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Using self-monitoring strategy instruction to improve reading comprehension in high school students with learning disabilities

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USING SELF-MONITORING STRATEGY INSTRUCTION TO IMPROVE READING COMPREHENSION IN HIGH SCHOOL STUDENTS WITH LEARNING DISABILITIES

by

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Dedication

This thesis is dedicated to my amazing husband Robert, and my two incredible children, Grace and Robbie, who have spent the past three years supporting and encouraging me at every turn. They accepted the fact that Mom would be doing work anywhere we went – at the beach, on the bleachers at basketball game, in the car, and on vacation. They built me an office to complete my studies and never complained when I had to pass on a family activity to get my school work finished. They are the best and I am so thankful for each of them every single day. I would also like to dedicate this thesis to my mother Marianne and step-father Joe who cooked us meals and watched the kids so I could get to class or study for an exam. Finally this thesis is dedicated to all of the great teachers out there who work so diligently every day to help struggling students become successful readers.

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ABSTRACT

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The purpose of this study is to examine and expand current research on the effects of teaching self-monitoring strategies for high school students with specific learning disabilities in order to improve comprehension within a variety of texts. The study was a group design consisting of two groups of high school students with five students in each group. The students ranged in ages from 17.4-19.1 years of age. All students were identified as having a significant reading disability. The dependent variable for this study was immediate recall of comprehension questions from a given passage. Students were given fictional, informational, and everyday text to read then were asked to complete 10 comprehension questions based on the reading. The independent variables were before, during, and after reading strategies, self-monitoring worksheets, and reading material. The mean scores showed an improvement in correct reading comprehension questions from the baseline to the post-assessment. The results suggest implementing instruction in specific reading strategies for older high school students with identified reading disabilities has a positive effect on comprehension.

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Chapter 1

Introduction

Reading is a complex process which requires ongoing instruction and refinement. Many students struggle to utilize strategies to enhance comprehension. Students with specific learning disabilities often lack the ability to read material independently. These students have difficulty effectively comprehending text.

Students diagnosed with learning disabilities most often struggle with reading comprehension. As many as 80% of students with learning disabilities demonstrate weaknesses in reading comprehension (Gersten, Fuch, Williams, & Baker, 2001; Joseph, 2002). Poor comprehension skills have wide ranging effects on student success. Lack of comprehension when reading text, has an impact in all content areas as well as professional success.

Reading comprehension is the most complex of the reading processes. It involves decoding words, fluently reading the words, and understanding what has been read. Students can decode words but may not comprehend what has been read. Reading comprehension is a combination of accurately decoding words, fluently reading words, and using higher level strategies to construct meaning (Kintsch, 1998). Successful reading comprehension is dependent on skills which incorporate decoding with higher level reading skills. Good readers implore strategies to check for understanding before, during, and after reading a text.

At the elementary grade levels, strategy instruction is often incorporated into daily classroom routines. Elementary-age students generally work with a limited number of teachers throughout the school day. These teachers have the capacity to provide

numerous opportunities for whole class, small group, and individual strategy instruction. Students have ample time to practice such strategies and often show improvement with reading comprehension activities.

Unfortunately, students at the middle and high school grade levels do not always receive the same intensive instruction. Students in the upper grades see multiple teachers over the course of the week and are often taught by a different teacher in each subject area (Wood, Woloshyn, & Willoughby, 1995). It is often assumed students have already mastered these self-monitoring strategies. In actuality, strategy instruction needs to be explicit, direct, and on-going. It is essential to teach and frequently review self-monitoring strategies to middle and high school students with learning disabilities. The gap between students with disabilities and their non-disabled peers widens as the students get older. Students may require prompting and support from staff to remain focused and engaged in reading activities. Research has repeatedly shown the benefits of on-going strategy instruction, specifically through setting a purpose for reading and using self-monitoring and questioning techniques throughout a reading passage. Students with learning disabilities can benefit from continued strategy instruction for reading comprehension.

Teaching specific self-monitoring strategies for struggling readers may assist in promoting independent reading skills. These skills can be transferred to other reading materials and activities such as in the content areas of science and social studies, and in real world text such as manuals or work related readings. The purpose of this study is to examine and expand current research on the effects of teaching self-monitoring strategies

for high school students with specific learning disabilities in order to improve comprehension within a variety of texts.

Research Problem

The questions to be answered in this study include:

1. What are the effects of using self-monitoring reading strategies with high school students with learning disabilities before, during, and after reading assignments on comprehension?
2. Will the effects of the use of self-monitoring strategies be maintained after teacher guided interventions are removed?

High school students who attend a special services school district in Gloucester County, New Jersey will be instructed in the use of self-monitoring reading strategies to improve comprehension. These students are all currently performing below grade level. The students range in ages from 17-19 years old and live in communities within South Jersey. It is hypothesized that students classified with specific learning disabilities will improve their comprehension of selected reading material through the use of self-monitoring strategies. It is further hypothesized that these students will continue to show growth in reading comprehension of a variety of texts after specific strategy instruction has been discontinued.

Key Terms

Meta-cognitive Strategies. Help students to regulate or monitor cognitive strategies, the notions of thinking about thinking, and are defined as, planned, intentional, goal directed, and future-oriented mental processing that can be used to accomplish cognitive tasks (Salataki & Akyel, 2002;Phakit, 2003).

Reading Comprehension. The construction of meaning of written or spoken communication through a reciprocal, holistic interchange of ideas between the interpreter and the message in a particular communicative text (Harris & Hodges, 1995, pg. 39)

Self-monitoring. Where readers learn how to be aware of their understanding of material (National Reading Panel)

Strategy Instruction. Explicit or formal instruction in the application of strategies to enhance comprehension (National Reading Panel)

Implications

Teachers must find ways to differentiate instruction while motivating students to become active participants in their own learning. Strategy instruction, specifically for self-monitoring can improve the comprehension of students with reading difficulties. There is a need to provide struggling readers with tools to utilize during independent reading times. Through direct instruction of reading strategies, students can begin to apply these strategies to other classes and move beyond the classroom into the workforce. Providing a skill set for high school students with learning disabilities is crucial to their success in the future. These individuals will be leaving high school and entering the work force or attending college. Struggling readers benefit from explicit, strategy instruction. Having these students think about what they are reading and monitoring throughout the reading process will improve comprehension in a variety of areas. Simple, quick strategies that can be easily taught can be transferred to content area texts, work related materials, and everyday text reading such as magazines or news reports. Teaching self-monitoring strategies during reading assignments can benefit poor readers in many facets.

Summary

Reading comprehension in the upper grades is vital. Poor reading comprehension can affect all subject areas. Comprehension can be improved through the self-monitoring techniques and strategy instruction. Many students with specific learning disabilities have difficulty reading on their own. They are unable to utilize silent reading time in an efficient manner. Teaching students to monitor their own understanding is a key factor in improved comprehension.

My hypothesis is that a group of high school students with specific learning disabilities will improve their ability to self-monitor while they read and ultimately increase comprehension of appropriate selected reading materials. The goal is to provide enough instruction and support that such self-monitoring reading strategies will continue to be utilized by older struggling readers both in and out of the classroom setting.

Chapter 2

Review of Literature

The ability to read comes from a series of skills that are taught and further developed over time. According to the National Reading Panel (2000), reading can be divided into five distinct areas: phonemic awareness, phonics, fluency, vocabulary, and comprehension.

For most students, this process begins at a very early age. Children begin to recognize letters and sounds often before they ever enter a school setting. These early phases of reading can be identified as phonemic awareness and phonics. During this time, individuals start making connections between letter and sound correspondences, as well as groups of letters and the sounds they make.

As phonemic awareness and phonics instruction progress, students begin to build their reading fluency. The National Reading Panel defines fluency as the ability to read text with accuracy, appropriate rate, and good expression (NICHD, 2000). Fluency is an integral part of early reading instruction. Students frequently practice and are assessed on their reading fluency. Many strategies are utilized to improve reading fluency such as repeated readings, the use of flash cards to memorize words, and benchmark assessments to monitor the correct words read per minute. Vocabulary instruction can be taught in conjunction with fluency. Explicit vocabulary instruction can be conducted in isolation or embedded into other reading lessons.

Phonemic awareness, phonics instruction, fluency, and vocabulary are essential components of reading instruction. In the elementary grades, a great deal of time is spent fine tuning these skills. As the curriculum increases in difficulty in both language arts

classes as well as content areas, it becomes evident how important the final component of reading instruction is to the success of the students. Although word decoding and fluency are major components of reading, reading comprehension is the element that is most tightly linked to the academic and professional success of students with learning disabilities (Baumert et al., 2001). Reading comprehension is a combination of knowledge- and text- oriented constructions. In other words, it is the result of a systematic reading process that integrates basic as well as higher-order reading skills (Kintsch, 1998).

Reading Comprehension

In order for readers to be successful, it is imperative they understand what they are reading. Constructing meaning from text is the foundation for progressing academically and moving beyond the classroom. Reading comprehension is the construction of meaning of written or spoken communication through a reciprocal, holistic interchange of ideas between the interpreter and the message in a particular communicative text (Harris & Hodges, 1995, pg. 39).

Good readers implore a variety of strategies which facilitate understanding of new material. These students activate prior knowledge and use their schema for topics to make connections to current texts. The more prior knowledge and experience readers have with a particular topic, the easier it is for them to make connections between what they are learning and what they know (Anderson, 2004; Anderson & Pearson, 1984). Good readers frequently monitor their understanding and read different types of materials such as narrative, informational, and expository texts. These students are able to select appropriate reading pieces based on their comprehension of the works. Good readers are

engaged in the process of reading. They make adjustments when necessary, ask questions to further facilitate understanding, and summarize passages as they read (Goldman & Rakestraw, 2000).

