achievement?

In exploring the relationship between student achievement and preferences of metacognitive skill, the following data will first show the distribution of academic levels of proficiency by PSSA standards, and then explore the relationships between proficiency levels and strategies used.

The data in Table 6 provides information of student proficiency levels as determined by the PSSA reading test. The Pennsylvania Department of Education describes the following level of proficiency: Advanced, Proficient, Basic and Below Basic. The state expects all students' to perform in the proficient range by the year 2014. Table 6 shows the distribution of participants' achievement on the PSSA reading test. Students' level of proficiency, the range of score they had to attain to be in that level, and quantities of students are found within this table.

Table 6.
Frequency of PSSA Proficiency Levels

Levels	Range of Scores*	Frequency	Percent
Advanced	1470-greater	53	55.2
Proficient	1469-1279	31	32.3
Basic	1278-1131	8	8.3
Below Basic	1130-700**	4	4.2
Total		96	100

* PSSA scores have been established by the Pennsylvania
   Department of Education.
** PSSA lowest possible reading score

Descriptive statistics were run to determine frequency of proficiency levels of PSSA reading among the participants of this study. Of the 96 participants included in the study, 84 students scored proficient or higher on the PSSA reading assessment. The remaining 12 students did not meet the state requirement.

Taking PSSA scores and *desired responses* into account, a bivariate correlation was conducted to determine whether or not use of strategies was correlated with PSSA scores.

Table 7.

Correlation of Scores

	Desired Responses Selected
PSSA Score	.088
Sig (2-tailed)	.386

The comparison analysis between PSSA scores and use of strategies as reported by students on the metacognitive reading index, finds no significance.

In further exploration Research Question 2 of whether PSSA reading data and students' use of strategies have a correlation, Table 8 deciphers each strategy represented in the survey and compares it to PSSA reading data to find possible correlations. The correlation for previewing is significant, but negative.

Table 8.

Correlations Between Each Strategy Score and PSSA Reading Scores

	PSSA Score
Predicting and Verifying Pearson Correlation	.060
Sig. (2-tailed)	.563
Previewing Pearson Correlation	-.217*
Sig. (2-tailed)	.034
Purpose Setting Pearson Correlation	.042
Sig. (2-tailed)	.683
Self-Questioning Pearson Correlation	-.119
Sig. (2-tailed)	.247
Background Knowledge Pearson Correlation	-.122
Sig. (2-tailed)	.238
Summarizing and Fix-up Pearson Correlation	.130
Sig. (2-tailed)	.208

* Negative correlation

PSSA data and students' report of strategy use has no positive correlation. There does, however seem to be a negative correlation between previewing and PSSA reading achievement. According to the data, the more the students reported not using the metacognitive strategy of previewing, the greater their achievement was on the PSSA reading test. The hypothesis that there is a direct correlation between student achievement and awareness and usage of metacognitive strategies students use while they are reading is null. Based on data collected and analyzed, the researcher recognizes in this study, that there is no relationship between student achievement and metacognitive awareness and usage of middle school students.

Not related to the research questions, but of interest, further analyses of strategies found significance in the use of strategies with one another. Table 9 represents all of the strategies found within the metacognitive survey. A bivariate correlation was conducted to see if there were any correlations among strategies. This analysis was seeking to find dependencies or tendencies of use among strategies. For example, did students report awareness of background knowledge and self-questioning?

Table 9.

Correlations Among Strategies

		Predict Verify	Preview	Purpose Setting	Self-Question	Back-ground Know-ledge	Sum Fix-Up
Predict Verify	Pearson Correlation	1.000	.092	.125	.339**	.218*	.209*
	Sig. (2-tailed)		.371	.224	.001	.033	.041
Preview	Pearson Correlation	.092	1.000	.129	.032	.290**	-.048
	Sig. (2-tailed)	.371		.212	.760	.004	.644
Purpose Setting	Pearson Correlation	.125	.129	1.000	.235*	.177	.120
	Sig. (2-tailed)	.224	.212		.021	.085	.244
Self-Question	Pearson Correlation	.339**	.032	.235*	1.000	.235*	.145
	Sig. (2-tailed)	.001	.760	.021		.021	.159
Back-ground Know-ledge	Pearson Correlation	.218*	.290**	.177	.235*	1.000	.141
	Sig. (2-tailed)	.033	.004	.085	.021		.171
Sum Fix-up	Pearson Correlation	.209*	-.048	.120	.145	.141	1.000
	Sig. (2-tailed)	.041	.644	.244	.159	.171	

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

When measuring the strength of the linear relationship between strategies, a significant correlation was found. A Pearson correlation was run and found a significant correlation between self-reporting of the strategy and predicting /verifying and self-questioning (r= .339), background knowledge (r= .218), and summarizing and fix up (r= .209). The strategy of background knowledge and previewing (r= 290), self-questioning(r = .235) Finally, the strategies purpose setting and self-questioning reported (r= 235). Students who perceived themselves as predicting and verifying also self-questioned, relied on background knowledge and used summary and fix up strategies. Students who perceived themselves as utilizing the strategy of background knowledge relied on previewing and self-questioning when using the strategy. Finally, when students utilized purpose setting, they simultaneously perceived themselves self-questioning.

Data Analysis for Research Question 3

Question 3 of this study poses: When left to their own devices, what strategies do the students perceive using to understand text that is challenging?

Qualitative data were collected and analyzed from the interviews that were conducted. Data were collected from 10 participants which who

represent 10 percent of the randomly selected population. Data were collected using an interview format. Participants' responses were recorded for later transcription.

The purpose for the interview was to provide students with an opportunity to explain their thinking when reading without a contrived set of responses to select from. Qualitative data collected from the interviews provided authentic student responses which overall gave a comprehensive view of metacognitive strategies students perceive using.

Interview Questions

Randomly selected eighth-grade students were asked a total of 12 questions about their reading (Appendix E). Questions probed students to discuss the metacognitive strategies used *before, during* and *after* reading. Students were asked two sets of questions. The first six questions consisted of strategies used *before, during* and *after* reading a fiction book. The following six questions consisted of strategies used *before, during* and *after* reading a textbook. Students were asked to explain why they chose the strategies they perceive using. Students were asked:

- What do you do *before* reading in order to understand the text?
- Why do you do that?

- What do you do *during* reading in order to understand the text?

- Why do you do that?

- What do you do *after* reading in order to understand the text?

- Why do you do that?

As mentioned earlier, six questions were asked following the format of fiction texts. The words "understand the text," were substituted with "the textbook". The purpose for asking specifically about the textbooks is due to the format of the MSI. The MSI is written with plausible completion statements suitable for fiction texts and does not lend itself to expository text. An example of this can be found in one of the partial statements and plausible responses. The term "story" is indicative of fiction texts:

- While I'm reading it's a good idea to

 A. Read the *story* very slowly so that I will not miss any important parts.

 B. Read the title to see what the *story* is about.

 C. Check to see if the pictures have anything missing.

 D. Check to see if the *story* is making sense by seeing if I can tell what's happening so far.

The MSI leads the survey participant to respond to metacognitive awareness when reading fiction texts, but does not address expository

texts, which is what most middle school students are using in their

content classrooms. Interview questions were designed to inquire about

fiction texts and expository texts. Similar responses to queries related to

fiction texts and expository texts may indicate a transfer of strategies.

Qualitative analysis addresses Research Question 1, *What do*

metacognitive strategies to students report using?

Table 10 illustrates students' responses to the question: What do

you do *before* you read to understand the text? Students are identified

by a random code to protect their anonymity and PSSA reading level of

proficiency. All of the responses from participants are included verbatim.

Table 10.

Qualitative Reporting of Strategies Utilized Before Reading

Student Code	PSSA Read. Achievement	Comments:
620	Proficient	Uhm. I probably have to read it over a couple times Like, either I read over the back or I have to think about like what I am going to read.
634	Advanced	Uhm usually, I kind of skim through the book and I'll look at the chapters sometimes they have names that can help me.
085	Proficient	I usually, ah, before I read the book like I'll look to see what the chapters are called to see if I kind of figure out what its about And then I like the chapter or title of the book
034	Basic	I look at the title and the inside of the book and read what the description is about the book
005	Proficient	Uhm, I normally look at the back of book, and try to uhm just read that and try to understand it
042	Advanced	I read the little summary of the book on the inside of the cover and I read the title and then usually I just start reading from there.
004	Advanced	I basically sometimes I will just look at the back of book that gives you a little insight of what the book is really about or I will think about I'll ask around see if anyone else has read this book and if they like it or not.
077	Advanced	I look over it sometimes, otherwise I don't do anything
798	Proficient	Uhm, I look ahead, look at the pictures and read the title.

Students reported 90 percent of the time using previewing the text. Students expressed that they previewed by:

- reading the back of the book

- skimmed over the text

One student reported using no strategy *before* reading.

Students were asked follow-up questions to their responses asking them what they do before they read. Students report what they

use, but the researcher wanted to explore if the students understood why they chose the strategy reported.

Table 11 Illustrates responses to the question, "*Why do you do that?"* referring to the response they gave for the question *What do you do before you read in order to understand the text?* All of the responses from participants are included verbatim.

Table 11.

Qualitative Reporting of the Purpose of Before Reading Strategies Utilized

Student Code	PSSA Read. Achievement	Comments:
620	Proficient	Because I don't think I'm not that good of a reader so Its harder for me to understand.
634	Advanced	I, why do I want to understand it or? So before I start reading I can like I have an idea of what it might be about.
085	Proficient	Uhm it helps me like figure out what the book is going to be about and where it might go. Like, where, uh, like where it will take place and the plot and setting.
034	Basic	I look at the title and the inside of the book and read what the description is about the book
005	Proficient	Uhm, because it just helps me understand the book, and get me a good idea a grasp on what the book is gonna be about
042	Advanced	cause that way it gives me a little bit of what's what the book is about so I can see if I'd like it or not or if I've read any other books like it.
036	Below Basic	I don't know it just doesn't help me if I like look over the words or anything before.
004	Advanced	Just so I don't jump into a book and not understand anything that's going on.
077	Advanced	So I know what I should pay attention to.
798	Proficient	Cause it helps me get an idea for what I am going to be reading

Students responded most often by explaining they chose the

before reading strategy in order to set a purpose for the book. Eighty

percent of students interviewed relayed:

- so I know what the book is going to be about

- so I know what I should pay attention to

Students who had alternative answers made up 20 percent of the

interviewed participants. They expressed negative efficacy:

- I don't think I am a good reader

- Looking over words does not help me

Table 12 illustrates students' responses to the question: What do

you do *while* you read to understand the text? Students are identified by

a random code and PSSA reading level of proficiency to protect their

anonymity. All of the responses from participants are included verbatim.

Table 12.

Qualitative Reporting of Strategies Utilized While Reading

Student Code	Achievement	Comments:
620	Proficient	Uhm. I probably do have to read it over a couple times
634	Advanced	I go back and reread it sometimes.
085	Proficient	I like if I don't get what I just read I'll reread it till I get it. Or if there's a hard word, Ill do like context clues and, Uhm, ya that's practically all
034	Basic	Uh, I really don't know Nothing I guess.
005	Proficient	Uhm, like if I get done with a chapter and I don't really understand it sometimes I just rewrite it or reread it
042	Advanced	Read Slower. And then ya that's pretty much it.
036	Below Basic	Think about what I'm reading. Nothing else.
004	Advanced	While I'm reading, I kinda like to, kinda sounds dumb, but I like to imagine it's in a movie kinda and make what the characters look like in the movie and how they talk and whatever and when they speak kinda gives me a better understanding.
077	Advanced	Um, I don't know basically just read it and I understand it. If I don't I go back and read it sometimes.
798	Proficient	Um, after awhile I think about what is going on in the book, that's about it.

Of the students responding, 50 percent of the students expressed rereading the text for understanding. Twenty percent concentrated on the sequence of the story. Ten percent of the students reported visualizing *during* reading and 10 percent report doing nothing.

