“I can read accurately but can’t understand the text read:”

The Effects of using a Reading Intervention on
Fifth-Grade Students’ “Word Callers”
Reading Comprehension Achievement

A Dissertation
Submitted to the Graduate School
in Partial Fulfillment of the Requirements
for the Degree
Doctor of Philosophy in Education
By
Christina E. Grant
Dissertation Advisor: Dr. Linda Martin

Ball State University
Muncie, Indiana
July 2013
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BALL STATE UNIVERSITY
MUNCIE, INDIANA
July 2013
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iv.</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii.</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix.</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>x.</td>
</tr>
<tr>
<td>CHAPTER I: INTRODUCTION</td>
<td>11</td>
</tr>
<tr>
<td>Context</td>
<td>11</td>
</tr>
<tr>
<td>Statement of Problem</td>
<td>13</td>
</tr>
<tr>
<td>Purpose of Study</td>
<td>14</td>
</tr>
<tr>
<td>Research Question</td>
<td>14</td>
</tr>
<tr>
<td>Research Sub-questions</td>
<td>14</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>14</td>
</tr>
<tr>
<td>Significance of Study</td>
<td>16</td>
</tr>
<tr>
<td>Assumptions of Study</td>
<td>16</td>
</tr>
<tr>
<td>Summary</td>
<td>17</td>
</tr>
<tr>
<td>CHAPTER II: REVIEW OF RELATED LITERATURE</td>
<td>19</td>
</tr>
<tr>
<td>Theory Relevant to Research Question</td>
<td>22</td>
</tr>
<tr>
<td>Fluency</td>
<td>25</td>
</tr>
<tr>
<td>Reading Comprehension Strategies</td>
<td>26</td>
</tr>
<tr>
<td>Teaching Reading Comprehension Strategies</td>
<td>27</td>
</tr>
<tr>
<td>Multiple Reading Comprehension Strategies</td>
<td>30</td>
</tr>
<tr>
<td>Text Structures</td>
<td>36</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 1…………………………………………………………………………………………70
   The distribution of the “word callers” among the three participating schools

Table 2…………………………………………………………………………………………74
   Research Questions, Dependent Measures, and Analyses

Table 3…………………………………………………………………………………………76
   Student Reading A-Z reading comprehension levels and conversion scores

Table 4…………………………………………………………………………………………79
   Mean scores for Reading A-Z reading comprehension levels

Table 5…………………………………………………………………………………………80
   Results of repeated measures ANOVA analysis considering the time of the interaction and group

Table 6…………………………………………………………………………………………83
   Mean scores for Metacognition Survey

Table 7…………………………………………………………………………………………85
   Reading comprehension strategies used by students across the groups during pre-and post-testing

Table 8…………………………………………………………………………………………89
   Results of Univariate Analysis of Covariance analysis considering group
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reciprocal Teaching Strategy Definitions</td>
<td>54</td>
</tr>
<tr>
<td>2</td>
<td>Reading A-Z reading comprehension level group comparison</td>
<td>81</td>
</tr>
<tr>
<td>3</td>
<td>Metacognition Survey score group comparison</td>
<td>83</td>
</tr>
<tr>
<td>4</td>
<td>Reading comprehension strategy use by students during pre-and post-testing comparison</td>
<td>85</td>
</tr>
</tbody>
</table>
ABSTRACT

The purpose of this study was to determine the effects of an intervention of five researched reading strategies on fifth-grade students’ “word callers” reading achievement. Twenty-one fifth-grade students attending elementary schools in mid-western United States participated in this study. Students were randomly assigned to either the experimental group or the control group. The students in the experimental group received 50 minutes of small-group intervention, twice weekly, after-school, for 12 weeks focusing on the use of five research-based reading comprehension strategies. The control group received 50 minutes of small-group intervention, twice weekly after-school for 12 weeks, focusing on Common Core reading curriculum. Triangulation of data sources was achieved through analysis of the running records including comprehension retelling and answering of questions, a metacognition survey, an oral fluency rater scale, observational notes, and a reflective interview protocol on students’ strategy use. General findings included statistically significant changes in reading comprehension levels in all students (control and experimental) who participated in the after-school reading intervention. Importantly, statistically significant changes began to take place in “word callers” in the 12-week study. This was seen in their overall reading comprehension levels, and ability to report comprehension strategies and apply them to their reading. In summary, an after-school intervention explicitly using the Reciprocal Teaching model plus visualizing appears to play a large role in helping “word callers” improve their reading comprehension ability.
CHAPTER I: INTRODUCTION