Reading Comprehension and Students with Learning Disabilities

Unfortunately, poor readers, many of whom have been identified with learning disabilities, struggle a great deal with comprehension. Students with learning disabilities are recognized as inefficient readers with limitations in meta-cognitive skills, including difficulties in recognizing and adapting to comprehension breakdowns (e.g., Gersten, Fuchs, Williams, & Baker, 2001). Students with learning disabilities often fail to use reading strategies to improve comprehension or are unsure when to use previously taught strategies. These students have deficits in implementing and monitoring effective learning strategies spontaneously (Bostas & Padeliadu, 2003). Improving reading comprehension in students with learning disabilities is necessary at any grade level. Frequent instruction, practice, and review of specific strategies promote and encourage readers to become critical thinkers and construct meaning from text. Effective reading requires the use of strategies that are explicitly taught (Souvignier & Antoniou, 2007). Teaching skills which promote comprehension are essential for struggling readers at any age or grade level.

Reading Comprehension Strategies

The utilization of comprehension strategies within a reading program is necessary to accomplish the ultimate goal in reading which is constructing meaning from text. Good readers use many strategies before, during, and after reading to make connections and understand what has been read. Comprehension strategies help children build

content area knowledge. Children are more likely to retain and reapply what they learn when they use meta-cognitive strategies (Keene & Zimmerman, 2013).

As the shift and trends in curriculum have changed to focus largely on text-based instruction as opposed to a more holistic, self-discovery approach, the need to provide practical strategies for struggling readers has increased. State standards and assessments reflect the text-based approach to questioning and monitoring student understanding. A multitude of strategies used in conjunction with one another have produced positive results in students with learning disabilities. Explicit instruction in comprehension strategies should begin in the primary grades (Hilden & Pressley, 2002; McLaughlin, 2003) and continue throughout the middle and upper grades. As students become more familiar with strategies through explicit instruction, teachers can begin to decrease their role in the instruction and allow students to implement the strategies independently and across content areas.

Swanson and DeLaPaz (1998) reviewed and summarized meta-cognitive strategies for the improvement of reading comprehension and offered suggestions on how to teach specific strategy instruction, which can often be a daunting task for many educators. Regardless of the strategy, it was suggested teachers should select material that is at a lower reading level than what the students are currently working on. This allows mastery of the strategy that can eventually be applied to more challenging texts. Students need explicit instruction when acquiring new strategies and therefore the teacher should clearly describe what the strategy is and how it will be used. The next steps in teaching reading comprehension strategies suggested was to activate prior knowledge and review current student performance levels. It was recommended modeling the strategy

multiple times for the students. The students then engage in collaborative practice of the given strategy. As the strategy becomes more familiar, students work independently to utilize the given strategy. Finally, the goal with reading comprehension strategies should be to have the students make generalizations and apply what has been learned to other reading passages or within other classes.

According to a meta-analysis conducted by Souvignier and Antoniou (2007), several themes emerged as good practices for building comprehension in students with learning disabilities. Their review found the use of summarization, main idea strategies, self-monitoring, and explicit instruction improved comprehension. McLaughlin & Allen (2007) further reported that within these general comprehension topics comprehension instruction should be used before, during, and after reading activities.

In a study conducted by Eilers and Pinkley (2006), students who were given explicit instruction in meta-cognitive strategies to use before, during, and after reading a text showed significant growth in reading comprehension from pre-tests to post tests. The study examined the effectiveness of explicit instruction in using prior knowledge, predicting, and sequencing to improve comprehension of 24 first grade students. Before students read, they were taught to activate prior knowledge by making connections based on text to self, text to text, and text to world. Students made predictions while they read using context clues from the passages. After reading, the students completed sequencing activities to further enhance understanding of the material which had been read.

Students were given a *Developmental Reading Assessment* prior to the explicit strategy instruction in order to develop baseline levels of comprehension for each student. This assessment was also administered as a post test to compare information after the

intervention had been implemented. Additionally, the *Index of Reading Awareness* was given before and after interventions to measure cognitive awareness of the students during the reading assignment. A Comprehension Strategy Checklist was created to measure reading comprehension and the use of strategies. The students were given graphic organizers to record their connections to the text.

The students were provided with explicit strategy instruction in both whole class and small group settings. During daily whole group instruction, the teacher modeled specific strategies such as making predictions about the story or making connections to the text. Instruction was provided on how to sequence stories and how to use graphic organizers to facilitate understanding. Three small groups were formed based on the previously administered anecdotal records which provided relative reading levels of the students. The groups were divided into students who scored above grade level on two or more of the assessments, students who scored below grade level on two or more of the assessments, and the remaining students were placed into the final group. The small groups each met with the instructor for 30 minutes one time a week. The sessions spanned nine weeks. During these small group instructional periods, students read preselected trade books. The instructor reinforced the use of using prior knowledge to make connections, making predictions as they read, and how to sequence important events within the story. Eilers and Pinkley (2006) found a significant difference between the pre- and post-test assessments of the *Developmental Reading Assessment* and the *Index of Reading Awareness*. The Comprehension Strategy Checklist and the graphic organizers were analyzed for patterns between the students. Two themes emerged when looking at each of the students and their use of strategies. It was determined the use of

prior knowledge to make connections to the text enhanced comprehension of the material. Furthermore, students were observed using the strategies which were taught within the small groups and whole class during independent reading activities separate from the designated times.

Another strategy which combines previously validated strategies in reading comprehension is referred to as the TWA method, or Think Before Reading, Think While Reading, and Think After Reading. TWA is segmented into nine steps (Baker, Gertsen, & Scanlon,2002) which focuses on reading comprehension before, during, and after reading. Strategy instruction is presented at each stage of reading to further enhance comprehension (Mason, Meadan, Hedin, & Corso, 2006).

Before Reading

Before students begin a reading assignment, it is critical to preview the text and attempt to make connections by relating the text to themselves, others, or previous experiences. Previewing the text allows the readers to set a purpose for their reading. It helps to activate prior knowledge and make predictions about the text. We cannot assume readers, especially struggling readers, have the skill set to preview, make predictions and connections to the text. This is where explicit instruction is warranted. According to Bos & Vaughn (1994), although poor readers may be able to decode words, they do not monitor their own comprehension and therefore require explicit instruction.

As previously mentioned, the TWA strategy encourages students to begin to think about the text before they read the material. Students make predictions and connections to the text. Before the students read, the goal is to identify the author's purpose, have the students identify what they know, and decide what they want to learn

from the text. In a study using the TWA method, Mason, Meadan, Hedin, & Corso (2006) found struggling students benefitted from setting a purpose for their reading. This study monitored the success of one struggling student within the regular education classroom. However, it was suggested all students within the class could quickly be taught the strategies of thinking about what they already know and what they would like to learn after reading the text. The authors discussed how before reading activities can be taught in small groups or with the whole class. Frequent practice and review of the strategies yielded the best results for improved comprehension.

Before reading a text, whether it is narrative, expository, or informational, students need to set a purpose for reading. Initially, teachers can demonstrate how to preview the title, look at pictures, read captions, and participate in discussions regarding the text. As students begin to demonstrate competency in this strategy, teachers can foster more independent practice using these methods, especially at the upper grades where the responsibility of text comprehension falls largely on the students. Making connections to the text before reading builds motivation.

During Reading

The ability to understand or comprehend what one has read is the ultimate goal for instruction in all content areas. Reading comprehension is a lifelong skill. Therefore, after setting a purpose for reading through preview and predictions, the students begin to read. This may be done in a variety of formats such as whole class instruction, small groups, or reading independently. Monitoring what is being read or answering the question, "Does this make sense?" is key to students becoming effective readers.

Stronger readers are able to identify new words, read a variety of text, and monitor their understanding throughout the reading (Goldman & Rakestraw, 2000). Students with learning disabilities require explicit strategy instruction to assist with enhancing meaning in text. Teachers have the responsibility to teach a variety of effective strategies to struggling readers, as well as help these students to identify which strategy to use for different types of texts. Self-monitoring one's own understanding and making adjustments to the approach to reading a new text is crucial for students. Summarizing what has been read throughout the reading assignment is another way good readers establish meaning. This process can also be directly taught by the teachers. Summarizing and synthesizing can be demonstrated via think alouds to display to the students how the teacher is thinking about her own reading (Davey, 1983). Self-monitoring of comprehension of a reading piece can be accomplished through note taking while reading, stopping to think what has been read, highlighting important information within the text, breaking the reading material into smaller, more manageable sections, or a combination of each of these methods. The focus of strategies during reading is ultimately to develop and enhance the reader's ability to independently read and comprehend a variety of text presented to them.

In a study of 73 students from fifth to eighth grade with learning disabilities conducted by Antoniou & Souvignier (2007), the effects of strategy instruction on the improvement of reading comprehension was examined. Students began by looking at the headlines and activating prior knowledge. During reading, the students were taught the meta-cognitive strategy of Clarification of Text Difficulties. Students were instructed to pause when they came to unknown words in the passage. Students would mark the word

and attempt to figure out the meaning independently or ask for assistance from the teacher. Once the meaning was identified, the students continued reading. Next, the students were encouraged to use the strategy of Summarization. Students were looking to identify the most relevant and important information in the text. The genre of the text was identified during this process. Teachers demonstrated these steps repeatedly in order for the students to have an understanding of the strategies. Students checked their summarizations and reviewed to ensure all key facts were included in the summarizations. Students were provided with a checklist to monitor the use of strategies during the text reading. Teachers were provided with handbooks which contained specific examples on how to incorporate these strategies into daily lesson plans. Four cards were given to the students to serve as reminders to use the strategies during reading activities. The study was conducted over one school year. Two groups were formed; a control group which received traditional reading instruction and the intervention group which was taught the specific comprehension strategies. Based on the results of the study, the intervention group tended to demonstrate greater gains in reading comprehension than that of the control group. The intervention group also utilized the comprehension strategies taught after the intervention was finished. It was found students who participated in the study and were identified as having a learning disability benefitted from specific strategy instruction during reading activities. These findings replicate previous outcomes from meta-analysis studies on the ability of students with learning disabilities to use meta-cognitive strategies to improve reading comprehension (Gersten et al., 2001; Souvignier & Antoniou, 2007; Swanson, 1999b). The use of meta-cognitive strategies during reading can benefit students with different abilities. Utilizing

strategies during reading activities can help to improve comprehension. The goal of reading any material should be to understand the text.

After Reading

For poor readers, a reading assignment ends as soon as the last word has been read. These students often rush through assignments, simply decoding words and not monitoring their own understanding. Good readers however, evaluate what they read. These students make judgments about the material read. They revisit their predictions and formulate opinions regarding what has been read. (McLaughlin, 2012).