Table 13 Illustrates responses to the question, "*Why do you do that?*" referring to the response they gave for the question "*What do you*

do while you read in order to understand the text?" All of the responses

from participants are included verbatim.

Table 13.

Qualitative Reporting of the Purpose of During Reading Strategies Utilized

Student Code	Achievement	Comments:
620	Proficient	If it's a book that I'm not interested in I really don't want to read it but I have to so I have to do that to make sure I know what it's talking about. And then if it's a book I like, like if I stop at one spot and then I have to start over I have to read the page I ended at again so.
634	Advanced	Well, sometimes its just if I like it I reread it but sometimes if I don't understand it, I'll just reread it. Its fine. I would probably ask someone.
085	Proficient	I do it so that I make sure that I understand what I am reading.
034	Basic	I try just like try and figure it out By listening to what I am reading and stuff and see if I can figure it out.
005	Proficient	Not sure
042	Advanced	Uhm, read slower, so like I read harder books, so I read slower so I can understand it
036	Below Basic	Because it makes me understand the book a little more
004	Advanced	Its I'm not always a great person I just I can't just look at something and learn it I kinda have to see it and hear it and visualize it.
077	Advanced	Sometimes when I read it the first time it does not make sense and if I read it again, it does.
798	Proficient	To know what to..., like what I am going to see next, like a prediction of what's going to happen

Of the students participating in the interview, 80 percent of the students report using the strategy reported to ensure comprehension of the text. Ten percent suggested the use of the prediction strategy and 10 percent did not know why they reported the strategy used *during* reading.

Table 14 illustrates students' responses to the question: *"What do you do after you read to understand the text?"* Students are identified by a random code and PSSA reading level of proficiency to protect their anonymity. All of the responses from participants are included verbatim.

Table 14.

Qualitative Reporting of Strategies Utilized After Reading

Student Code	Achievement	Comments:
620	Proficient	Ah. Probably I do during reading, I take notes so I probably would read over the notes.
634	Advanced	I'd probably think of the entire book as a whole, uhm try and pick out some main points and then if I still don't understand it I'd probably reread it again for the points that I don't understand I would reread.
085	Proficient	Uhm after I read, I usually like kind of summarize the story to myself so that I kind of get what the book was about. Sometimes not always, but I just like think about what I liked about the book and what I didn't and what I thought that the author could have changed.
034	Basic	I try to just go back and read it again see if I missed anything.
005	Proficient	Ah, sometimes I just, ah, go through each chapter just like just skimming to make sure
042	Advanced	I just remember what happened in the beginning and then just go through the key events in the story

Table 14. (continued)

036	Below Basic	Think about what I read.
004	Advanced	As I read I just kinda like recap what I saw sometimes I will go back and read something if I didn't understand it and just basically recap of what I've read.
077	Advanced	Think about it.
798	Proficient	I never really do anything after, I just think about how the book went.

Students responding to what they do *after* they read to help themselves understand the text, resoundingly responded with a reflective comment. 100 percent of the students were in agreement this was the strategy they perceived utilizing. Response that demonstrated reflection after reading were:

- I think about how the book went

- I basically recap what I've read

- Think about what I read

Table 15 illustrates responses to the question, "*Why do you do that?"* referring to the response they gave for the question '*What do you do after you read in order to understand the text?"* All of the responses from participants are included verbatim.

Table 15.

Qualitative Reporting of the Purpose of After Reading Strategies Utilized

Student Code	Achievement	Comments:
620	Proficient	So I understand the book more and know what I'm talking about.
634	Advanced	So I can understand it and once you understand it the book becomes more enjoyable.
085	Proficient	Not sure
034	Basic	Because I kinda want to understand the, like what the book is about instead of just reading it and not understanding the book at all
005	Proficient	So I make sure I understand the book.
042	Advanced	Uhm, that way, I think I feel that that way I know what happened in the book and I can make an image in my head of like real life type of thing
036	Below Basic	Makes me understand the book a little more...same thing.
004	Advanced	In case I have missed anything and so I don't skip over parts.
077	Advanced	I don't know
798	Proficient	I don't know why

Sixty percent of the participants believed the strategy they reported

using helped them to comprehend the book better. Examples of

responses include:

- Makes me understand the book a little more

- So I understand and know what I am talking about

30 percent did not know why they used the strategy they reported. Ten

percent of the group said they did it to make a connection to the text.

Students responded to the last six questions in the context of expository text. Students responded to six questions similarly asked about fiction books The questions were slightly altered by substituting the word "text" with the term "textbooks."

Table 16 illustrates students' responses to the question: What do you do *before* you read to help you understand the textbook? Students are identified by a random code and PSSA reading level of proficiency to protect their anonymity. All of the responses from participants are included verbatim.

Table 16.

Qualitative Reporting of Strategies Utilized Before Reading Textbooks

Student Code	Achievement	Comments:
620	Proficient	Uhm not really anything.
634	Advanced	Nothing
085	Proficient	I usually look at the pictures and see what I'll be reading about.
034	Basic	I look at the title and the inside of the book and read what the description is about the book
005	Proficient	Uhm, no (nothing)
042	Advanced	Ugh, groan *And then after you groan? * I just do what I have to do.
036	Below Basic	Just, I don't really know.

* Interviewer words are in italics

Table 16. (continued)

004	Advanced	I like to know what the teacher having us basically look at I don't just want a teacher to tell me to go to this page and do these problems and wanna know what we were doing.
077	Advanced	Um, if they have a like summary sort of thing before I read, I read that.
798	Proficient	If there is like a diagram, I look at that.

Participants answered this question by indicating that 50 percent of them do not employ any strategies *before* they read a textbook. Most indicated this by responding:

- Nothing

Forty percent of the responses related to previewing the text. This was indicated by the following responses:

- If there is a diagram, I look at that

- If there is a summary,... I read that

Ten percent responded a desire to have a purpose for their reading, indicated in the following response.

- I like to know what a teacher is having me read for

Similarly to the first set of questions, the students were asked follow-up questions to the strategy they reported using. Specifically, students were asked follow-up questions to their responses of what they do before they read a textbook. Students reported what they use, but

the researcher wanted to explore if the students understood why they

chose the strategy reported.

Table 17 illustrates responses to the question, "*Why do you do*

that?" referring to the response they gave for the question "*What do you*

do before you read in order to understand the textbook?" All of the

responses from participants are included verbatim.

Table 17.

Qualitative Reporting of the Purpose of Before Reading Strategies Utilized

for a Textbook

Student Code	Achievement	Comments:
620	Proficient	I don't know
634	Advanced	Not sure
085	Proficient	(shrug)
034	Basic	I don't know
005	Proficient	Don't know
042	Advanced	Because I hate, textbooks aren't entertaining. Its like the book that you can't get into
036	Below Basic	(No response)
004	Advanced	So I can have better understanding basically. Just better understanding.
077	Advanced	Don't know
798	Proficient	It helps me. It helps me know what I'm going to be reading about.

Of the participants responding to the question of why they employ the strategy, 80 percent said they did not know. Twenty percent responded they employed the strategy they reported so they could have a better understanding. Comments made suggesting this strategy are:

- So I can have better understanding…

- It helps me know what I'm going to be reading about

Table 18 illustrates students' responses to the question: "*What do you do while you read to understand the textbook?"* Students are identified by a random code and PSSA reading level of proficiency to protect their anonymity. All of the responses from participants are included verbatim.

Table 18.

Qualitative Reporting of Strategies Utilized While Reading Textbooks

Student Code	Achievement	Comments:
620	Proficient	Either I take notes or I have to reread it at least twice.
634	Advanced	Nothing really
085	Proficient	I usually look at the pictures and see what I'll be reading about. Uh, pictures practically
034	Basic	I like write down big words that I don't know and look them up
005	Proficient	Uhm, sometimes I ah underline stuff so I can refer back to it later if I don't understand
042	Advanced	I think about when I am home and not reading a textbook.

Table 18. (continued)

036	Below Basic	Um, just look it over read it a couple of times if I don't understand it.
004	Advanced	Sometimes I actually draw out scenarios they put in a book like a science book and put some weather fronts moving around.
077	Advanced	I read it slower because it is not as easy to understand.
798	Proficient	Um, I don't really know. I finish what I was reading and hope the rest of the text will tell me what it is about, if not I skip it.

Students responding to this question responded diversely. Rereading or reading slower was reported by 40 percent of the participants. Participants expressed:

- I read it slower because it is not easy to understand

- I look it over a couple of times …

- I underline stuff to refer back to later

Students reporting use of visual support was reported in 30 percent of the participants. Students explained:

- I usually use the pictures in the book

- I draw out scenarios …

Students reporting no use of strategy were reported in 30 percent of the participants.

Table 19 illustrates responses to the question, "*Why do you do that?*" referring to the response they gave for the question "*What do you do while you read in order to understand the textbook?*" All of the responses from participants are included verbatim.

Table 19.

Qualitative Reporting of the Purpose of While Reading Strategies Utilized for a Textbook

Student Code	Achievement	Comments:
620	Proficient	n/a*
634	Advanced	n/a*
085	Proficient	n/a*
034	Basic	n/a*
005	Proficient	n/a*
042	Advanced	'cause its just boring and there's like no use in reading a textbook cause you just don't learn like to me I don't learn from it, its just like reading something and if I can't get into the thing then I'm not gonna put it in my head *Well, how do you learn it then? *** I just copy my friend's notes
036	Below Basic	Helps me know what I'm reading.
004	Advanced	It's just the same with reading any other book I cant just read it and get it.
077	Advanced	n/a*
798	Proficient	n/a*

* Indicates participants were asked the question and did not have an answer
** Indicates researcher's words

The majority of students responding to the question of why they use the strategy, reported with no response. Seventy percent of the

students were asked the question, then reminded of the previous

question, *"What do you do while reading in order to understand the*

textbook?" Participants still did not have an answer. Twenty percent of

the participants reported using the strategy in order to comprehend.

Support statements include:

- I can't just read it and get it

- Helps me to know what I'm reading

Ten percent of the participants said they rely on friends' notes to help

them understand the text.

    Table 20 illustrates students' responses to the question: *"What do*

you do after you read to understand the textbook?" Students are

identified by a random code and PSSA reading level of proficiency to

protect their anonymity. All of the responses from participants are

included verbatim.

Table 20.

Qualitative Reporting of Strategies Utilized After Reading Textbooks

Student Code	Achievement	Comments:
620	Proficient	Reread the notes.
634	Advanced	Reread…Whether you like it or not
085	Proficient	Uhm I kinda skim and scan just to make sure I actually got what I was reading
034	Basic	No not really. nothing.

Table 20. (continued)

005	Proficient	Uhm, while like the book I just go over it and make sure I know everything *Do you?* Ya
042	Advanced	Uhm I just look over my notes
036	Below Basic	Maybe I will like go back and read the passages I didn't understand again.
004	Advanced	Probably look at the questions afterword and make sure I know what the book is talking about.
077	Advanced	Nothing really.
798	Proficient	Um, I look back over it and, well, if I don't get something I look back over it, if I get it, I'm done. Sometimes if I still don't get it, I hope someone will explain it to me.

Students responding to what they do *after* their reading to understand a textbook reported rereading the text in 70 percent of the responses. Statements that support the data include:

- I look back over it

- I will go back and reread the passages I don't understand

Ten percent of the students relied on their notes, while 20 percent of the students perceive not utilizing any strategy after reading a textbook.

Table 21 illustrates responses to the question, "*Why do you do that?*" referring to the response they gave for the question "*What do you do after you read in order to understand the textbook?*" All of the responses from participants are included verbatim.

Table 21.

Qualitative Reporting of the Purpose of After Reading Strategies Utilized

for a Textbook

Student Code	Achievement	Comments:
620	Proficient	n/a*
634	Advanced	n/a*
085	Proficient	n/a*
034	Basic	n/a*
005	Proficient	n/a*
042	Advanced	n/a*
004	Advanced	Just so I remember everything the book is basically teaching me so I don't mess up on anything thing.
077	Advanced	n/a*
798	Proficient	n/a*

* Indicates participants were asked the question and did not have an answer

The majority of students responding to the question of why

they use the strategy provided no response. Eighty percent of the

students were asked the question, then reminded of the previous

question, *"What do you do while reading in order to understand the*

textbook?" Participants still did not have an answer. Twenty percent of

participants responded that they use the strategy to ensure

comprehension. Statements supporting the data include:

- Just so I remember everything the book is basically teaching me

- It helps me understand it

In review of the qualitative data obtained through interviews, students having a higher level of achievement tended to generally be more specific in their interview responses. Students with higher level of proficiency as determined by PSSA testing tended to give answers that were more detailed and indicated they were going deeper in their reading. Such responses indicating deeper reading include but are not limited to words such as:

- visualize

- draw out scenarios

- find it enjoyable

The two students included in the interview who did not score proficient on the PSSA test indicated they read for understanding, but were more generalized in their responses. Responses indicating generalizations include, but are not limited to:

- helps me understand

- reread to understand

- write down big words

Students participating in this study reported metacognitive reading strategies they perceived using by taking part in an electronic survey. Students' frequency of data retrieved from the survey revealed no

significance in perception of strategy usage. Further analyses reviewed the results from the survey and correlated data with PSSA reading level of proficiency. A negative correlation was recognized between previewing and students' PSSA scores. The less the students previewed, the greater their level of proficiency on the PSSA test. Students interview data were collected from 10 percent of the population of participants. Students responded to 12 questions concerning their *before, during* and *after* reading. Students randomly selected both for the survey and the interview were fairly homogeneous in terms of PSSA reading proficiency levels. Participating students scoring proficient on the PSSA standardized tests consisted of 85 percent of the students in the survey, and 80 percent of the students participating in the interview.

Chapter 5 will provide a synthesis of the data and literature. Conclusions will be drawn and recommendations for further research will be discussed.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

In our information-driven society, literacy demands on students are increasing (van den Broek, et al., 2007). In order to meet such challenges Rycik & Irvin (2005) propose "Teachers in middle school require methods that will guide students to become independent in understanding the material they read in and outside of school" (p. 20). For students to be prepared to meet these challenges, instruction must be purposeful and engaging for the learner (Lapp, Fisher & Grant, 2008; Walker & Bean, 2004). It is the teachers' responsibility to ensure that all students are engaged in meaningful reading. Lapp, Fisher & Grant (2008) suggest that teachers and administrators allow more time for independent reading for middle school students. Students should not be reading text that is too challenging or answering questions that are not genuinely linked to the text they are reading (Lapp, Fisher & Grant, 2008).

Students in the elementary school are afforded systematic instruction. Students are taught to read, but instruction for students to learn how to read to comprehend is often limited or does not occur (Jacobs, 2006). Learning to read for understanding is developmental and

needs to be taught over time (Boulware-Gooden et al., 2007). Middle school students are in the process of developing themselves as adult readers (Reeves, 2004). Educators need to provide time and instruction to support them during this time of development. That being said, this study aimed to explore where middle school students, specifically eighth graders, are in their development of metacognitive awareness and how students' awareness correlated with their academic achievement.

The purpose of this study was to evaluate reading strategies that middle school students perceive they use when they read. Evaluating students' awareness and use of reading strategies was accomplished by identifying metacognitive strategies the students perceived utilizing. Students indicated metacognitive awareness by completing the Metacognitive Strategy Index (MSI) electronically. Secondly, randomly selected students were able to discuss their perceptions of metacognitive awareness and usage during an individual interview. Lastly, the researcher conducted analyses to determine if there were any correlations among students' use and awareness of metacognitive reading strategies and their academic achievement on a state standardized test. The results found through this study may help to bring appreciation of the development of metacognitive awareness in the middle school student, as

well as inform curriculum and instructional practices. Lastly, this study will contribute recommendations for teacher preparation programs and accrediting bodies to guide future educators in the direction that will properly prepare them for instructing students for success with the demands of the global age they are entering.

As mentioned in Chapter 2, middle school students are expected to read assignments in textbooks and attain new understandings without having explicit instruction in how to do so (Ivey & Broaddus, 2000; Tovani, 2000, 2004). This study utilized the Metacognitive Survey Index (MSI) for middle school students to report the strategies used to comprehend fiction text. In addition, this study included an interview to explore students' perceptions of reading strategies they utilize with fiction and expository text.

The electronic survey consisted of 25 items containing one partial statement followed by four plausible finishing statements. Students were instructed to select perceived reading strategies used *before, during* and *after* reading. Ten partial statements addressed *before* and *during* reading strategies, and five partial statements addressed *after* reading strategies the students perceived using. In addition, 10 randomly selected participants responded to 12 questions directly related to metacognitive

strategies utilized *before, during* and *after* reading. Among the 12

questions, six questions probed students about their reading in the

context of fiction texts, while six questions inquired about reading in the

context of expository texts. The interview provided an opportunity for

the randomly selected students to give authentic responses concerning

their thoughts while reading. The interview also provided an opportunity

to discuss expository texts, given that the metacognitive survey

addressed only fiction texts. Students' responses both on the survey and

in the interview have been taken into account for this summary, study

conclusions and future recommendations.

Summary of Findings

The findings discussed are limited to this study. Due to the sample

size and demographics of this study, findings cannot be generalized to a

larger population without further testing. Future research in this area of

interest will need to be conducted.

The research questions posed were:

1. What awareness of metacognitive strategies do middle school

    students perceive utilizing?

2. What is the correlation between the reported use of strategies and

    academic achievement?

3. When left to their own devices, what strategies to the students

   perceive using to understand text that is challenging?

The summary of this study will be delineated by research questions

and findings of this study.

Questions 1 & 3 Middle School Students' Awareness and Usage of

Metacognitive Skills

Metacognition refers to thinking about ones' thinking (Flavell,

1979). Recent definitions focus this broad concept into three specific

functions when related to reading. Metacognitive reading is understanding

the purpose of the reading, knowing when comprehension is occurring or

not taking place, and having the strategies to employ when

comprehension is not occurring (Dunlosky & Metcalfe, 2009; Schoenbach

et al., 1999). During this study, all participants were given the

opportunity to respond to the MSI. Randomly selected participants were

included an interview as well. This study was conducted to determine the

level of metacognitive awareness of each student. Research Question 1

sought to evaluate the awareness of metacognitive strategies that

students report using. Students reported awareness of strategies by

responding to a metacognitive reading survey. Research Question 3

sought to evaluate metacognitive strategies students report using. Data

that accounted for metacognitive strategies students utilized were

collected using an interview format. The purpose for the interview was to

provide an opportunity for the students to give authentic responses

concerning the strategies they use. This differed from the survey. The

survey did not allow the students to explain what they used, it merely

provided a set of responses in order to indicate metacognitive awareness.

It is likely, in some cases that students responded to what they perceived

was the "best answer." Their selection does not necessarily reflect

awareness, or the strategies they actually utilize while reading.

SPSS was used to determine item frequencies of survey responses

of participants. According to the data, participating students do not have

an awareness of metacognitive strategies. Of the 96 participants,

metacognitive awareness in a 25-item survey was indicated for six items.

The ratio of items provided, and "best answer" finishing statements

selected is less than significant.

As mentioned, six (6) survey items of 25 were selected at a high

percentage among participants, indicating awareness with these items.

The six (6) items with high percentage of awareness are defined by the

survey as (1) *before* reading item (2) *during* reading items and (3) *after*

reading items. Of the six (6) survey items showing a high percentage of

awareness, with (3) items representing high percentage of awareness, students seem to have greatest awareness of *after* reading strategies.

Beginning with the greatest number of metacognitive strategies selected, *after* reading strategies yielded the greatest number of *desired responses* or "best answers". The MSI survey offered five items concerning *after* reading metacognitive strategies. Of the five items offered, the participants responded at a high percentage to (3) of the items. The survey indicates that students participating in the survey have some sense of *after* reading metacognitive awareness.

Data collected in the interviews were similar to the outcomes of the survey. Students unanimously agreed upon *after* reading strategies. Students responded that when they are completed with their reading, a reflective strategy such as summarizing was the strategy they selected to comprehend the text. The combination of data collected through the interviews and data collected from the MSI suggests the strongest sense of awareness with *after* reading metacognitive strategies.

The second greatest response to metacognitive strategies used was for *during* reading strategies. Of the 10 items offered in the survey relating to *during* reading metacognitive strategies, (2) items on the survey showed a greater response indicating usage by some of the

participants. The low percentage of items that had the "best answer" selected for the set of *during* reading strategies is not significant.

The interview responses had no significant indication of metacognitive strategy usage as well. Half of the students reported rereading for understanding. The remaining students were divided in their responses reporting visualization, reducing reading rate, and tracking the sequence of the story. The data collected from the interviews combined with the data collected from the Metacognitive Survey Index (MSI) does not show consistency with awareness in *during* reading metacognitive strategies.

Finally, out of 10 items offered on the survey relating to metacognitive reading strategies used *before* reading, one (1) item showed a high rate of selection among students. The MSI data, again were not consistent with the interview responses. Students participating in the interview suggested 90 percent of the time that they used a previewing strategy *before* they began reading. Most students reported looking at the back of the book, or skimming the book to get an indication of the type of text they were reading.

Closer examination of *before* reading strategies represented in the survey finds three previewing questions within the *before* reading

117

strategies offered among the items. A lack of items within the survey representing the strategy of previewing serves as a possible explanation why there were no correlations with the responses of the interviews and data derived from the MSI. Students participating in the interview mostly expressed the use of previewing, yet on the survey, students did not report utilizing the previewing metacognitive strategy when reading.

Other *desired responses* or "best answers" included in the survey pertained to metacognitive strategies that utilized prior knowledge as well as self-questioning. No one reported using either prior knowledge or self-questioning during the interview. This could indicate students have not been taught these strategies or that they are not aware they utilize them. The literature supports the notion that students who have been explicitly taught metacognitive strategies are more likely to use them (Brown, Pressley, Van Meter, & Schuder, 1996; Guthrie, et al., 2004). However, students who are taught metacognitive strategies don't necessarily report being taught such strategies or recognize they are using the strategies (Johnson, Freedman & Thomas, 2008).

Students who did not report awareness or utilization of metacognitive reading strategies could also indicate that students are not using higher order thinking skills when reading. Students who utilize prior

knowledge are taking into account what they already know about a concept and analyzing it to see where it fits into their schema (Marzano, 2007). The same can be said for self-questioning. Students may not have the understanding of comparing and contrasting new concepts with old ones, indicating students may not be analyzing, thus not utilizing higher order thinking, an indicator of metacognition (Boulware-Gooden, et al., 2007; Dunlosky & Metcalfe, 2009).

As mentioned earlier, the researcher interviewed students relating to the metacognitive strategies utilized when reading textbooks. One could assume that there would be a transfer of metacognitive reading strategies from one form of text to another, however, the data report a different outcome. Overall, most students responded negatively to all questions concerning textbooks. Their response can be felt in their words, and their negative feelings toward textbooks was apparent with their affect. The researcher comes to this conclusion using a few examples of responses from the questions during the interview:

- Ugh, groan

- I just do what I have to do

- Just, I don't really know

- Because I hate them, textbooks aren't entertaining.

- It's like the book that you can't get into

- Um, I don't really know. I finish what I was reading and hope the rest of the text will tell me what it is about, if not I skip it

Negative responses when reading textbooks seemed to be a trend among responses. Often students did not have the words to explain what strategies they used, and if they did use a strategy, they were not able to explain why they used it. This was exemplified by the number of questions to which students did not reply. Each student was asked 12 questions. The combined number of questions asked of all of the participants totaled 120 questions. The combined number of questions that participants did not have responses for, totaled 31 questions. Students shook their head, and shrugged their shoulders. The researcher reminded the students' of the question when there was no response by the participants, but still received no response.