Once again, teachers have the ability to provide direct instruction after reading a passage. Think alouds can be incorporated into this aspect of the reading process as it was during the reading activities. Teachers can question students to check for understanding and engage in discussions regarding different aspects of the text. Teachers can further enhance understanding by reviewing predictions and notes that were completed during the reading task. Eventually, this high level of support can be faded, just as it fades for before and during reading activities.

In a study conducted by Rogevich & Perin (2008), students identified as having behavioral disorders only and students identified as having behavioral disorders and ADHD were taught the TWA strategy, or Think Before reading, Think While Reading, and Think After Reading, with an added component of With Written Summarization. This added element to the previously researched strategy provided further opportunities for students to analyze what they have read after completing the assignment. Five activities were completed with the students to monitor the use of reading strategies. Students were given pre- and post tests before and after each passage. They were also

given near transfer assessments where the students read similar passages to the level of the ones used during the intervention. Far transfer assessments looked at the students' abilities to read longer, more challenging passages and incorporate the summarization strategies into the harder passages. Finally, students were assessed on their abilities to maintain previously taught summarization strategies after the intervention was complete. Teachers instructed students on how to find relevant information from the text and how to record their summaries. Students were taught the summarization strategy and gradually began to use it independently and the role of the teacher became more supportive as opposed to in the beginning directly modeling the strategy. Both groups showed gains in their ability to comprehend informational text; however the group of students identified as only having a behavioral disorder demonstrated the ability to transfer and maintain the summarization strategy more than the students that were also identified as having ADHD. Teaching students to examine what their understanding is of a text after they have read continues to enhance comprehension. Explicit instruction in summarization is still required for most students as the reading is complete. Just like before and during reading activities, teachers can gradually fade instruction and prompts and allow students to use the after reading strategies on their own.

Comprehension Strategies for High School Students

Many high school students are currently reading below grade according the 2005 National Assessment of Educational Progress given bi-annually to a large sample population of the United States. Unfortunately students with learning disabilities struggle more than their typical peers. Older struggling readers tend to have gaps in their reading abilities. According to Torgesen (2005), older students with reading difficulties can

present instructional challenges; however they can show improvement with sustained, focused instruction. Using evidenced-based strategies for older students with learning disabilities is a key to improved comprehension and transfer of skills from one subject area to another.

Reciprocal teaching is one method that has been successful in supporting middle and high school students with learning disabilities during the reading process (Palincsar & Brown, 1984) and (Fillenworth, 1995). Reciprocal teaching is divided into four distinct strategies to aide in comprehension before, during and after reading new text. The four strategies include predicting, questioning, clarifying issues, and summarizing. In a study conducted by Weedman & Weedman (2001), a school-wide high school reciprocal teaching plan was implemented over a five year period. Teachers were trained over the summer, and during the first years, implementation took place over the first twenty two days of school. Two days of pre- and post-tests were allotted as well. The first year of the administration of this program yielded limited success; however after adjustments to the timing and implementation of the program, the next four years of implementation showed students making significant improvements in the ability to answer factual questions, making inferences, and using prior knowledge. The high school also reported an increase in standardized test scores for students who participated in the intervention as compared to the control group who's test scores remained constant over the years of the project. Reciprocal teaching appeared to benefit struggling students in high school with their reading comprehension.

Predicting sets a purpose for reading. It aids in their motivation to complete the given reading task. Predicting is ongoing before and during reading. It helps the students

prepare for the next section of the text (Slater & Hortman, 2002). Questioning begins before the student reads and carries over into the text while reading. This strategy helps the students to focus on the main ideas of the text. When students incorporate the next strategy, clarifying, they are focusing of finding meaning of unknown words by making connections to other parts of the text and using context clues to gain meaning. The use of summarizing enables students to determine the most important information in the reading passage. It allows them to find the main idea and supporting details (Striklin, 2011).

According to a study conducted by Sporer & Brunstein (2009), based upon the works of Fuchs & Fuchs (Fuchs, D. & Fuchs, L. S., 2001), the use of Peer Assisted Learning Strategies with struggling secondary students yielded favorable results. Teacher instruction from four different classrooms was provided two times a week for nine weeks. Teachers received extensive training before implementing the intervention as well as support during the intervention. During these 35 minute instructional blocks, lower achieving students were paired with students working on or above grade level. The Peer Assisted Learning Strategies (PALS) activity was divided into three sub-sections. During the first section, entitled Partner Reading with Retell, the on-grade level student read aloud for five minutes while the struggling reader listened. The struggling student than had two minutes to recall the information from the text. After the time limits, the students switched roles and completed the same task. The second activity in the PALS process was Paragraph Shrinking, which consisted of the students reading the passage orally and stopping at the end of each paragraph to identify the main idea, discussing who and what were involved in the story, then had to summarize what was read to the other student in ten or fewer words. The final activity was Prediction Relay. The student with

reading difficulties made predictions for the upcoming paragraphs. The on-grade level student or tutor helped to focus predictions and offer other predictions that may have helped further enhance comprehension.

Pre- and post-tests were administered to all students. Students participating in the intervention had higher post-test scores in reading comprehension than the students that received their traditional instruction with no added interventions. There were no significant differences in the predicting abilities of students who participated in the PALS activity and those that did not. However students who were trained in Peer Assisted Learning Strategies showed significant improvements in their ability to summarize text and recognize main ideas. This ability to accurately summarize text was transferred to new reading lessons. Students were able to summarize and identify important information from a given text.

In a study completed by Alfassi (2004), underachieving high school students were instructed in the Reciprocal Teaching Strategy to improve reading comprehension. Teachers participated in a six hour workshop on Reciprocal Teaching. Two groups were created with students of similar reading levels. The control group continued with the standard high school English language arts curriculum. The intervention group was taught the Reciprocal Teaching Strategy. Both groups received pretests and posttests. The intervention group was given direct instruction on how to make predictions, question while reading, clarify any unclear information, and summarize what has been read. Results yielded significant improvement in comprehension of the intervention group compared to the controlled group. Based on the results, Alfassi recommended the use of combined strategy instruction for older struggling readers.

Another strategy for enhancing comprehension for older students with learning disabilities is the use of graphic organizers while reading. Graphic organizers provide visual representations for readers as they move through the text. Graphic organizers can be used at any stage of the reading process. Before reading, graphic organizers can used to set a purpose for reading and make predictions (Bos & Anders, 1990; Dicecco & Gleason, 2002). Basic organizers such as K-W-L charts or story webs can be used as a way to check understanding. During reading, graphic organizers can be used for character development, organization of informational text, making connections, and to check predictions. After reading, graphic organizers can be used to summarize information, again check predictions, compare and contrast information presented in the text, formulate an opinion about the piece, or organize newly learned information.

Mastropieri, Abdulrahman, & Gardizi (2002) examined the use of graphic or spatial organizers to enhance understanding for struggling high school students in science and social studies classes. The intervention group was taught how to use the computer based program *Inspiration* which allows students to create graphic organizers. Students and teachers were trained in the computer lab and were given ample practice time before using the organizers in class. Post tests revealed a 32% increase in comprehension when the intervention group used self-created graphic organizers during note taking of content are material as compared to the controlled group that did not incorporate graphic organizers into the daily procedures. Teachers can introduce a variety of graphic organizers and teach students to select ones that appropriately fit the reading assignment. After instruction has been provided on graphic organizers, students can create their own graphic organizers to assist with constructing meaning from the written text.

The inference strategy is a strategy specifically designed to improve comprehension at the inferential level. The skill instruction focuses on four levels of understanding within the text: purpose questions, main idea/summarizing questions, predicting questions, and clarifying questions. During step one, the students preview the text and make predictions. After the previewing, students group the questions at the end of the text. Next the students look for clues within the passage to help answer the questions. The fourth step has the students look back in the passage for more clues or details. Finally the students return to the questions and attempt to answer using the information garnered from the strategies (Fritschmann, Deshler, & Schumaker, 2007). This strategy is used for preparing students for standardized tests where higher level, inferential questions are a major component. Fritschmann, Deschler, Schumaker (2007) conducted a study observing the effectiveness of instruction in the Inference Strategy on reading comprehension skills of adolescents with disabilities. Eight 9th grade students, all identified as having a learning disability, participated in the study. Four students were taught the Inference Strategy and four continued with their regular instruction. All students were initially administered the Group Reading Assessment and Diagnostic and Evaluation assessment (GRADE). Assessment results revealed all participants were at least four grade levels below in their reading skills. Teachers were provided with a fidelity checklist to ensure all steps in the strategy were being followed. 30 ninth grade passages were administered between the baseline period, instructional time, and maintenance period. Results for the four students who participated in the study all yielded significant improvements in reading comprehension. Students were able to generalize the Inference Strategy to other assignments and subject areas.

The use of self-monitoring response sheets is way of expanding reciprocal teaching, graphic organizers, and inference strategy instruction. The self-monitoring response sheets use questioning techniques and designated stop points to have students check for understanding while they read. After the reading, the self-monitoring sheets are discussed and students are given a comprehension quiz based on the information read. According to a study conducted by Crabtree, Alber-Morgan, & Konrad (2010), high school students showed an increase in reading comprehension through the use of self-monitoring sheets. Students were given short fiction stories from the *Globe Anthology Series.* The stories were reprinted on a new paper separate from the book. As the students were being trained in using the Self-Monitoring Response Sheets, the passages were shorter in length than during the independent practice of the strategy. The Self-Monitoring Response Sheet contained the following questions: Who are the main characters? What is the setting of the story? What is the story about? What are the problems or conflicts? and How does the story end? Next to the questions are stop boxes. Students are directed to complete the boxes as they read the passage. A second Self-Monitoring Response Sheet was developed for students to use during the maintenance phase. This sheet simply stated the questions, and had columns for the stop points. This was a way for the instructors to gradually remove instruction and support and have the students take responsibility for their own understanding. All students performed at or above the intervention levels during the maintenance levels. Students were also given a questionnaire regarding the use of the Inference Strategy. Each student reported the strategy was easy to implement and felt they would continue using this strategy on future assignments.