Interestingly, students' interview responses to expository text are consistent with their survey responses. Students discussing their strategies when reading expository text were mostly negative or non-existent. Survey data represent similar feedback of awareness. The data from the MSI indicated that metacognitive awareness was not strong and often non-existent. These data are parallel with research mentioned in Chapter 2 in a recent study conducted with students ranging in grades

from 6-12. Johnson, Freedman & Thomas reported that students may in fact use, or receive instruction in metacognitive reading strategies. This does not suggest that students perceive receiving this instruction or using metacognitive strategies (2008). One could speculate that students who participated in the study do not perceive using metacognitive strategies. This could be an explanation of student responses to the survey and interview. Another possible explanation for the students' responses relating to expository text could be motivation.

As mentioned earlier, motivation and metacognition are associated with each other (Dunlosky & Metcalfe, 2009; Guthrie et al., 2004). The level of engagement in reading is dependent on the level of motivation (Duke & Pearson, 2002). During the interviews, students indicated they did not enjoy reading textbooks. Students used negative descriptors to convey their feelings toward textbooks by explaining a lack of engagement and interest with this type of text. Based on this reporting from students, the researcher can presume that motivation in expository text is limited with these participants. Therefore, engagement in expository texts with these participants is likely to be limited as well.

Question 2 Awareness of Metacognitive Skills and Correlations with

Academic Achievement

Current literature supports the theory that metacognitive reading

skills and academic achievement are dependent upon each other

(Johnson, 2006; Papanastasiou, 2008). Students need to be able to *read*

to learn by reading and applying new knowledge to real life situations. It is

not enough for students to know how to read, but they should also be

able to put their reading skills into immediate application in a multitude of

settings (van den Broek et al., 2007).

No Child Left Behind Act (NCLB) has placed great importance upon

proficiency in reading. Research and theory has followed suit by

reinforcing the importance of literacy by linking reading skills to student

achievement (Johnson 2006, Papanastasiou, 2008). This study aimed to

report students' perceptions of metacognitive reading strategies and

draw parallels among strategies and achievement.

A descriptive analysis using SPSS delineated students' reading

achievement on the Pennsylvania System School Assessment (PSSA)

reading test. Analysis reported that of the 96 participants, 12 did not

meet state requirements for proficiency in reading. The literature

indicates that students require metacognitive strategies in order to have

academic success (Baker, 2008; Brown, Pressley, Van Meter, & Schuder, 1996; Johnson, 2006; Pressley, 2002; Schneider, 2008). The participants of this study represented academic success as per state requirements and assessments. The researcher then, would anticipate a high correlation among PSSA reading scores and metacognitive reading strategies. Based on the population of participants, 85 percent of students scoring proficient on the PSSA, the data were expected to show a strong correlation. Using SPSS, a bivariate correlation revealed otherwise. The data demonstrated that student achievement and metacognitive awareness had no apparent correlation. This outcome conflicts with the research of Brown, Pressley, Van Meter, & Schuder (1996). Brown, Pressley & Van Meter found that students receiving explicit instruction with metacognitive strategies were more successful on a standardized reading achievement test than those students who did not receive metacognitive instruction. It would be assumed that a reciprocal outcome would be evident in the current study. Students with high achievement would inhabit metacognitive strategies. Of the 85% of proficient participants included in this study, a correlation was not found.

Further analyses were conducted to determine if a particular strategy showed any correlation. Strategies within the metacognitive

reading survey included: previewing, predicting and verifying, purpose setting, self-questioning, background knowledge, summarizing and fix-up strategies. Data from the survey and PSSA reading test revealed a negative correlation between the strategy of previewing and achievement on the PSSA reading test. These data suggest that as the level of proficiency achieved on the PSSA reading test increased, the less likely students attaining these scores were using the strategy of previewing. This outcome leaves the researcher questioning further interpretation of the content measured on the PSSA test. The researcher could speculate that previewing is not a skill required when taking the PSSA in terms of skills measured by that test. This could explain the negative correlation between PSSA reading scores and Metacognitive Survey Index (MSI) outcomes. The researcher does believe, however, that the choice readers make when using strategies is not indicative of the type of text. Rather, strategy usage is dependent on the need of the reader in order to gain comprehension. Students requiring the use of previewing before reading a text in order to gain comprehension, could have done so for the PSSA reading assessment. This belief challenges the explanation of previewing not being utilized or measured on the PSSA reading assessment.

Interestingly, the survey data reported correlations between the strategies reported. Again, using SPSS, the researcher was interested if there were any tendencies or dependencies among the strategies used. When measuring strength of the linear relationship among strategies, a significant correlation was found. There is a significant correlation among students' reporting of the strategy self-questioning and predicting and verifying. Students who reported utilizing self-questioning typically predicted and verified as well. The data derived from this analysis are consistent with the literature suggesting strategies are not used in isolation, they are used in harmony with one another (Beers, 2003; Pressley, 2002). Knowledge is fluid, just as strategies are fluid (Boulware-Gooden et al., 2007; Duke & Pearson, 2002).

<center>Conclusions</center>

A hypothesis of this study stated that middle school students required metacognitive reading strategies in order to have high reading achievement. The hypothesis that there is a direct correlation between student achievement and awareness and usage of metacognitive strategies students use while they are reading, was not supported. Based on data collected and analyzed, the researcher recognizes in this study, that there is no relationship between student achievement and student

reporting of metacognitive awareness and usage in middle school students. There are many variables that may have contributed to this unsupported hypothesis.

The researcher questions the type of knowledge measured as well as the formatting of the passages and questions on the PSSA test. As mentioned in Chapter 2, the literature supports the notion of strategies enhancing or contributing to academic success (Beers, 2003; Brown, Pressley, Van Meter, & Schuder, 1996; Shoenbach et al., 1999; Vacca, 2002). Students participating in this study were mostly considered by state standards to have achieved academic success as defined by state proficiency levels. Therefore, previously mentioned literature and this research do not coincide. This incongruence of literature and this study leads the researcher to question the measures utilized in this study. Further consideration must be made to the type of knowledge measured on the PSSA test.

One possible reason for the failure to find the expected correlation between the reported use of metacognitive strategies and PSSA scores may be due to a possible "ceiling effect" (IAR, 2007). The PSSA reading scores may not have resulted in sufficient variance in scores to reveal any possible correlation with metacognitive strategy use. In the sample of

scores for this study, 85% of students scored at proficient or above. If the sample had included a wider range of PSSA reading scores, it is possible that a correlation with the reported use of metacognitive strategies might have been observed. The researcher would argue that although the majority of participants are proficient on the PSSA reading assessment, the ceiling effect of PSSA reading achievement should not have a bearing on a correlation. The literature supports otherwise.

The literature supports the notion that proficient readers utilize several strategies (Baker, 2008; Pressley, 2002). One could speculate that a strong positive correlation with at least one of the strategies would exist.

Finally, the researcher questions whether it is feasible to try to correlate a generalized assessment such as the PSSA, with such a specific assessment as the MSI. Measuring general knowledge and specific knowledge may have caused the discrepancy between the hypothesis supported by the literature, and research outcomes of this study.

Implications

Implications of this study are discussed as it relates to student achievement with or without metacognitive reading strategies. Although this study suggests there is no correlation between metacognitive

awareness and achievement on a standardized assessment, current data

and research related to middle school achievement suggest otherwise

(Baker, 2008; Brown, Pressley, Van Meter, & Schuder, 1996; Guthrie,

2008; Humphrey, 2002; Vacca, 2002). In addition, implications of

curriculum and instruction and its relationship to student achievement will

be discussed, along with metacognitive reading and teacher dispositions.

Student Achievement

Demands of future graduates remain unknown as to the particular

tasks they will be expected to accomplish, but one thing is for certain,

students will be expected to utilize higher order thinking skills in order to

perform such tasks (Humphrey, 2002). In order for students to be

successful in and out of the school setting, students require instruction in

reading strategies (Guthrie, 2002). Too many students have consistently

maintained a reading level of less than proficient in the United States for

the last 11 years. As reported in Chapter 2, outcomes in reading for 68

percent of eighth-grade students have been basic or below basic (NAEP,

2007). This statistic is unacceptable. Certainly, school achievement rates

may vary from school to school (Papanastasiou, 2008). The nation,

however, is reporting consistency with ill-prepared students in the area of

reading, and this must be remediated.

Another cause for concern are the data suggesting that students who have low achievement in reading, remain low achieving in reading, while the higher achieving remain high (NAEP, 2007). This trend is likely to continue unless students receive explicit reading instruction.

Curriculum and Instruction

Many middle school instructional curriculums may be responding to the literature suggesting literacy instruction across content areas. Curriculums may adopt a metacognitive approach or a differentiated model but this does not mean that middle school teachers will deliver such instruction.

Teacher Disposition

To become a secondary teacher, specific content must be mastered in a plan of study determined by the university they are attending. The number of hours scheduled for a pre-service teacher to become certified in their content area is considerable. Pre-service secondary teachers are required to carry full credits in their field of study and complete methodology courses in teaching. Throughout their coursework, students attending accredited universities are required to take one course of content literacy (NCATE, 2009). One course is not substantial and certainly does not prepare the pre-service student for

reading instruction. When secondary pre-service teachers become employed they are often faced with the challenges of a classroom with diverse reading abilities. Teachers' dispositions become critical to learning the tools required to teach content literacy in challenging classrooms.

Teachers must seek out professional development that will extend their understanding of students' reading development and strategies to use within a content area classroom. As mentioned in Chapter 2, some teachers do not view reading instruction as part of their responsibility and frankly do not see the instructional value in content literacy. Ivey and Broaddus (2000) assert, "Many middle school teachers are reluctant to teach reading, either because they feel inadequately trained or because they consider it someone else's responsibility" (p. 68). Teachers in content area classrooms are often well versed in their content, but are often not taught instructional techniques on how to present that content to a class with multiple levels of reading ability. Therefore, teachers lack understanding of reading instruction and more specifically understanding of supporting students' comprehension of content reading assignments (Blanton et al., 2007; Tovani, 2000). A teacher with a disposition of ongoing growth has a positive attitude concerning learning new instructional strategies, which ultimately benefits their students.

(McLaughlin & Allen, 2002; Shoenbach et al.,1999). Teachers who will not shift the responsibility of content literacy on to someone else, but take responsibility for it within their own classroom will make the greatest impact on their students. Teachers who have a positive disposition, with regard to instructing content literacy, are committed to making the time for students to become aware of their learning, and to scaffold new approaches to reading while simultaneously addressing concepts within their content area. When content teachers make the commitment to instruct content literacy, there will be a greater chance of increasing reading abilities and overall academic achievement. As Campbell and Kmiecik (2004) put best, " If students are to achieve high literacy standards, evidence strongly suggests that what teachers know and can do is one of the more important factors influencing student achievement" (p 3).

While this present study focused on students' metacognitive awareness and correlations with student achievement, the researcher has offered suggestions for teacher preparation and development. These suggestions follow suit with propositions represented in the research literature, of studies resulting in both positive and negative outcomes students' metacognitive abilities. (Baker, 2008; Beers, 2003; Block,

2008; Block & Duffy, 2008; Boling & Evans, 2007; Boulware-Gooden et al. 2007; Brown, 1979; Cummins, Stewart & Block, 2005; Markman,1977; Pressley, 2002, Shoenbach et al., 1999; Vacca 2002)

Recommendations for Further Research

There are several research studies recommended based on this study. First, a study on PSSA standardized tests and the level of thinking required to be considered proficient in reading is recommended. The literature is presenting that it is imperative for students to be prepared for our global society. Students will be required to read text and communicate responses independently. The nation's department of education resources is reporting that students are not adequately meeting proficiency levels in reading. Are standardized tests more generalized in tested content in order for students to achieve proficiency by assessing general knowledge at a basic level? A comparison between state assessments and national assessments could determine if proficiency levels are comparable at both state and national levels.

Expository text is the type of text most used for instruction in middle school. From middle school to high school and then college or entering the working community students must be able to interpret expository text in order to be functional in their communication with the

132

world around them. Research on metacognitive reading with expository text is limited to recall (Cain, Bryant & Oakhill, 2004; Watson & Elliot, 2007). Extending research in this area is recommended.

There is a need for a valid and reliable metacognitive reading instrument for expository text (Baker, 2008; Block & Duffy, 2008; McLain, Gridley & McIntosh, 1991). It would be interesting to explore students' perceptions of the metacognitive reading strategies they utilize while reading textbooks or instructional materials. An instrument would provide quantitative measures of students' perceptions with expository text.

Research that evaluated and reported reading instruction in the middle school would contribute to the literature suggesting reading instruction is limited. Exactly how much instruction is considered limited? An evaluation and reporting of reading instruction in the middle school would offer support to the literature and quantify reading instruction occurring in the middle school classroom.

Qualitative data concerning attitudes with middle school and high school students could extend educators' understandings of students' challenges with expository text. Although this is one area of the research most represented, more contributions are necessary to generalize

educators' understandings. It is through understanding that partnerships can be forged between students and teacher to ultimately enhance the students' learning.

Research on secondary teachers and their sense efficacy in teaching reading skills and strategies may open the door to new understanding of teachers' attitudes about reading and their needs during their teacher preparation experience to better prepare them for the diverse classrooms they are entering.

In summation, middle school students are not typically afforded explicit reading instruction. This becomes a problem when students are faced with a rigid curriculum that requires readers and learners to understand text independently. As a result of this reliance, middle school students who do not have reading strategies mastered, tend to fall farther and farther behind in school. Even as the non-proficient trend in reading scores persists, many students continue to receive instruction that does not engage them.

Through metacognitive reading strategies, students become engaged in their reading. Students focused on their purpose for reading, know when they are understanding the text and have strategies that help

them to understand the text if they do not comprehend. The use of metacognition engages the student in the reading process.

This study evaluated middle school student's reporting of their metacognitive reading. Participants reported perceived metacognitive strategies by completing a metacognitive strategies index. Ten percent of the participants were interviewed to provide further insight into the strategies students use while reading fiction and expository texts.

Data were analyzed and outcomes revealed no correlations between students' reporting of perceived strategies and academic achievement. Further, there was no indication of awareness of metacognition as well. There were, however, several correlations among strategies that students reported utilizing. Students reporting use of the strategy *self-reporting* tended to use the strategy of predicting and verifying, self-questioning, background knowledge and summarizing and fix up as well. Students reporting use of background knowledge also reported using either previewing or self-questioning. Finally, students who utilize self-questioning simultaneously used the strategy of purpose setting.

The data presented did not support the hypothesis of this study. The researcher's hypothesis suggested a correlation between students' reporting of metacognitive strategies and academic achievement. The

analysis of the data did not affirm the hypothesis, but rather, presented opportunities for new hypotheses to be developed. Questions emerging from this research include exploration into the construct of the PSSA test. Research delving into the types and levels of knowledge tested on the PSSA is one possibility. Finally, qualitative data collected from middle school students could broaden educators' perspectives on students' attitudes and challenges with expository text. Understanding is the first step to bridging the disparities between those who have understanding, and those who do not.

It is through understanding that partnerships can be forged between students and teachers to ultimately enhance students' learning. Enhancing students' understandings by teaching them strategies in reading provides opportunities for students to not only read the text, but to extend those words into new ideas that will structure their lives, and hopefully the lives around them.

References

Academic Achievement Test (2008). *ACT high school profile report: The graduating class of 2008, National.* Retrieved February 2, 2009 from http://www.act.org/news/data/08/pdf/National2008.pdf

Afflerbach, P. (2002). Verbal reports and protocol analysis. In M. Kamil, P., Mosenthal, P.D. Pearson & R. Barr (Eds.), *Methods of literacy research: The methodology chapters from the handbook of reading research.* (pp. 87-104). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Baker, L. (2008). Metacognitive development in reading: Contributors and consequences. In K. Mokhatari & R. Sheorey (Eds.), *Reading strategies of first and second language learners: See how they read* (pp. 25-42). Norwood, MA: Christopher Gordon.

Baker, L. (2008). Metacognition in comprehension instruction: What we've learned since NRP. In C. Block & S. Parris (Eds.). *Comprehension instruction: Research-based best practices* (pp. 65-80). NY: The Guildford Press.

Beers, K. (2003). *When kids can't read: What teachers can do.* Portsmouth, NH: Heinemann.

Beers, K. & Samuels, B. (1998). *Into focus: Understanding and creating middle school readers.* Norwood, MA: Christopher-Gordon Publishers.

Blanton, W., Wood, K. & Taylor, B. (2007). Rethinking middle school reading instruction: A basic literacy activity. *Reading Psychology, 28*(1), 75-95.

Block, C. (2008). Research on teaching comprehension: Where we've been and where we're going. In C. Block & S. Parris (Eds.), *Comprehension instruction: Research-based best practices* (pp. 19-37). NY: The Guildford Press.

Boling, C. & Evans, W. (2008). Reading success in the secondary classroom. *Preventing School Failure, 52*(2), 59-64.

Boulware-Gooden, R., Carreker, S., Thornhill, A. & Joshi, R.M. (2007). Instruction of metacognitive strategies enhances reading comprehension and vocabulary achievement of third-grade students. *The Reading Teacher, 61*(1), 70-77.

Braunger, J., Donahue, D., Evans, K. & Galguera, T. (2005). *Rethinking preparation for content area teaching: The reading apprenticeship approach.* San Francisco, CA: Jossey-Bass.

Brown, A. (1978). Knowing when, where, and how to remember: A problem of metacognition. In R. Glaser (Ed.), *Advances in instructional psychology* (pp. 367-406). New York: Halsted Press.

Brown, D. & Knowles, T. (2007). *What every middle school teacher should know.* Portsmouth, ME: Heinemann.

Brown, R., Pressley, M., Van Meter, P. & Schuder, T. (1996). A quasi-experimental validation of transactional strategies instruction with low-achieving 2nd grade readers. *Journal of Educational Psychology, 88*(1), 18-37.

Brozo, W. (2008). Motivating students to read in the content classroom: Six evidenced based principles. *The Reading Teacher, 62*(2), 172-174.

Bruner, J. S. (1975). The ontogenesis of speech acts. *Journal of Child Language, 2*(1), 1-40.

Bruning, R., Schraw, G. & Ronning, R. (1998). *Cognitive psychology and instruction.* Upper Saddle River, NJ: Merrill.

Cain, K., Bryant, P. & Oakhill, J. (2004). Children's reading comprehension ability: Concurrent prediction by working memory, verbal ability, and component skills. *Journal of Educational Psychology, 96*(1), 31-42.

Campbell, M. & Kmiecik, M. (2004). The greatest literacy challenges

facing contemporary high school teachers: Implications for

secondary teacher preparation. *Reading Horizons, 45(1), 1-26.*

Center for Public Education. (2007). *Nation's report card finds decline in

12th grade reading scores.* Retrieved December 31, 2008, from

http://www.centerforpubliceducation.org/site/pp.aspx?c=kjJXJ5MP

lwE&b=2537763

Caine, R & Caine, G. (1994). *Making connections: Teaching and the human

brain.* Menlo Park, CA: Addison Wesley.

Cummins, C., Stewart M., & Block, C. (2005). Teaching several

metacognitive strategies together increases students' independent

metacognition. In S. Isreal, C. Block, K. Bauserman, K. Kinnucan-

Welsch (Eds.) *Metacognition in literacy learning: Theory,

assessment, instruction and professional development* (pp. 277-

295). Hillsdale, NJ: Lawrence Erlbaum.

Dole, J. (2000). Explicit and Implicit Instruction in Comprehension. In B.

Taylor, M. Graves, & P. van den Broek (Eds.). *Reading for meaning:

Fostering comprehension in the middle grades.* (pp. 52-69).

Newark, DE: Teachers College Press.

Dunlosky J. & Metcalfe, J. (2009). *Metacognition.* Thousand Oaks, CA:

Sage Publications, Inc.

Duke, N. & Pearson, P. (2002). Effective practices for developing reading

comprehension. In A. Farstrup, S. & Samuels (Eds.). *What research

has to say about reading instruction.* (pp. 205-242). Newark, DE:

The International Reading Association, Inc.

Ehren, B. (2005). Looking for evidence-based practice in reading

comprehension instruction. *Top Language Disorders. 25*(4), 310-

321.

Flavell, J. (1999). Cognitive development: Children's knowledge about the

mind. *Annual Review of Psychology, 50,* 21-45.

Flavell J. (2000). Development of children's knowledge about the mental

world. *Journal of Behavioral Development, 24*(1), 5-13.

Fountas, I. & Pinnell, G. (2006). *Teaching for comprehension and fluency:

Thinking, talking and writing about reading, K-8.* Portsmouth, NH:

Heinemann.

Fountas, I. & Pinnell, G. (2007). *The continuum of literacy learning:

Behaviors, and understandings to notice, teach and support.*

Portsmouth, NH: Heinemann.

Gillet, W., Temple, C., Crawford, A. & Cooney, B. (2003). *Understanding reading problems: Assessment and instruction.* (5th ed.) Boston: Allyn and Bacon.

Glasgow, J. (2005). *Strategies for engaging young adult readers: A social themes approach.* Norwood, MA: Christopher-Gordon Publishers, Inc.

Greenwood, C., Tapia, Y., Abbott, M. & Walton, C. (2003). A building-based case study of evidence-based literacy practices: Implementation, reading behavior, and growth in reading fluency, K-4. *The Journal of Special Education, 37*(2), 95-110.

Griffith, P. & Ruan, J. (2005). What is metacognition and what should its role be in literacy instruction? In S. Isreal, C. Block, K. Bauserman, K. Kinnucan-Welsch (Eds.) *Metacognition in literacy learning: Theory, assessment, instruction and professional development* (pp. 3-18). Hillsdale, NJ: Lawrence Erlbaum Associates.

Guthrie, J. (2008). *Engaging adolescents in reading.* Thousand Oaks, CA: Corwin.

Guthrie, J., Wigfield, A., Barbosa, P., Perencevich, K., Taboada, A., Davis, M., Scafiddi, N. & Tonks, S. (2004). Increased reading comprehension and engagement through concept-oriented reading instruction. *Journal of Educational Psychology, 96*(3), 403-423.

Guthrie, J. & Davis, M. (2003). Motivating struggling readers in middle

school through an engagement model of classroom practice.

Reading & Writing Quarterly, 19(1), 59-85.

Guterman, E. (2002). Toward dynamic assessment of reading: Applying

metacognitive awareness guidance to reading assessment tasks.

Journal of Research in Reading, 25(3), 283-288.

Hallahan, D., & Kauffman, J. (2000). *Exceptional Learners: Introduction to

special education, 8th Edition.* Needham Heights, MA: Allyn & Bacon.

Hare V. & Smith, D. (1982). Reading to remember: Studies of

metacognitive reading skills in elementary school-aged children.

Journal of Educational Research, 75(3), 157-164.

Harvey, S. & Goudvis, A. (2007). *Strategies that work: Teaching

comprehension for understanding and engagement.* Portland, ME:

Stenhouse Publishers.

Humphrey, J. (2002). There is no simple way to build a middle school

reading program. *Phi Delta Kappan, 83*(10), 754-757.

IAR (2007). *Instructional Assessment Resources Glossary*. The University

of Texas at Austin. Retrieved on April 8, 2009 from

http://www.utexas.edu/academic/diia/assessment/iar/glossary.ph

p

Ivey, G. & Broaddus, K. (2000). Tailoring the fit: Reading instruction and middle school readers. *The Reading Teacher, 54*(1), 68-78.

Ivey, G. & Fisher, D. (2005). Learning from what doesn't work. *Educational Leadership, 63*(2), 8-14.

Jacobs, H. (2006). *Active literacy across the curriculum.* Larchmont, NY: Eye on Education.