Summary

Through early reading instruction, the hope is students will become independent readers who can comprehend a variety of text. Unfortunately, many older students continue to read below grade level. It is estimated that as many as 90% of students classified with learning disabilities struggle with reading skills (Vaughn, Levy, Coleman, & Bos, 2002). As the demands increase for greater proficiency in reading, especially with informational text, the gap for struggling readers in middle and high schools widens (Deschler, Ellis, Lenz, 1996).

For some, poor reading instruction can be blamed for their current difficulties. However, for many struggling readers in the upper grades, specific strategy instruction has not continued. Students at the upper end of formal education see numerous teachers over the course of the day. There is often an assumption that students should have mastered the basics skills of reading and can now work independently to derive meaning from text. Poor readers have difficulty comprehending what they have read. They frequently do not read for meaning or synthesize what they have read.

Strategy instruction is necessary at all levels of reading instruction for students with learning disabilities. Ongoing strategy instruction for the improvement of reading comprehension is essential for students with learning disabilities. Providing explicit instruction for before, during, and after reading lessons is essential. Activating prior knowledge helps students set a purpose for reading and fosters a connection between the reader and text. During reading, it is important to have students frequently monitor their understanding. This can be done through note taking, self-questioning, completing graphic organizers, or participating in class discussions. As the students finish reading a

passage, continued review and summarization of the text helps to further build meaning. Many specific strategy instruction methods have been studied to improve comprehension. Strategy instruction can differ depending on the type of text to be read. Older students with reading difficulties have shown significant improvement s when strategies have been explicitly taught and reinforced. The goal of instructing older students is to foster a level of independence when reading. Teaching students to think about their own understanding of text before, during, and after reading assignments is a valuable skill that can be transferred to content area classes, as well as post-high school reading materials. The purpose of this study is to build on previous research which supports the use of self-monitoring strategy instruction to improve reading comprehension of older high school students with learning disabilities.

Chapter 3

Methodology

Setting and Participants

This study took place in a public, separate special services school located in Gloucester County, New Jersey. Students are provided instruction according to the New Jersey Common Core Standards as well as a daily vocational and life skills component. The district also provides related services to students attending their home districts but require more than the local school district can facilitate independently. Due to the diverse dynamics of the different sending districts from all over South Jersey, students attending the special services district come from a variety of socio-economic backgrounds. The students in this study attend the high school facility for individuals with multiple disabilities. The New Jersey Administrative Code defines multiple disabilities as the presence of two or more disabling conditions, the combination of which causes such severe educational needs that they cannot be accommodated in a program designed solely to address one of the impairments. The existence of two disabling conditions alone shall not serve as a basis for a classification of multiply disabled. Eligibility for speech-language services as defined in this section shall not be one of the disabling conditions for classification based on the definition of "multiply disabled." Multiply disabled does not include deaf-blindness (New Jersey Administrative Code.6A:14-3).

Subjects

Two groups of students were formed to participate in the study; the intervention group and the control group. The Group Reading Assessment and Diagnostic and

Evaluation Assessment (GRADE) scores were compared, as well as daily academic performance between all of the students to determine two groups with similar leveled students. Reading levels of both groups ranged from 4.0-6.5, and ages ranged from 17.4 – 19.1 years old. The control group consisted of four males and one female. The intervention group consisted of three males and two females.

Table 1

Demographics of Intervention Group

Subject	Sex	Age	Classification	Reading Level
1	Male	17 yrs., 4 months	Multiply Disabled	4.5
2	Female	18 yrs., 2 months	Other Health Impaired	5.0
3	Male	18 yrs., 2 months	Multiply Disabled	4.0
4	Female	18 yrs., 8 months	Multiply Disabled	6.0
5	Male	18 yrs., 2 months	Multiply Disabled	5.0

Table 2

Demographics of Control Group

Subject	Sex	Age	Classification	Reading Level
6	Male	18 yrs., 5 months	Multiply Disabled	4.5
7	Male	18 yrs., 9 months	Specific Learning Disabled	4.0
8	Male	19 yrs., 1 month	Multiply Disabled	6.5
9	Female	18 yrs., 10 months	Other Health Impaired	5.5
10	Male	17 yrs., 11 months	Multiply Disabled	4.5

Method

All middle and high school students in the special services district are given the Group Reading Assessment and Diagnostic Evaluation Assessment (GRADE) in October and March of each school year. Results have traditionally been used to group students and to report on progress at annual review meetings. For this study, fall 2013 GRADE scores were examined for students participating in the senior transition team. Two groups of students with similar reading levels, as determined from the GRADE assessment, ranging from 4.0-6.5 were formed.

The intervention took place within the senior level English Language Arts class, three days a week from 9:00 AM – 9:45 AM. The class consisted of 10 total students. Five students were part of the control group and five students were part of the intervention group. The intervention group sat in a separate section of the classroom. The teacher led this group and the instructional aide led the control group. The small group instruction was a familiar format for both groups.

The self-monitoring intervention was taught to the intervention group and practiced over a period of 6 sessions. The teacher modeled before, during, and after reading strategies to the students. Before students read a text, they were instructed to preview the title, captions, bold words, and pictures. From this preview, students were encouraged to make predictions and formulate connections to the text. While the students read, they were given three stop points. The teacher modeled this step through the use of "Think Alouds." This method has the instructor talking through a reading selection. She orally reads a section and discusses what she should do next. At the given stop points, the teacher demonstrated how to briefly take notes on what was read and

generate a new prediction for the upcoming text. After the students read, they practiced summarizing the main points in chronological order. Finally, the students were once again encouraged to make connections to the reading passage. The teacher demonstrated the before, during, and after reading strategies through one text, while the students followed along with the Self-Monitoring Checklist 1. Over the course of two weeks, the students independently read five more stories and completed the Self-Monitoring Checklist 1 as they read. The teacher facilitated the activities, providing prompts and reminders to utilize the strategies. The group discussed what they wrote on each section of the Self-Monitoring Checklist 1. After the completion of the worksheets, the students independently answered 10 comprehension questions based on the text.

During the third week of the intervention, greater student independence of work completion was encouraged. The Self-Monitoring Checklist 2 was given to the students. This worksheet provided a review of the strategies with boxes to check after completing the before, during, and after reading strategies. The teacher reviewed procedures for reading the text; however provided less prompting and directions. The students completed the steps independently and a whole group review took place at the end of the activity. Students completed 10 comprehension questions based on the given passage.

The control group worked exclusively with the classroom aid during these sessions. No interventions were introduced. The students were given a reading passage, instructed to read the text independently, and answer 10 comprehension questions when they were finished reading.

Variables that may have affected student progress and outcomes were unpredicted schedule changes. Every attempt was made to keep the intervention

schedule consistent; however unforeseen illnesses or school wide functions did interfere from time to time.

The dependent variable for this study was immediate recall of comprehension questions from a given passage. Students were given fictional, informational, and everyday text to read from the Reading Comprehension Workshop series, (Globe Fearon, 1995) than were asked to complete 10 comprehension questions based on the reading. Questions were scored as either correct or incorrect based on the information from the text. The independent variables were before, during, and after reading strategies, self-monitoring worksheets, and reading material.

Materials and Instruments

The Group Reading Assessment and Diagnostic Evaluation (GRADE) is a norm-reference diagnostic reading test to help determine reading strengths and weaknesses in students from grade K-12. Scores are reported on grade-based norms in the form of standard scores, percentile ranks, grade and age equivalents, normal curve equivalents, and growth scale values. This assessment is administered by grade levels and can be conducted with a whole class, small group, or on an individual basis. The assessment contains for subtests: Vocabulary, Sentence Comprehension, Passage Comprehension, and Reading Fluency. Listening comprehension is measured throughout the subtests. The GRADE was administered to students in October to determine reading levels and skills, and again in March to compare scores after the intervention had been implemented.

The Reading Comprehension Workshop series (Globe Fearon,1995), containing the books *Crossroads, Insights, and Reflections,* (Figure 1) offers 1-2 page reading passages which are written at higher interest, lower readability levels, and provide an

array of fiction and nonfiction pieces. Fifteen passages were selected and used for baseline assessments, during the intervention period, and post-assessments to analyze if the students continued to use the previously taught and practiced strategies. Ten questions were presented at the end of each passage to assess comprehension.

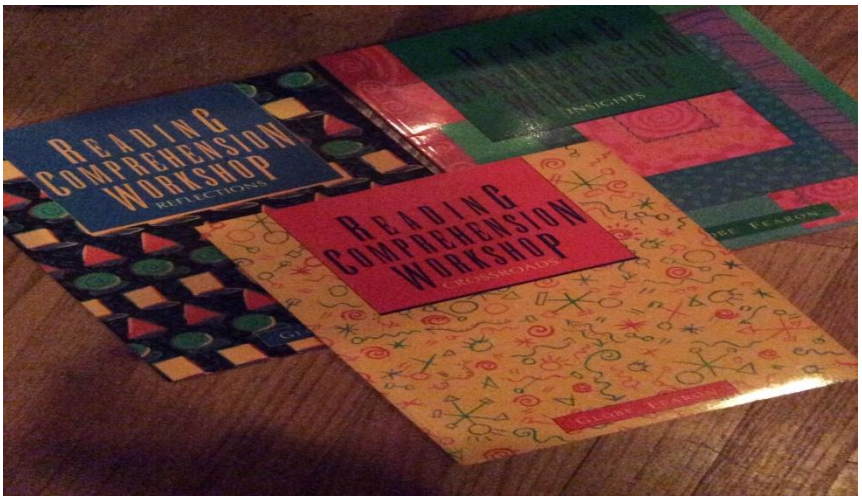

Figure 1. Reading Comprehension Workshop series (Globe Fearon,1995)

Two Self-Monitoring Checklists were developed for student use. Initially, students were given the Self-Monitoring Checklist 1(Figure 2). This document provided before, during, and after reading boxes with areas for students to make predictions, take notes, make connections to the text, and summarize what was read. It was used while the teacher provided direct strategy instruction during the intervention phase. The Self-Monitoring Checklist 2 (Figure 3) contained less prompts, and served as a visual reminder for students to utilize the strategies taught for comprehension.