Johnson H., Freedman, L. & Thomas, K. (2008). *Building reading confidence in adolescents: Key elements that enhance proficiency.* Thousand Oaks, CA: Corwin Press.

Johnson, P. (2006). *One child at a time: Making the most of your time with struggling readers, K-6.* Portland, ME: Stenhouse Publishers.

Keene, E. & Zimmermann, S. (2007). *Mosaic of thought: The power of comprehension strategy instruction.* Portsmouth, NH: Heinemann.

Lapp, D., Fisher, D. & Grant, M. (2008). "You can read this text – I'll show you how": Interactive comprehension strategy. *Journal of Adolescent & Adult Literacy, 51*(5), 372- 383.

Lesley, M., Watson, P. & Elliot, S. (2007). "School" reading and multiple texts: Examining the metacognitive development of secondary-level preservice teachers. *Journal of Adolescent & Adult Literacy, 51*(2), 150-162.

Markman, E. (1979). Realizing that you don't understand: Elementary school children's awareness of inconsistencies. *Child Development 50*(3), 643-655.

Marzano, R., Kendall, J. (2007). *The new taxonomy of educational objectives.* Thousand Oaks, CA: Corwin Press.

McLaughlin, M. & Allen, M. (2002). *Guided comprehension: A teaching model for grades 3-8.* Newark: Delaware. International Reading Association.

McLain, K., Gridley, B. & McIntosh, D. (1991). Value of a scale used to measure metacognitive reading awareness. *Journal of Educational Research, 85*(2), 81-87.

Messina, L. & Baker, E. (2003). Awakening the reader within. In A. Fielding, R. Schoenbach, & M. Jordan (Eds.). *Lessons from reading apprenticeship classrooms, grades 6-12: Building academic literacy.* (pp. 47-90). San Francisco, CA: Jossey-Bass.

Moats, L. (2000). *Speech to print: Language essentials for teachers.* Baltimore, MD: Brookes Publishing.

Morgan, P., Farkas, G. & Hibel, J. (2008). Matthew effects for whom? *Learning Disability Quarterly, 31*(4), 187-198.

National Assessment of Educational Progress. (2007). *The nation's report card: Reading.* Retrieved December 31, 2008, from http://nces.ed.gov/nationsreportcard/pdf/main2007/2007496.pdf

National Center for Higher Education Management Systems (2007). *Progress and completion: Graduation rates.* Retrieved December 31, 2008, from http://www.higheredinfo.org

National Council for Accreditation of Teacher Education (2009). *Program Standards.* Retrieved February 6, 2009, from http://www.ncate.org/institutions/standards.asp

Parris, S., Gambrell, L. & Schleicher, A. (2008). Beyond borders: A global perspective on reading comprehension. In C. Block, S. Parris (Eds.). *Comprehension instruction: Research-based best practices.* (pp. 9-18). NY: The Guildford Press.

Papanastasiou, C. (2008). Factors that distinguish the most from the least effective schools in reading: A residual approach. *Journal of Adolescent & Adult Literacy, 5*1(5), 398-408.

Piaget, J. & Inhelder, B. (1969). *The psychology of the child.* New York: Basic Books.

Pintrich, P. (2002). The role of metacognitive knowledge in learning,

teaching and assessment. *Theory Into Practice, 41*(4), 219-225.

Pressley, M. (2002). Metacognition and self-regulated comprehension. In A. Farstrup & S. Samuels (Eds.). *What research has to say about reading instruction.* (pp. 291-309). Newark, DE: The International Reading Association, Inc.

Radcliffe, R., Caverly, D., Hand, J. & Franke, D. (2008). Improving reading in a middle school science classroom. *Journal of Adolescent & Adult Literacy, 51*(5), 398-408.

Reeves, A. (2004). *Adolescents talk about reading: Exploring resistance to and engagement with the text.* Newark, DE: International Reading Association.

Rycik, J. & Irvin, J. (2005). *Teaching reading in the middle grades: Understanding and supporting literacy development.* Boston, MA: Pearson Education Inc.

Schmitt, M.C. (1990). A questionnaire to measure children's awareness of strategic reading processes. *The Reading Teacher, 43*(7) 454-461.

Schneider, W. (2008). The development of metacognitive knowledge in children and adolescents: Major trends and implications for education. *Mind, Brain and Education, 2*(3), 114-121.

Schoenbach, R. (2003). Supporting adolescent readers: An introduction to the academic literacy course and the reading apprenticeship framework. In A. Fielding, R. Schoenbach, & M. Jordan (Eds.). *Lessons from reading apprenticeship classrooms, grades 6-12: Building academic literacy.* (pp. 1-16). San Francisco, CA: Jossey-Bass.

Schoenbach, R., Greenleaf, C., Cziko, C. & Hurwitz, L. (1999). *Reading for understanding: A guide to improving reading in middle and high school classrooms.* San Francisco, CA: Jossey-Bass.

Sessions, J. & Murray, P. (2007). Striving readers act introduced. *Reading Today, 24*(5), 16.

Shanahan, T. (2002). What reading research says: The promises and limitations of applying research to reading education. In A. Farstrup & S. Samuels (Eds.). *What research has to say about reading instruction.* (pp. 8-24). Newark, DE: The International Reading Association, Inc.

Shannon, P. (2007). *Reading against democracy*. Portsmouth, NH: Heinemann.

Smith, A. (2003). Creating a reading apprenticeship classroom. In A. Fielding, R. Schoenbach, & M. Jordan (Eds.). *Lessons from reading*

apprenticeship classrooms, grades 6-12: Building academic literacy. (pp. 101-110). San Francisco, CA: Jossey-Bass.

Sodian, B. & Frith, U. (2008). Metacognition, theory of mind, and self-control: The relevance of high-level cognitive processes in development, neuroscience, and education. *Mind, Brain and Education, 2*(3), 111-113.

Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*(4), 360-407.

Stanovich, K. (1994). Romance and reality. *The Reading Teacher, 47*(4), 280-292.

Stanovich, K. (2000). *Progress in understanding reading: Scientific foundations and new frontiers.* New York: Guilford Press.

Strommen, L., & Mates, B. (2004). Learning to love reading: Interviews with older children and teens. *Journal of Adolescent & Adult Literacy, 48*(3), 188-200.

Sungur, S. (2007). Contribution of motivational beliefs and metacognition to students' performance under consequential and non-consequential test conditions. *Educational Research & Evaluation, 13*(2), 127-142.

Theide, K., Dunlosky, J., Griffin, T., Wiley, J., (2005). Understanding the

delayed-keyword effect on metacomprehension accuracy. *Journal of*

Experimental Psychology, 31(6), 1267-1280.

Tomlinson, C. A. (2003). Differentiating instruction for academic

diversity. In J. M. Cooper (Ed*.), Classroom teaching skills, 7th ed* (pp

149-180). Boston: Houghton Mifflin.

Tovani, C. (2004). *Do I really have to teach reading?: Content*

comprehension, grades 6-12. Portland, ME: Stenhouse Publishers.

Tovani, C. (2000). *I read it, but I don't get it: Comprehension strategies*

for adolescent readers. Portland, ME: Stenhouse Publishers.

United States Department of Education. (2008). *Public law print of pl*

107-110, the no child left behind act of 2001. Retrieved on

December 31, 2008, from

http://www.ed.gov/policy/elsec/leg/esea02/107-110.pdf

Vacca, R. (2002). Making a difference in adolescents' school lives: Visible

and invisible aspects of content reading. In A. Farstrup & S. Samuels

(Eds.). *What research has to say about reading instruction.* (pp.

184-205). Newark, DE: The International Reading Association, Inc.

van de Broek, P., McMaster, K., Kendeou, P. & Espin, C. (2007). Higher-

order comprehension processes in struggling readers: A perspective

for research and intervention. *Scientific Studies of Reading, 11*(4), 289-312.

Vandergrift, L., Goh, C., Mareschal, C. & Tafaghodtari, M. (2006). The metacognitive awareness listening questionnaire: Development and validation. *Language and Learning, 56*(3), 431-462.

Van de Grift, W. & Houtveen, A. (2006). Underperformance in primary schools. *School Effectiveness and School Improvement, 17*(3), 255-273.

van den Broek, P., Kremer, K. (2000). The mind in action: What it means to comprehend during reading. In B. Taylor, M. Graves, & P. van den Broek (Eds.). *Reading for meaning: Fostering comprehension in the middle grades.* (pp. 1-31). Newark, DE: Teachers College Press.

Vygotsky, L. (1978). *Mind in society: The development of higher mental psychological powers.* Cambridge, MA: Harvard University Press.

Walker, N. & Bean, T. (2004). Using multiple texts in content area classrooms. *Journal of Content Area Reading, 3*(1), 23-35.

Williams, J. (2008). Explicit instruction can help primary students learn to comprehend expository text. In C. Block, S. Parris (Eds.). *Comprehension instruction: Research-based best practices.* (pp. 171-182). NY: The Guildford Press.

Instrument

Directions: Think about what kinds of things you can do to understand a story better before, during and after you read it. Read each of the lists of four statements and decided which one of them would help you the most. There are no right answers. It is just what you think would help the most. Circle the letter of the statement you choose.

I. In each set of four, choose the one statement which tells a good thing to do to help you understand a story better *before* you read it.

1. Before I begin reading, it's a good idea to
    A. See how many pages are in the story.
    B. Look up all of the big words in the dictionary.
    C. Make some guesses about what I think will happen in the story.
    D. Think about what has happened so far in the story.

2. Before I begin reading, it's a good idea to
    A. Look at the pictures to see what the story is about.
    B. Decide how long it will take me to read the story.
    C. Sound out the words I don't know.
    D. Check to see if the story is making sense.

3. Before I begin reading, it's a good idea to
    A. Ask someone to read the story to me.
    B. Read the title to see what the story is about.
    C. Check to see if most of the words have long or short vowels in them.
    D. Check to see if the pictures are in order and make sense.

4. Before I begin reading, it's a good idea to
    A. Check to see that no pages are missing.
    B. Make a list of words I'm not sure about.
    C. Use the title and pictures to help me make guesses about what will happen in the story.
    D. Read the last sentence so that I will know who the story ends.

5. Before I begin reading, it's a good idea to
   A. Decide on why I am going to read the story.
   B. Use the difficult words to help me make guesses about what will happen in the story.
   C. Reread some parts to see if I can figure out what is happening if things aren't making sense.
   D. Ask for help with the difficult words.

6. Before I begin reading, it's a good idea to
   A. Retell all of the main points that have happened so far.
   B. Ask myself questions that I would like to have answered in the story.
   C. Think about the meanings of the words which have more than one meaning.
   D. Look through the story to find all of the words with three or more syllables.

7. Before I begin reading, it's a good idea to
   A. Check to see if I have read the story before.
   B. Use my questions and guesses as a reason for reading the story.
   C. Make sure I can pronounce all of the words before I start.
   D. Think of a better title for the story.

8. Before I begin reading, it's a good idea to
   A. Think of what I already know about the things I see in the pictures.
   B. See how many pages are in the story.
   C. Choose the best part of the story to read again.
   D. Read the story aloud to someone.

9. Before I begin reading, it's a good idea to
   A. Practice reading the story aloud.
   B. Retell all of the main points to make sure I can remember the story.
   C. Think of what the people in the story might be like.
   D. Decide if I have enough time to read the story.

10. Before I begin reading, it's a good idea to
   A. Check to see if I am understanding the story so far.
   B. Check to see if the words have more than one meaning.

C. Think about where the story might be taking place.

D. List all of the important details.

II. In each set of four, choose the one statement which tells a good thing to help you understand a story better *while* you are reading it.