Before I Read

1. Preview Title, Captions, Bold Words, & Pictures
2. What is the Author's Purpose?_____
3. Make Connections to Text _____
4. Make Predictions _____

When I am Reading

Stop Point 1:
Notes: _____

New Predictions: _____

Stop Point 2:
Notes: _____

New Predictions: _____

Stop Point 3:
Notes: _____

New Predictions: _____

After I Read

Summarize the Main Points in Order:

1. _____
2. _____
3. _____
4. _____
5. _____

My Connections to the Text:

_____

_____

_____

_____

_____

Figure 2. Self-Monitoring Checklist 1

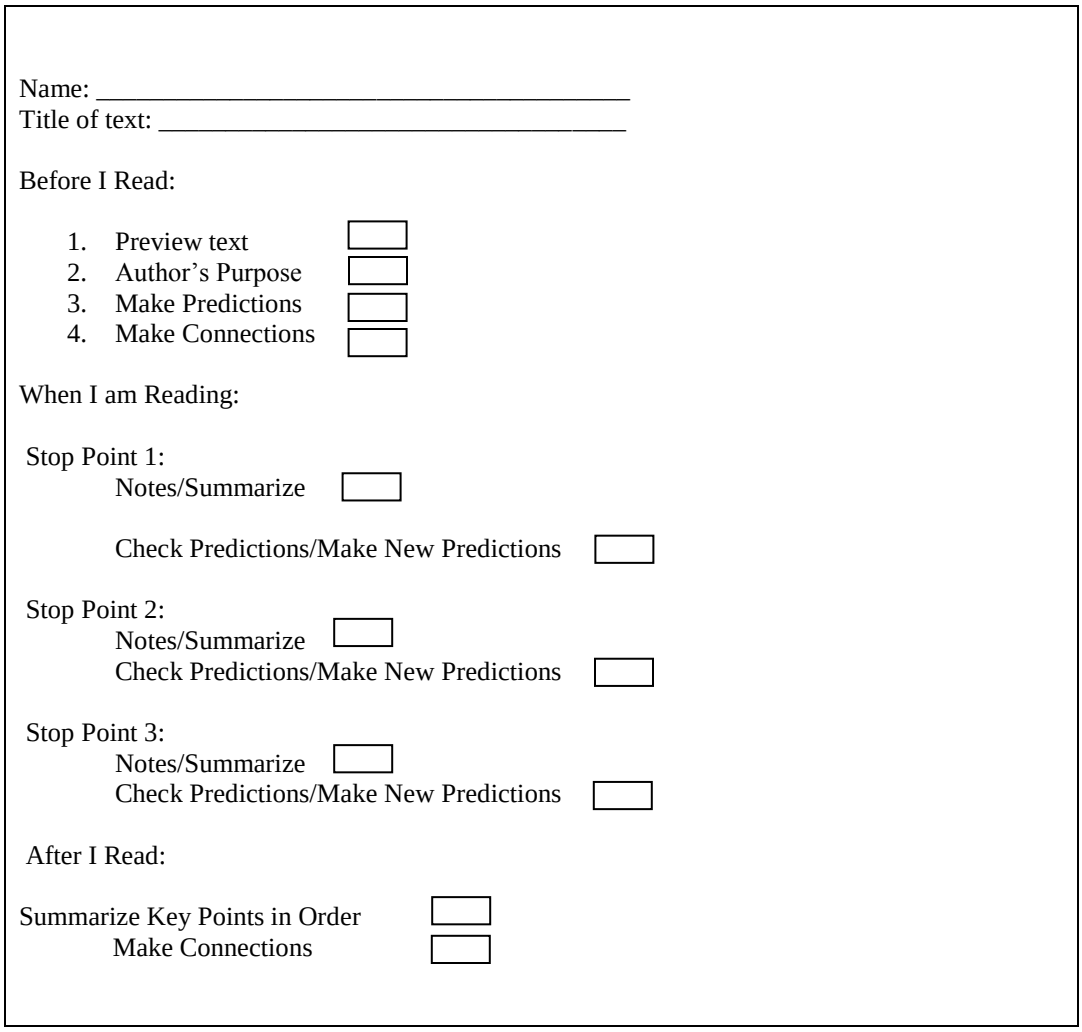

Figure 3. Self-Monitoring Checklist 2

Data Collection/Procedures

Initial data collection began in October when students in both the control and intervention groups were administered the Group Reading Assessment and Diagnostic Evaluation Assessment (GRADE), to determine reading levels. This assessment consisted of multiple choice questions which addressed vocabulary, sentence comprehension, passage comprehension, and reading fluency. Assessments were electronically scored and students were given a grade-based reading level. Review of the assessment scores

was completed to form two groups, the intervention and the control group. Students with similar reading levels were placed into the groups.

In late January, the control group and intervention group were given three reading passages on three separate days. Students from both groups were instructed to independently read the short stories and answer 10 comprehension questions based on the text. Questions from each passage were scored as either correct or incorrect. These scores were used to determine baseline reading comprehension levels for both groups.

The next collection period was conducted over three weeks. During three class periods per week from 9:00 AM – 9:45 AM, the control group and intervention group worked separately. Both groups received the reading passages and questions from the Reading Comprehension Workshop series (Fearon, 1995). On each of the nine classes, the control group was given a reading passage. They were instructed to silently read the passages and answer the 10 comprehension questions that followed. The classroom instructional assistant provided supervision and limited assistance as needed. The nine sets of questions were scored as either correct or incorrect. During these same nine sessions, the intervention group was introduced to the before, during, and after reading strategies. For the first six lessons, the teacher modeled each strategy and the students were given the Self-Monitoring Checklist 1 to complete while reading. The strategies were reviewed during each intervention time. Before reading, the students worked closely with the teacher to make predictions, set a purpose for reading, preview the material, and make connections to the text. During reading, the teacher modeled, than the students read the given text and recorded notes at the three stop points. After reading, the students recorded a brief summary of the reading passage and made final connections to

the text. The intervention students than completed the 10 comprehension questions based on the passages. Days 10, 11, and 12 of the intervention consisted of the intervention group utilizing the Self-Monitoring Checklist 2, while reading the given passage. The teacher provided less prompting during these three passages. The students continued to make predictions, set a purpose, make connections to the text, stop while reading to check for understanding, and summarize the text when finished reading. The students independently completed the 10 comprehension questions at the end of the passages. The questions for the nine passages were scored as either correct or incorrect.

On the final two weeks of the study, both groups were given the same three reading passages. The students were instructed to read the stories and independently complete the 10 comprehension questions. Students were reminded to use any strategies they learned in order to best understand the text and correctly complete the questions. The intervention group did not receive either Self-Monitoring Checklist or prompting from the teacher. Both groups were scored either correct or incorrect for the comprehension questions that followed the reading passages. The final three passages served as a post-assessment of the intervention. After all 15 reading passages and questions had been completed, the students were administered the norm-referenced Group Reading Assessment and Diagnostic Evaluation Assessment (GRADE). Reading levels from the fall to the spring were compared.

Chapter 4

Results

Summary

In this study, two groups of students, with five students in each group, were examined. Each student was participating in a multiply disabled program at a special services school district in Southern New Jersey. The students ranged in ages from 17 years 4 months to 19 years 1 month. All students were reading significantly below grade level, with the reading levels ranging between grades 4.0-6.5 for the students.

The Intervention Group consisted of 5 students. Subject 1 was a 17 year, 4 month old male student classified as multiply disabled and reading at a 4.5 grade level. Subject 2 was an 18 year, 2 month old female classified as Other Health Impaired and reading at a 5.0 grade level. Subject 3 was an 18 year, 6 month old male student classified as multiply disabled and reading at a 4.0 grade level. Subject 4 was an 18 year, 8 month old female student classified as multiply disabled and reading at 6.0 grade level. Subject 5 of the Intervention Group was an 18 year, 2 month old male student classified as multiply disabled and reading at a 5.0 grade level.

The Control Group also consisted of 5 students. Subject 6 was an 18 year, 5 month old male student classified as multiply disabled and reading at a 4.5 grade level. Subject 7 was an 18 year, 9 month old male student classified with a specific learning disability and reading at a 4.0 grade level. Subject 8 was a 19 year, 1 month old male student classified as multiply disabled and reading at a 6.5 grade level. Subject 9 was an 18 year, 10 month old male student classified as other health impaired and reading at a

5.5 grade level. Subject 10 of the Control Group was a 17 year, 11 month old male student classified as multiply disabled and reading at a 4.5 grade level.

The research questions to be answered were:

1. What are the effects of using self-monitoring reading strategies with high school students with learning disabilities before, during, and after reading assignments on comprehension?
2. Will the effects of the use of self-monitoring strategies be maintained after teacher guided interventions are removed?

Results

Table 3 displays of the results for the percentage of reading comprehension questions answered by participants reading comprehension during the baseline, intervention, and post-intervention phases of the study. During the baseline phase, the intervention group achieved a mean score of 50 on the comprehension questions. The control group achieved a slightly higher mean score (57). During the intervention phase, the intervention group increased by 15 percentage points to a mean score of 65 while the control group's scores went down by 12 points to a mean of 45%. The intervention group continued to improve their scores during the post-intervention phase, increasing their scores by 17 points to a mean of 82%. The control group showed little change (from 45 % to 46%) during the post-intervention phase

A t-test was run on the differences between the groups during each phase. There were statistically significant differences between the groups on the intervention phase ($t= 2.40$, $p<.05$) and for the post phase ($t= 2.40$, $p<.05$).

Table 3

Results for Percentage of Comprehension Questions Answered During Baseline, Intervention, and Post-Assessment Phases

Subjects	Baseline Phase	Intervention Phase	Post-Intervention Phase
Intervention Group			
1	73	63	80
2	49	88	100
3	30	43	80
4	43	67	73
5	53	55	77
Mean	50	63	82
Control Group			
6	37	30	17
7	43	18	20
8	83	85	77
9	87	65	87
10	33	27	30
Mean	57	45	46

Figure 4 illustrates the mean percentage of correct answers during the baseline, intervention, and post-assessment for each student in the Intervention Group and the Control Group. All five students in the Intervention Group showed progress from the baseline phase to the post-assessment phase. As a group, the subjects increased their percentage of correct answers from the baseline means to the post-assessment means.

In the Control Group, Subjects 6, 7, 8, and 10 all showed a decrease in the percentage of mean correct scores from the baseline to the post-assessment. Subject 9 of the Control Group, showed no change from the baseline to the post-assessment scores. The mean percentage for the Control Group decreased from the initial baseline stories to the final post-intervention stories. When comparing the two groups, the Intervention Group as a whole made progress after being taught the intervention. The Control Group performed at a lower level when comparing baseline to post-assessment results.

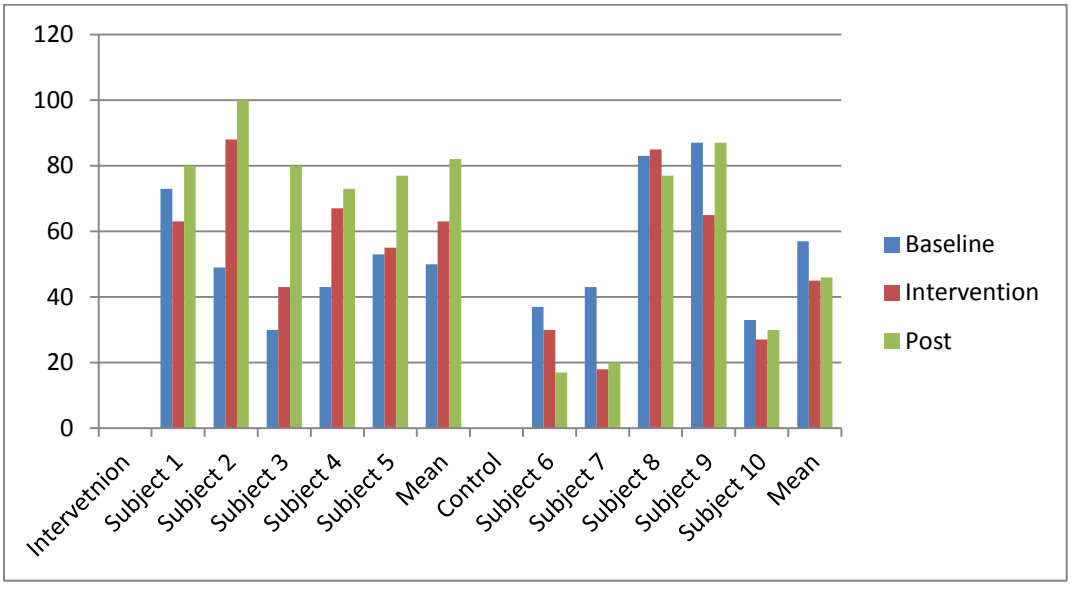

Figure 4. Results for Percentage of Comprehension Questions Answered During Baseline, Intervention, and Post-Assessment Phases

Figure 5 illustrates the number of correct responses the five subjects of the Intervention Group attained on each of the 12 reading passages. All five students showed growth from the three initial baseline assessments to the three final post-assessments. On story 3 of the baseline assessment, all five students performed at a lower level when compared to the other two baseline scores. This story may have affected the differences in baseline and post-assessment scores. The students were able to increase their level of comprehension during the intervention phase and maintain or exceed those levels during the post-assessment phase.

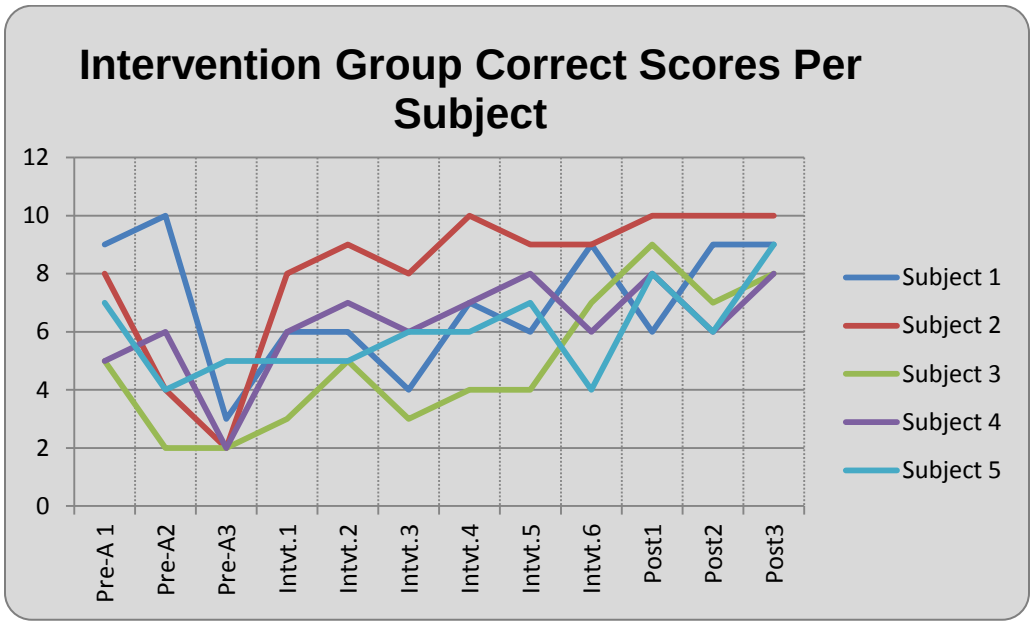

Figure 5. Intervention Group Scores Per Subject

Figure 6 illustrates the number of correct responses the five subjects of the Control Group attained on each of the 12 reading passages. 4 out of the 5 students showed a decrease in the level of correct comprehension questions over the duration of the 12 reading passages. Subject 9 had inconsistencies in her scores, and therefore ended with a 0% change over the course of the study. Subjects 8 and 9 were the students with the two highest determined reading levels for this group. These two students over the

course of the 12 reading passages scored higher on each question when compared to the remaining students within the control group.

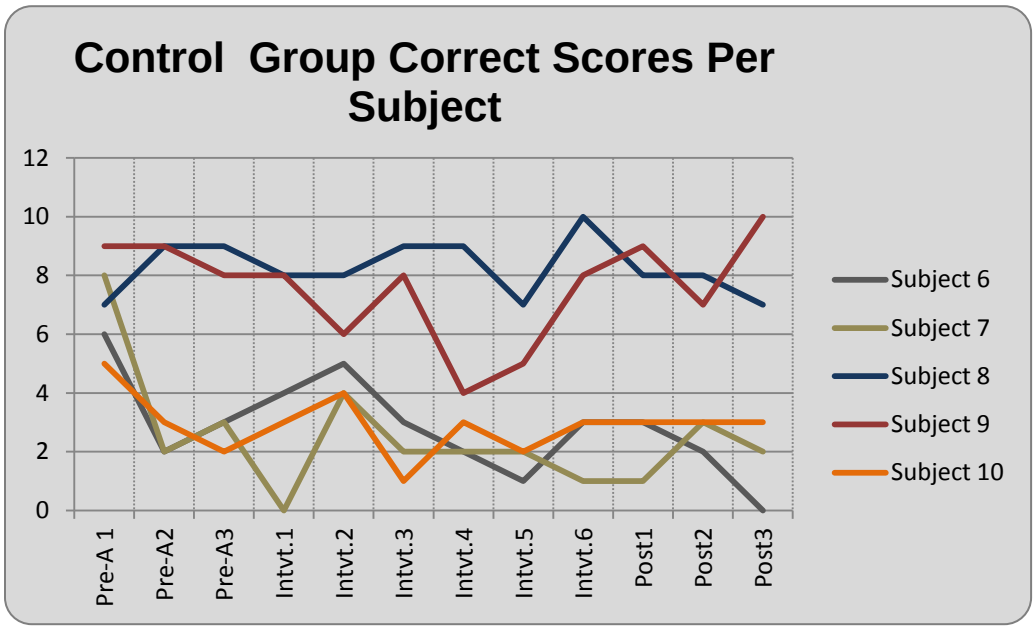

Figure 6. Control Group Scores Per Subject

Table 4 shows the mean scores for the students in the Intervention Group and Control Group during each phase of the study. All five students in the Intervention Group demonstrated improvement in their scores from the baseline assessments to the post-assessments. Subject 1 of the Intervention Group showed the least amount of growth with a difference between the baseline assessments and the post-assessment of 0.7, or 8.75%. Subject two showed an improvement of 5.6 between the mean baseline scores and the mean post-assessment scores. This was an increase of 54% from baseline to post-assessment. Subject three improved his mean number of correctly answered comprehension questions by 5, or 62.5%. Subject four showed a mean gain of 3, or 41.1%. Subject 5 improved his mean number of correctly answered questions by 2.3, or

30.3%. Four out of five students in the Intervention Group showed an improvement in their mean comprehension scores of 30% or greater.

In contrast to the Intervention Group, the Control Group did not show improvement from mean baseline scores to mean post-assessment scores. Subject 6 showed a mean decrease of 2.0, or 54.1%. Subject 7 showed a decrease of 2.3, or 53.5% between the mean baseline scores and the mean post-assessment scores. Subject 8 had a decrease in mean correct scores of 0.6, or 7.3%. Subject 9 showed no improvements or decreases in scores, yielding a 0%. Subject 10 showed a decrease of 0.3, or a 9.1% from baseline means to post-assessment means.

Table 4

Mean of Baseline, Intervention, Post-Assessment, & Percentages for Intervention and Control Groups

Subjects	Mean of Baseline	Mean of Intervention	Mean of Post-Assessment	Difference Between Baseline & Post-Assessment	Percentage of Improvement from Baseline to Post-Assessment
Intervention					
1	7.3	6.3	8	+0.7	8.75%
2	4.6	8.8	10	+5.6	54%
3	3	4.3	8	+5	62.5%
4	4.3	6.6	7.3	+3	41.1%
5	5.3	5.5	7.6	+2.3	30.3%
Control					
6	3.7	3	1.7	-2.0	-54.1%
7	4.3	1.8	2	-2.3	-53.5%
8	8.3	8.5	7.7	-0.6	-7.3%
9	8.7	6.5	8.7	0	0%
10	3.3	2.7	3	-0.3	-9.1%

Figure 7 illustrates the mean scores of the number of correct answers from the Intervention and Control groups. The Intervention Group exhibited an upward trend

from the baseline assessments to the post-assessments. They attained a mean score of 39.8% improvement from the initial baseline scores. The Control Group performed at more of a steady rate and showed a decrease in the mean number of correct scores from the initial baseline assessments to the final post-assessments. Beginning with the intervention phase, the Intervention Group showed a steady increase in improved number of correct scores in comparison to the control group.