11. While I'm reading it's a good idea to

    A. Read the story very slowly so that I will not miss any important parts.

    B. Read the title to see what the story is about.

    C. Check to see if the pictures have anything missing.

    D. Check to see if the story is making sense by seeing if I can tell what's happening so far.

12. While I'm reading it's a good idea to

    A. Stop to retell the main points to see if I am understanding what is happened so far.

    B. Read the story quickly so that I can find out what happened.

    C. Read only the beginning and the end of the story to find out what it is about.

    D. Skip the parts that are too difficult for me.

13. While I'm reading it's a good idea to

    A. Look all of the big words up in the dictionary.

    B. Put the book away and find another one if things aren't making senses.

    C. Keep thinking about the title and the pictures to help me decide what is going to happen next.

    D. Keep track of how many pages I have left to read

14. While I'm reading it's a good idea to

    A. Keep track of how long it is taking me to read the story.

    B. Check to see if I can answer any of the questions I asked before I started reading.

    C. Read the title to see what the story is going to be about.

    D. Add the missing details to the pictures.

15. While I'm reading it's a good idea to

    A. Have someone read the story aloud to me.

B. Keep track of how many pages I have to read.

C. List the story's main character.

D. Check to see if my guesses are right or wrong.

16. While I'm reading it's a good idea to

A. Check to see that the characters are real.

B. Make a lot of guesses about what is going to happen next.

C. Not look at the pictures because they might confuse me.

D. Read the story aloud to someone.

17. While I'm reading it's a good idea to

A. Try to answer the questions I asked myself.

B. Try not to confuse what I already know with what I'm reading about.

C. Read the story silently.

D. Check to see if I am saying the new vocabulary words correctly.

18. While I'm reading it's a good idea to

A. Try to see if my guesses are going to be right or wrong.

B. Reread to be sure I haven't missed any of the words.

C. Decide on why I am reading the story.

D. List what happened first, second, third and so on.

19. While I'm reading it's a good idea to

A. See if I can recognize the new vocabulary words.

B. Be careful not to skip any parts of the story.

C. Check to see how many of the words I already know.

D. Keep thinking of what I already know about the things and ideas in the story to help me decide what is going to happen.

20. While I'm reading it's a good idea to

A. Reread some parts or read ahead to see if I can figure out what is happening if things aren't making sense.

B. Take my time reading so that I can be sure I understand what is happening.

C. Change the ending so that it makes sense.

D. Check to see if there are enough pictures to help make the story ideas clear.

III. In each set of four, choose the one statement which tells a good thing to do to help you understand a story better *after* you read it.

21. After I've read a story it's a good idea to
    A. Count how many pages I read with no mistakes.
    B. Check to see if there were enough pictures to go with the story to make it
       interesting.
    C. Check to see if I met my purpose for reading the story.
    D. Underline the causes and effects.

22. After I've read a story it's a good idea to
    A. Underline the main idea.
    B. Retell the main points of the whole story so that I can check to
       see if I understood it.
    C. Read the story again to be sure I said all of the words right.
    D. Practice reading the story aloud.

23. After I've read a story it's a good idea to
    A. Read the title and look over the story to see what it is about.
    B. Check to see if I skipped any of the vocabulary words.
    C. Think about what made me make good or bad predictions.
    D. Make a guess about what will happen next in the story.

24. After I've read a story it's a good idea to
    A. Look up all of the big words in the dictionary.
    B. Read the best parts aloud.
    C. Have someone read the story aloud to me.
    D. Think about how the story was like things I already knew about
       before I started reading.

25. After I've read a story it's a good idea to
    A. Think about how I would have acted if I were the main character
       in the story.
    B. Practice reading the story silently for practice of good reading.
    C. Look over the story title and pictures to see what will happen.
    D. Make a list of the things I understand the most.

Schmitt, M.C. (1990). A questionnaire to measure children's awareness of strategic reading processes. *The Reading Teacher, 43*(7) 454-461.

Appendix B
Instrumentation Consent

Dear Ms. Tong,

I am delighted that you are interested in the Metacomprehension Strategy Index. When I published it in The Reading Teacher, I placed it into the public domain so that anyone could use it and adapt it to his or her own specific needs. Therefore, you do not need my permission to use it. However, I do always ask the researcher to share their study with me to see how the MSI was use, so if you wouldn't mind... :-)

Best wishes with your work!!

Maribeth Schmitt

———
————————————————————————
CENTER FOR LITERACY EDUCATION AND RESEARCH
Maribeth Cassidy Schmitt, Ph.D., Center Director
Jean Adamson Stanley Professor of Literacy
Purdue University College of Education
100 North University Street
West Lafayette, Indiana 47907-2098
(phone) 765 494 5683 (FAX) 765 496 2305
Email: mschmitt@purdue.edu
CLEAR Website: http://clear.education.purdue.edu

-----Original Message-----
From: Lisa Tong [mailto:lisatong2@yahoo.com]
Sent: Monday, May 26, 2008 11:13 PM
To: Schmitt, Mary E.
Subject: request for use of MSI

Dr. Schmitt,
I am a doctoral student at Indiana University of Pennsylvania. I have finished my course work and have begun the process of the dissertation. The title of my dissertation is :Conversations About Reading: An Evaluation of the Metacognitive Processes Middle School Students Utilize While Reading.

I am writing you to request permission to use the Metacomprehension Strategy Index. I located it during my discovery of research instruments and find it would be perfect to answer the questions that I have for students concerning before, during and after reading practices. This Index would be used with 8th grade students.
Please grant me permission to use this instrument.

If you have any questions surrounding the use of the instrument, I am happy to supply the answers.

With much respect,
Lisa Tong
(814)397-5402

Appendix C

District Consent

Working Title: Conversations about Reading: An Evaluation of the Metacognitive Processes Middle School Students Utilize While Reading

School Board Members and Mr. Karns,

I am requesting permission to include the General McLane School District in the following study: This letter is to request your permission to allow the General McLane 8th grade students to participate in a survey that examines how they think while they are reading. Last year, the 8th grade students participated in a similar activity. As the literacy coach, I believed that survey would give the teachers some insight into the level of understanding the students had about their reading and help them to focus their instruction. The information gathered from the survey allowed the teachers to make better-informed decisions regarding instruction based on the student's responses. I would like to allow the current 8th grade students to participate in the study, and to use the data to draw relationships between reading strategies and student achievement. This information will be valuable to reading research, but more importantly, it would be beneficial to the General McLane community. As a former employee of your district, I found this information valuable, and I believe it will be helpful for your current literacy coach as well as the teachers.

As with any research, student participation is voluntary with the understanding that the participants can withdraw from the research at any time by contacting me via email, postal letter or telephone. Willingness to participate or not participate in the study has no bearing on academic grades. Again, participation is completely voluntary.

This survey will be completed accomplished during homeroom period. This way, instructional time is not compromised. Your students will be asked to anonymously respond to predetermined questions that are administered via the computer. Again, anonymity will be maintained. Any presentation or publication that discuss the findings of this research will continue to maintain anonymity by using pseudonyms in order to protect the identity of all participants.

This study will be conducted for research purposes, and there are no known risks in participating in this study. One potential benefit of this study, however, is that it will provide some information for the teachers to better inform their instruction.

If you are comfortable with your students participating in this research, please sign and date the attached paper and place it in the self-addressed stamped envelope enclosed. A returned, signed letter implies your consent. If you need further clarification on the information presented, please feel free to contact me. An executive summary of the findings from this study will be made available to you upon request.

Thank you for your consideration.

Principle Investigator:
Lisa Ann Tong, D.Ed candidate Indiana University of Pennsylvania
Edinboro University
325 Scotland Road
Miller Hall, 127
Edinboro, PA 16412
814-734-1057
ltong@edinboro.edu

Faculty Sponsor:
Dr. George Bieger
Indiana University of Pennsylvania
114 Davis Hall, IUP
570 S. 11th Street
Indiana, PA 15705
724.357.3285
grbieger@iup.edu

VOLUNTARY CONSENT FORM:

I have read and understand the information and give permission for the study to be conducted in General McLane School District. I understand that responses are completely confidential and that students have the right to withdraw at any time. I have received an signed copy of this Informed Consent Form to keep in the district's possession.

Superintendent (PLEASE PRINT) _____

Signature

_____

Date

_____

Phone number or location where you can be reached _____

I certify that I have explained to the above individuals the nature and purpose, the potential benefits, associated with participants in this research study, and have answered any questions that have been raised.

_____   _____
Date   **Investigator's Signature**

January 22, 2009

Mrs. Lisa Tong
1800 Homestead Lane
Edinboro, PA 16412

Dear Mrs. Tong,

At the January 21, 2009 meeting of the General McLane School District Board of Education, the Directors approved your request to conduct a research project involving 8th grade students in the James W. Parker Middle School in accordance with your proposal.

Best wishes for a productive and meaningful study. We look forward to receiving a copy of your final report.

Sincerely,
GENERAL McLANE SCHOOL DISTRICT

Karen L. Katich
Board Secretary

pc: Dr. Annette M. Rilling, Principal, James W. Parker Middle School
       Mr. John Hansen, Principal, James W. Parker Middle School

Appendix D

Parent and Student Consent

Working Title: Conversations about Reading: An Evaluation of the Metacognitive Processes
            Middle School Students Utilize While Reading

Dear Guardian,
        Your child has been invited to participate in a project that is trying to improve reading
instruction by looking at how students think while they are reading. The following information is
provided so that you are able make an informed decision of whether or not allow your child to
participate in this activity. Your child qualifies to participate in this study because he/she is an 8th
grade student. Participation is voluntary with the understanding that the participants can
withdraw from the research at any time by contacting me via email or postal letter or telephone.
Willingness to participate or not participate in the study has no bearing on academic grades.
Again, participation is completely voluntary.

        This survey will be completed during homeroom period so that your child does not lose
any classroom instruction time. Your child will be asked to respond anonymously to a set of
questions that are administered via the computer. Along with the survey, a small number of
participants will be asked to share their thoughts about reading in an interview. The interview
will be conducted during a 10-20 minute conference during the homeroom period. Their
responses will be tape-recorded and later transcribed for research purposes. Again, anonymity
will be maintained. Any presentation or publication that discusses the findings of this research
will continue to maintain anonymity by using pseudonyms in order to protect the identity of all
participants.

        This study is being conducted for research purposes, and there are no known risks in
participating in this study. One potential benefit of this study, however, is that it will provide
some information for the teachers to better inform their instruction.

        If you are comfortable with your child participating in this research, please sign and date
the attached paper and return it to your child's homeroom teacher. A returned, signed letter
implies your consent. If you need further clarification on the information presented, please feel
free to contact me. An executive summary of the findings from this study will be made available
to you upon request.

Thank you for your consideration.

Faculty Sponsor:

Principle Investigator: Dr. George Bieger
Lisa Ann Tong, D.Ed candidate Indiana University of Pennsylvania   Indiana University of
Edinboro University   Pennsylvania
325 Scotland Road   114 Davis Hall, IUP
Miller Hall, 127   570 S. 11th Street
Edinboro, PA 16412   Indiana, PA 15705
814-734-1057   724.357.3285
ltong@edinboro.edu   grbieger@iup.edu

Parent/Student Consent Form (continued)

VOLUNTARY CONSENT FORM:

I have read and understand the information on the form and I consent to volunteer to be a subject in this study. I understand that my responses are completely confidential and that I have the right to withdraw at any time. I have received an unsigned copy of this Informed Consent Form to keep in my possession.

Parent/Guardian Name (PLEASE PRINT) _____

Signature _____

Date

_____

Phone number or location where you can be reached

_____

Student Name (PLEASE PRINT)

_____

Signature _____

Date

_____

I certify that I have explained to the above individuals the nature and purpose, the potential benefits, associated with participants in this research study, and have answered any questions that have been raised.