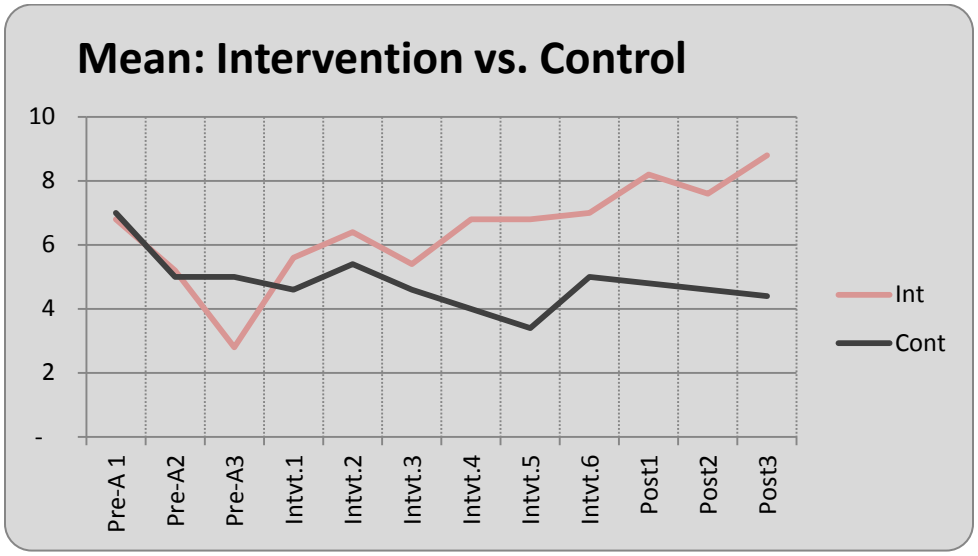

Figure 7. Mean of Intervention and Control Groups

Chapter 5

Discussion

Review

This study examined the effect of teaching older high school students with reading disabilities specific strategies for before, during, and after reading to improve comprehension. The participants of this study were 10 high school students ranging in ages from 17.4-19.1 years old from a special services school district in South Jersey. All students were identified as reading significantly below grade level. Two groups were formed; the Intervention group and the Control group. Both groups were administered 12 reading passages with 10 accompanying comprehension questions for each passage. The control group worked independently on each passage. The Intervention Group completed three stories independently to gain a baseline level. Next, they were instructed in before, during, and after reading strategies for six stories. Finally, the Intervention Group was given a post-assessment where the students completed three more stories independently.

Teaching specific reading strategies to high school students with learning disabilities proved to be an effective intervention for improving comprehension of text. All five of the Intervention Group students showed improvement in the number of correct answers from the baseline to the post-assessment. This was specifically seen through the mean scores of the individual students on the baseline reading passages to the post-assessments, as well as the group mea scores for the baseline and post-assessments.

It was hypothesized students would improve their ability to self-monitor while they read and ultimately increase comprehension of appropriate selected reading materials. 100% of the Intervention Group showed improvement on their ability to

answer comprehension question after reading a leveled passage. The Intervention Group showed a mean increase in correct answers by 39.8%. The control group actually showed decline of 17.9% correct answers on the post-assessment when compared to the baseline passages.

Reading can be divided into five distinct areas: phonemic awareness, phonics, fluency, vocabulary, and comprehension, according to the National Reading Panel (2000). Although word decoding and fluency are major components of reading, reading comprehension is the element that is most tightly linked to the academic and professional success of students with learning disabilities (Baumert et al., 2001). In order for readers to be successful, it is imperative they understand what they are reading. Constructing meaning from text is the foundation for progressing academically and moving beyond the classroom. High school students with learning disabilities continue to need ongoing instruction and reinforcement to better facilitate their comprehension of text. According to Torgesen (2005), older students with reading difficulties can present instructional challenges; however they can show improvement with sustained, focused instruction. Using evidenced-based strategies for older students with learning disabilities is a key to improved comprehension and transfer of skills from one subject area to another. Good readers use strategies before, during, and after their reading to derive meaning from the text. Poor readers however, often do not check for understanding as they read. Consequently, by the time they get to the end of the passage, meaning has not been established. Students with learning disabilities are recognized as inefficient readers with limitations in meta-cognitive skills, including difficulties in recognizing and adapting to comprehension breakdowns (e.g., Gersten, Fuchs, Williams, & Baker, 2001).

Several themes emerged as good practices for building comprehension in students with learning disabilities, according to a meta-analysis conducted by Souvignier and Antoniou (2007). Their review found the use of summarization, main idea strategies, self-monitoring, and explicit instruction improved comprehension. McLaughlin & Allen (2007) further reported that within these general comprehension topics comprehension instruction should be used before, during, and after reading activities.

In this current study, students were instructed on how to preview a passage by looking at titles, pictures, and captions. Students were given reading checklists to make predictions, take notes while they read, identify the author's purpose, and summarize key points in the text. In a similar study conducted by Eilers and Pinkley (2006), students were given explicit instruction in meta-cognitive strategies to use before, during, and after reading a text and showed significant growth in reading comprehension from pre-tests to post tests. The study examined the effectiveness of explicit instruction in using prior knowledge, predicting, and sequencing to improve comprehension of 24 first grade students. Two themes emerged when looking at each of the students and their use of strategies. It was determined the use of prior knowledge to make connections to the text enhanced comprehension of the material. Furthermore, students were observed using the strategies which were taught within the small groups and whole class during independent reading activities separate from the designated times.

TWA strategy encourages students to begin to think about the text before they read the material. Students make predictions and connections to the text. In a study using the TWA method, Mason, Meadan, Hedin, & Corso (2006) found struggling students benefitted from setting a purpose for their reading.

In a study conducted by Antoniou & Souvignier (2007), 73 students from fifth to eighth grade with learning disabilities were monitored on the effects of strategy instruction on the improvement of reading comprehension. The study was conducted over one school year. Two groups were formed; a control group which received traditional reading instruction and the intervention group which was taught the specific comprehension strategies. Based on the results of the study, the intervention group tended to demonstrate greater gains in reading comprehension than that of the control group. The intervention group also utilized the comprehension strategies taught after the intervention was finished. It was found students who participated in the study and were identified as having a learning disability benefitted from specific strategy instruction during reading activities.

Reciprocal teaching is one method that has been successful in supporting middle and high school students with learning disabilities during the reading process (Palincsar & Brown, 1984) and (Fillenworth, 1995). Reciprocal teaching is divided into four distinct strategies to aide in comprehension before, during and after reading new text. The four strategies include predicting, questioning, clarifying issues, and summarizing. In a study conducted by Weedman & Weedman (2001), a school-wide high school reciprocal teaching plan was implemented over a five year period. During the first year of implementation, the staff documented limited growth; however over the next four years, students displayed significant growth in comprehension of text as well as increased standardized test scores. Reciprocal teaching appeared to benefit struggling students in high school with their reading comprehension.

The use of self-monitoring response sheets is way of expanding reciprocal teaching, graphic organizers, and inference strategy instruction. The self-monitoring response sheets use questioning techniques and designated stop points to have students check for understanding while they read. After the reading, the self-monitoring sheets are discussed and students are given a comprehension quiz based on the information read. According to a study conducted by Crabtree, Alber-Morgan, & Konrad (2010), high school students showed an increase in reading comprehension through the use of self-monitoring sheets.

Limitations

Although the results of this study yielded positive effects, the number of participants in the study were small in size. This group of 10 students provided a limited amount of data on the effectiveness of using specific strategy instruction to improve the comprehension of older high school students with reading disabilities. Increasing the number of participants could have provided a more thorough evaluation of the intervention.

Another limitation of this study was the implementation time. Other studies looked at the effects of the use of strategy instruction over longer periods of time. Unique to this study was the loss of instructional time due to an abnormally large amount of snow days and delayed openings for the school district. During the study, the school was closed seven days due to snow and opened two hours late on five other school days. This was highly disruptive to the educational process. Schedules had to be amended which included rescheduling of community based outings and other previously planned activities. Several of the students in the study became upset and exhibited disruptive

behaviors due to the schedule changes. This could have had a direct effect on the individual student performance as well as other students observing these behaviors within the classroom.

Another limitation of the study was it was only conducted with students attending a special services school district. All of the students had identified reading disabilities. Along with the reading disabilities, many of the students had behavioral and social/emotional concerns which impacted their daily functioning. This study may have yielded greater results if it was conducted in a public high school with students with reading disabilities.

Finally, the teacher who implemented the intervention was trained to present the strategies in a specific manner. However; only having one staff member conduct the intervention has limitations. The results could be biased. Another teacher trained in the same manner may implement the strategies differently, and therefore changing the results.

Practical Implications

The students who participated in this study received specific strategy instruction before, during, and after reading a passage. The results showed this type of intervention has a positive effect on older high school students with reading disabilities. The students completed the reading checklists as they read. They continued to utilize the strategies after the intervention. The students were able to make connections to the text and frequently checked their predictions. The classroom teacher reported the students in the Intervention Group continue to read the titles, look at the pictures, and captions before reading, and make predictions. Students continued to read below grade level, however

they improved their ability to answer comprehension questions and were able to establish a purpose for their reading, as opposed to simply reading because the teacher told them to do so. Classroom teachers can continue to use the before, during, and after reading strategies across content areas. Students can complete the reading with or without reading checklists. These strategies can be reinforced during any type of reading activities. Frequently monitoring students for understanding is key to enhancing their comprehension.

Future Studies

There is a large body of research which supports the effectiveness of the use of strategy instruction to improve reading comprehension. There is less research on the effectiveness of such strategies with older students. Future studies can focus on longer time periods to assess the students and over different content areas. A larger number of students should be included in future studies to gain a better understanding of the effectiveness of the specific strategy instruction. More than one teacher should be trained in the intervention and should be derived from different content areas. This intervention was conducted in a small group format. Would it be as effective when presented to a larger class of students. Can the students independently transfer the previously learned strategies to new material in a variety of settings and formats?

Conclusion

In this study, two questions were to be answered. First, what are the effects of using self-monitoring reading strategies with high school students with learning disabilities before, during, and after reading assignments on comprehension? After reviewing the student data, 100% of the intervention group members showed

improvement in their ability to answer comprehension questions after reading a given passage. Four of the five students increased their correct scores by more than 30%. Second, will the effects of the use of self-monitoring strategies be maintained after teacher guided interventions are removed? According to the data, the Intervention Group continued to use the self-monitoring strategies after the intervention period was over. The classroom teacher who implemented the intervention reported the students continue to use the strategies. They performed best when given reminders and prompting to remember what to do before, during, and after reading a passage. Over a relatively short period of time, students showed improvement in their ability to answer comprehension questions after reading a related text. The effectiveness of specific strategy instruction for before, during and after reading can be an ongoing process of review and practice for the students. Based on these results, even the oldest high school students can benefit from strategy instruction. This basic model can be modified to meet the needs of classes within different content areas and at different levels. Providing specific strategy instruction to students of any age and reading level can help to improve comprehension. These skills can be transferred to reading beyond the classroom which is a valuable skill to obtain.

References

Alfasi, M. (2004). Reading to learn: Effects of combined strategy instruction on high school students. *Journal of Educational Research, 97*(4), 171-184.

Anderson, R. C., (2004). Role of reader's schema in comprehension, learning, memory. In R. B. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (5th ed,. 594-606). Newark, DE: International Reading Association.

Anderson, R. C., & Pearson, P. D., (1984). A schema-theoretic view of basic processes in reading comprehension. In P.D. Pearson, R. Barr, M.L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (225-253). New York: Longman.

Antoniou, F., & Souvignier, E. (2007). Strategy instruction in reading comprehension: an intervention study for students with learning disabilities. *Learning Disabilities: A Contemporary Journal, 5*(1), 41-57.

Baker, S., Gersten, R. & Scanlon, D. (2002). Procedural facilitators and cognitive strategies: Tools for unraveling the mysteries of comprehension and the writing process, and for providing meaningful access to the general curriculum. *Learning Disabilities Research and Practice,* 17, 65-77.

Baumert, J., Klieme, E., Neubrand, M., Prenzel, M., Schiefele, U., Schneider, W., Stanat, P., Tillmann, K.J. & Weiss, M. (2001). *PISA 2000.* Opladen, Germany: Leske & Budrich.

Block, C., & Israel, S. (2004). The ABCs of performing highly effective think alouds. *The Reading Teacher, 58,* 154-167.

Bos, C. S., & Anders, P. L. (1990). Effects of interactive vocabulary instruction on the vocabulary learning and reading comprehension of junior-high learning disabled students. *Learning Disabilities Quarterly, 13,* 31-42.

Bostas, G., & Padeliadu, S. (2003). Goal orientation and reading comprehension strategy use among students with and without reading difficulties. *International Journal of Educational Research,* 39, 477-495.

Chalk, J. C., Hagan-Burke, S., & Burke, M. (2005). The effects of self-regulated strategy development on the writing process for high school students with learning disabilities. *Learning Disability Quarterly, 28,* 75-86.

Crabtree, T., Alber-Morgan, S.R., & Konrad, M. (2010). The effects of self-monitoring of story elements on the reading comprehension of high school seniors with learning disabilities. *Education and Treatment of Children, 33*, 187-203.

Davey, B. (1983). Think-aloud – demonstrating the cognitive processes of reading comprehension. *Journal of Reading, 27*(1), 44-47.

Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A.E. Farstrup & S.J. Samuels (Eds.), *Handbook of language and literacy: Development and disorders* (501-520). New York: Guilford.

Eilers, L. H., & Pinkley, C. (2006). Metacognitive strategies to comprehensd all text. *Reading Improvement, 43*(1), 13-29.

Fillenworth, L. I. (1995). *Using reciprocal teaching to help at-risk college freshman study reading.* Unpublished doctoral dissertation. Minneapolis, MN: University of Minnesota.

Fritschmann, N. S., Deschler, D., & Schumaker, J. B. (2007). The effects of instruction in an inference strategy on the reading comprehension skills of adolescents with disabilities. *Learning Disabilities Quarterly, 30*(4), 245-262.

Gersten, R., Fuchs, S. L., Williams, P. J., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of research. *Review of Educational Research , 71*, 279-320.

Goldman, S. R., & Rakestraw, J. A. (2009). Structural aspects of constructing meaning from text. In M. L. Kamil, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* Vol. 3, pp 311-335). Mahwah, NJ: Erlbaum.

Harris, T. L., & Hodges, R. E. (Eds). (1995). *The literacy dictionary: The vocabulary of reading and writing.* Newark, DE: International Reading Association.

Hilden, K., & Pressley, M. (2002). *Can teachers become comprehension strategies teachers given a small amount of training?* Paper presented to the 52nd annual meeting of the National reading Conference, Miami, FL.

Hollenbeck, A. R. (2013). Beyond talking about books: Implications of the reading comprehension instruction and pedagogical beliefs of a special educator perceived as effective . *Learning Disabilities Quarterly, 36*(2), 112-125.

Keene, E. O., & Zimmermann, S. (2013). Years later, comprehension strategies still at work. *The Reading Teacher, 66*(8), 601-606.

Kintsch, W. (1998). *Comprehension: A paradigm for cognition.* Cambridge, UK: University Press.

Joseph, L. M., & Eveleigh, E. L., (2011). A review of the effects of self-monitoring on reading performance of students with disabilities. *Journal of Special Education, 45*(1), 43-53.

Marcell, B., DeCleene, J., & Juettner, M. R. (2010). Caution! Hard hat area! Comprehension under construction: Cementing a foundation of comprehension strategy usage that carries over to independent practice. *The Reading Teacher, 63*(8), 687-691. doi: 10.1598/RT.63.8.8

Mason, L. H., Davison, M. D., Hammer, C. S., Miller, C. A., & Glutting, J. J. (2012). Knowledge, writing, and language outcomes for a reading comprehension and writing intervention. *Read Write, 26*, 1133-1158. doi: 10.1007/s1145-012-9409-0

Mason, L. H., Snyder, K. H., Sukhram, D. P., & Kedem, Y. (2006). TWA + PLANS strategies for expository reading and writing: Effects for nine fourth-grade students. *Exceptional Children, 73*, 69-87.

Mastropieri, M. A., & Scruggs, T. E. (1997). Best practices in promoting reading comprehension in students with learning disabilities: 1976 to 1996. *Remedial and Special Education, 18,* 197-214.

McLaughlin, M. (2013). Reading comprehension: What every teacher needs to know. *The Reading Teacher, 66*(7), 433-440.

McLaughlin, M. (2003). Guided comprehension in the primary grades, Newark, DE: International Reading Association.

Meltzer, L., Katzir, T., Miller, L., Reddy, R., & Roditi, B. (2004). Academic self-perceptions, effort and strategy use in students with learning disabilities: Changes over time. *Learning Disabilities Research and Practice, 19*(2), 99-108.

McLaughlin, M., & Allen, M.B. (2009). *Guided comprehension in grades 3-8* (2nd ed.). Newark, DE: International Reading Association.

National Institute of Child health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

National Reading Panel (2000). *Report of the National Reading Panel: Reports of subgroups* (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office.

Palinscsar, A. M. & Brown, A. L. (1984). Reciprocal teaching of comprehension and monitoring activities. *Cognition and Instruction, 1*(2), 117-175.

Palinscar, A. M., David, Y. M. (1991). Promoting literacy through classroom dialogue. In E. Hiebert (Ed.) *Literacy for a diverse society: Perspectives, programs, and policies.* New York: Teachers College.

Pressley, M., & Afflerbach, P. (1995), *Verbal protocols of reading: The nature of constructively responsive reading.* Hillsdale, NJ: Erlbaum.

Roberts, G., Torgesen, J. K., Boardman, A., & Scammacca, N. (2008). Evidence-based strategies for reading instruction of older students with learning disabilities. *Learning Disabilities Research and Practice, 23*(2), 63-69.

Rogevich, M. E., & Perin, D. (2008). Effects on science summarization of a reading comprehension intervention for adolescents with behavior and attention disorders. *Exceptional Children, 74*, 135-154.

Slater, W. H., Horstman, F. R. (2002). Teaching reading and writing to struggling middle school and high school students: The case for reciprocal teaching. *Preventing School Failure, 46*(4), 163-166.

Sporer, N., & Brunstein, J. C. (2009). Fostering the reading comprehension of secondary students through peer assisted learning:effects on strategy knowledge, strategy use, and task performance. *Contemporary Educational Psychology, 34*(4), 289-297.

Stricklin, K. (2011). Hand-on reciprocal teaching: A comprehension technique. *The Reading Teacher, 64*(8), 620-625.

Swanson, P. N. & DeLaPaz, S. (1998). Teaching effective comprehension strategies to students with learning disabilities and reading disabilities. *Intervention in School and Clinic, 33*(4), 209-218.

Sze, S. (2010). Teaching reading to students with learning difficulties. *Reading Improvement, 47*(3), 142-150.

Walker, B. J. (2005). Thinking aloud: Struggling readers often require more than a model. *The Reading Teacher, 58*(7), 688-691.

Torgesen, J. K. (2005). Recent discoveries from research on remedial interventions for children with dyslexia. In M. Snowling & C. Hulme (Eds.), *The science of reading* (521-537). Oxford, UK: Blackwell.

Vaughn, S., Levy, S., Coleman, M., & Bos, C. S. (2003). Reading instruction for students with LD and EBD: A synthesis of observation studies. *Journal of Special Education,* 36, 2-13.

Weedman, D. L., & Weedman, M. C. (2001). When questions are the answer. *Principal Leadership, 2*(2), 42-46.

Wood, E., Woloshyn, V. E., & Willoughby, T. (Eds.). (1995). *Cognitive strategy instruction: For middle and high schools.* Cambridge, MA: Brookline.