_____   _____
Date   **Investigator's Signature**

Appendix E

Interview Questions

1. What do you do *before* reading in order to understand the text?

2. Why do you do that?

3. What do you do *during* reading in order to understand the text?

4. Why do you do that?

5. What do you do *after* reading in order to understand the text?

6. Why do you do that?

7. What do you do *before* reading in order to understand a textbook?

8. Why do you do that?

9. What do you do *during* reading in order to understand a textbook?

10. Why do you do that?

11. What do you do *after* reading in order to understand a textbook?

12. Why do you do that?

Interview 1
Proficient
620

Can You Please Tell me your ID number?
620
Can you tell me what do you do before you read to understand the text? So that you can understand the text?
Uhm. I probably have to read it over a couple times
Read what over?
Like either I read over the back or I have to think about like what I am going to read.
Why do you have to do that?
Because I don't think I'm not that good of a reader so
It's harder for me to understand.
What about during your reading, what do you do in order to understand the text while you're reading?
Uhm. I probably do have to read it over a couple times
Why do you do that?
If it's a book that I'm not interested in I really don't want to read it but I have to so I have to do that to make sure I know what it's talking about. And then if it's a book I like, like if I stop at one spot and then I have to start over I have to read the page I ended at again so. *What do you do after your done reading in order to understand the text?*
Ah. Probably I do during reading I take notes so I probably would read over the notes.
Why do you why do you do that?
So I understand the book more and know what I'm talking about.
What do you do to before you read in order to understand a textbook?
Uhm nothing really.
Is there a reason why you wouldn't try to understand the text before you read it?
Uhm Not really
What about during your reading do you do anything during your reading to understand a textbook?
Either I take notes or I have to reread it at least twice.
Why do you do that?
n/a
What about after reading?
Reread the notes.
Why do you do that?
Uhm. If it's like a class book were reading and the teachers read it over I'll go talk to the teacher but if not then I try to figure it out.

Can You Please Tell me your ID number?
634
Can I ask you, what do you do before you read that helps you understand the text?
Uhm usually I kind of skim through the book and I'll look at the chapters sometimes they have names that can help me.
Why do you do that?
I, why do I want to understand it or?
Sure
So before I start reading I can like I have an idea of what it might be about.
What do you do while your reading that helps you understand the text?
I go back and reread it sometimes.
Do you?
Ya
Ok, uhm why do you do that?
Well, sometimes its just if I like it I reread it but sometimes if I don't understand it, I'll just reread it. It's fine.
Ok and what if you don't understand it after that?
I would probably ask someone.
Ok what do you do after you read that helps you understand the text?
I'd probably think of the entire book as a whole, uhm try and pick out some main points and then if I still don't understand it I'd probably reread it again
 for the points that I don't understand I would reread.
And why do you do that?
So I can understand it and once you understand it the book becomes more enjoyable.
What do you do before reading to understand a textbook?
Uhm well it depends I guess.
Why do you do think that?
Then I guess if you understand it, it would still be more enjoyable.
What do you do while reading to understand a textbook?
Reread
Whether you like it or not
(*Laughter) That's honest, ok thank you so much.*
What do you do after reading a textbook to understand the text?
Nothing really
Why do you do that?
n/a
After reading a textbook, why do you do nothing?
n/a

Can you, can you please tell me your ID number?
085
Can you please tell me what you do before reading that helps you understand the text?
I usually, ah, before I read the book like I'll look to see what the chapters are called to see if I kind of figure out what its about
Ok
And then I like the chapter or title of the book
Ok why do you do that?
Uhm it helps me like figure out what the book is going to be about
Ok
And where it might go.
What do you do while your reading that helps you understand the text?
I like if I don't get what I just read I'll reread it till I get it. Or if there's a hard word, Ill do like context clues and, Uhm ya that's practically all
Why do you do it?
I do it so that I make sure that I understand what I am reading.
What do you do after you read that helps you understand the text?
Uhm after I read, I usually like kind of summarize the story to myself so that I kind of get what the book was about.
Sometimes Not always, but
Uhm
I just like think about what I liked about the book and what I didn't and what I thought that the author could have changed.
When reading textbooks do you, what do you do before you read to understand the text?
I usually look at the pictures and see what I'll be reading about.
And during?
Same thing
Uh, Pictures practically
And then after?
Uhm I kinda skim and scan just to make sure I actually got what I was reading
Why do you do that?
n/a
Ok, alright, thank you.

Ok can you please tell me your ID number?
034
What do you do before reading that helps you understand the text?
I look at the title and the inside of the book and read what the description is about the book
Ok, why do you do that?
Because I want to see what the book is about and see if I like it or not.
Uhm, what do you do while your reading that helps you understand the text? While you're reading,
Can you repeat that again?
Mm hmm, what do you do while you are reading that helps you understand the text?
Uh, I really don't know
It's ok. Do you think you do anything?
No not really.
Ok, why do you think, I mean, how do you know, then what do you do when you don't get the information.
I try just like try and figure it out
By listening to what I am reading and stuff and see if I can figure it out.
Ok what do you do after you read that helps you understand the text?
I try to just go back and read it again see if I missed anything.
Why do you do that?
Because I kinda want to understand the, like what the book is about instead of just reading it and not understanding the book at all
What do you do to understand a textbook before you read it?
I look at the title and the inside of the book and read what the description is about the book
Ok, now when you're reading a textbook do you do anything during your reading to help you understand a textbook?
I like write down big words that I don't know and look them up
Why do you do that?
 n/a
Ok What do you do after you read a textbook, anything?
No not really. nothing.
Why do you do that?
n/a

All right, so can you tell me what your ID number is please?
005
Ok perfect, when you before you read what do you do to help yourself understand the text?
Uhm, I normally look at the back of book, and try to uhm just read that and try to understand it
Ok, why do you do that?
Uhm, because it just helps me understand the book, and get me a good idea a grasp on what the book is gonna be about
Ok, what about while you're reading, what do you do to help yourself understand the text?
Uhm, like if I get done with a chapter and I don't really understand it sometimes I just rewrite it or reread it
Ok, what about after you're done reading, do you do anything to understand the text after you're done?
Ah, sometimes I just ah go through each chapter just like just skimming to make sure
Ok and why do you do that?
So I make sure I understand the book.
Ok, do you do the same thing for textbooks? Before you read a textbook, do you, what do you do?
Uhm, like what do you mean?
What do you do before you read a textbook uhm to understand the textbook? Do you do anything to understand it?
Uhm, no
Ok, while you're reading a textbook, do you do anything to help yourself understand the text?
Uhm, sometimes I ah underline stuff so I can refer back to it later if I don't understand
What do you do after you're done reading a textbook?
Uhm, while like the book I just go over it and make sure I know everything
Why do you do that?
n/a

All right, so what's your ID number?
042
Ok, so my question to you is what do you do before you read in order to understand the text?
I read the little summary of the book on the inside of the cover and I read the title and then usually I just start reading from there.
Ok, uhm why do you do that?
'cause that way it gives me a little bit of what's what the book is about so I can see if I'd like it or not or if I've read any other books like it.
Alright, what about while you're reading, while you're reading what do you do to understand the text?
Uhm, read slower, so like I read harder books, so I read slower so I can understand it And then ya that's pretty much it.
Why do you do that?
Because that way I can ah, I read fast too like at parts where it gets harder I'll read slower and then I'll read faster and that way I'll remember the book what's going on so when you get to the climax you know what happened
Ok, what about at the end, after you're done reading what do you do to understand the text?
I just remember what happened in the beginning and then just go through the key events in the story
Ok, and why do you do that?
Uhm, that way, I think I feel that that way I know what happened in the book and I can make an image in my head of like real life type of thing
Ok, what about textbooks, what do you do before you read a textbook?
Ugh, groan
(laughing) and then after you groan?
I just do what I have to do.
Because I hate, textbooks aren't entertaining.
Its like the book that you can't get into
Alright, what do you do during reading a textbook to understand the text, what do you do while you're reading it to understand it better?
I think about wait, when I am home and not reading a textbook.
(laughs) Why do you do that?
'cause its just boring and there's like no use in reading a textbook cause you just don't learn like to me I don't learn from it, its just like reading something and if I can't get into the thing then I'm not gonna put it in my head
Well, how do you learn it then?
I just copy my friend's notes
What about after you're done reading a textbook, what do you do in order to understand the text?
Uhm I just look over my notes
Ok, alright good

Can you tell me what do you do before reading that helps you understand the text?
Um, nothing really.
Why do you think you don't do anything?
I don't know it just doesn't help me if I like look over the words or anything before.
What do you do while you are reading to help you understand the text?
Think about what I'm reading.
And why do you think about reading?
Because it makes me understand the book a little more.
What do you do after you read that helps you to understand the text?
Think about what I read.
And why do you do that?
Makes me understand the book a little more…same thing.
What about a textbook, what do you do before you read a textbook to make sure you understand the text?
Just I don't really know.
When your reading a textbook what do you do to help yourself understand the text?
Um just look it over read it a couple of times if I don't understand it.
And why do you do that?
Helps me know what I'm reading.
What about after you're done reading a textbook what do you do to help you understand the text better?
Maybe I will like go back and read the passages I didn't understand again.
And why do you do that?
It helps me understand it.

My question to you is what do you do before reading that helps you understand the text?
I basically sometimes I will just look at the back of book that gives you a little incite of what the book is really about or I will think about I'll ask around see if anyone else has read this book and if they like it or not.
Why do you do that?
Just so I don't jump into a book and not understand anything that's going on.
What do you do while your reading that helps you to understand the text?
While I'm reading, I kinda like to kinda sounds dumb but I like to imagine it's in a movie kinda and make what the characters look like in the movie and how they talk and whatever and when they speak kinda gives me a better understanding.
Its I'm not always a great person I just I can't just look at something and learn it I kinda have to see it and hear it and visualize it.
What do you do after you read that helps you understand the text?
As I read I just kinda like recap what I saw sometimes I will go back and read something if I didn't understand it and just basically recap of what I've read.
Why do you do that?
In case I have missed anything and so I don't skip over parts.
What do you do to understand a textbook before you read the text?
I like to know what the teacher having us basically look at I don't just want a teacher to tell me to go to this page and do these problems and wanna know what we were doing. So I can have better understanding basically. Just better understanding.
And what do you do while you're reading that helps you to understand a textbook better?
Sometimes I actually draw out scenarios they put in a book like a science book and put some weather fronts moving around.
And why do you do that?
It's just the same with reading any other book I cant just read it and get it.
And after you read a text book what do you do to understand the text?
Probably look at the questions afterword and make sure I know what the book is talking about.
Why do you do that?
Just so I remember everything the book is basically teaching me so I don't mess up on anything thing.

What do you do before you start reading in order to understand the text?

I look over it sometimes, otherwise I don't do anything.

Why do you do that?
So I know what I should pay attention to.

What do you do while you are reading to understand the text?
Um, I don't know basically just read it and I understand it. If I don't I go back and read it sometimes.

Why do you do that?
Sometimes when I read it the first time it does not make sense and if I read it again, it does.

What do you do after you are done reading to understand the text?
Think about it.

What do you do to understand a textbook before you read?
Um, if they have a like summary sort of thing before I read, I read that.

Why do you do that?
n/a

What do you do while you are reading a textbook to understand the text?
I read it slower because it is not as easy to understand.

Why do you do that?
n/a

What do you do after you are done reading a textbook to understand the text?
Nothing really.
Why do you do that?
n/a

What do you do before you start reading in order to understand the text?
Um, I look ahead, look at the pictures and read the title.

Why do you do that?
Cause it helps me get an idea for what I am going to be reading

What do you do while you are reading to understand the text?
Um, after awhile I think about what is going on in the book, that's about it.

Why do you do that?
To know what to… like what I am going to see next, like a prediction of what's going to happen

What do you do after you are done reading to understand the text?
I never really do anything after, I just think about how the book went.

What do you do to understand a textbook before you read?
If there is like a diagram I look at that.

Why do you do that?
It helps me. It helps me know what I'm going to be reading about.

What do you do while you are reading a textbook to understand the text?
Um, I don't really know. I finish what I was reading and hope the rest of the text will tell me what it is about, if not I skip it.

Why do you do that?
 n/a
What do you do after you are done reading a textbook to understand the text?
Um, I look back over it and, well, if I don't get something I look back over it, if I get it, I'm done. Sometimes if I still don't get it, I hope someone will explain it to me.

Why do you do that?
n/a