Context

All struggling readers are not the same. Some at-risk readers have high accuracy, decoding almost every word given to them, and low comprehension, where they are unable to remember and understand what they have previously read; these students are known as “word callers” (Meisinger, Bradley, Schwanenflugel, Kuhn, & Morris, 2009). Some studies have estimated that “word callers” make up as much as one-third of all struggling readers (Cartwright, 2011). These at-risk learners are in almost every classroom and have been noticed around the world and across all grade levels.

As children gain proficiency over the process of reading, they are able to use multiple reading strategies effectively and simultaneously (Pressley, 2000; Trabasso & Bouchard, 2002) with more complex text. However, challenged readers have difficulties using strategies successfully. Therefore, the primary goal of literacy instruction is to not only teach students the various components of reading, (i.e., word recognition, fluency, phonics, phonemic awareness, vocabulary) (National Reading Panel, 2000) but to facilitate the comprehension of the text details. Pearson, Roehler, Dole, & Duffy (1990) stated students need to be self-regulated, interactive, flexible, and problem-focused thinkers. “Word callers” struggle greatly with flexible thinking while reading (Cartwright, 2011).

This research study focused on fifth-grade struggling readers’ exposure to reading comprehension strategies using a systematic, intervention approach known as Reciprocal Teaching. Through explicit instruction, students gain knowledge on several evidence-
based, reading comprehension strategies, namely visualizing, predictions, questioning, clarifying, and summarizing. Text becomes increasingly multifaceted through each grade level and thus, readers use reading comprehension strategies more than ever at the fifth-grade level. Students who have difficulty with comprehending text structures often have a hard time with reading comprehension strategies, specifically at the intermediate (Schorzman & Cheek, 2004) and junior high levels, when the text tends to jump in complexity.

At the fifth-grade level, students will soon enter a different setting in sixth grade. We, as teachers, need to help these students become ready for the many differences that will occur in this new environment. The middle-school environment encompasses multiple teachers, and complex social differences, where the student is, at times, expected to work independently. As a result, many students enter this setting without the tools needed. Thus, students need to be able to comprehend the complex text given to them in order to strive in this independent learning environment. Elementary schools often contribute to the problem by overly focusing on word identification skills and fluency, which has created students who read accurately without understanding the text content. These students, also known as “word callers” (Diehl, 2005; Hamilton & Shinn, 2003; Meisinger, Bradley, Schwanenflugel, & Kuhn, 2010), will continue to read words accurately without understanding the text at hand.

The fifth-grade students in this study were identified as not scoring well on all aspects of the comprehension questions assessed, indicating these readers are poor comprehenders. Thus, the researcher chose to focus on the multiple-strategies that good readers use to comprehend text. Strategies that good readers use include: self-
monitoring, activating prior knowledge, questioning, making connections, visualizing, inferring, determining important details, and synthesizing (Pearson et al., 1990; Pressley, Schuder, Bergman, El-Dinary, 1992). However, this intervention focused on predicting, questioning, visualizing, clarifying, and summarizing, which encompassed all four strategies that Palicsnar and Brown (1984) used in their Reciprocal Teaching study, with an addition of visualizing. Even though the word “imagery” is used in research literature, the term was changed to “visualizing” during the study to simplify the concept for the students, and thus will be discussed as visualizing throughout the following chapters.

This study involved an intervention model, which examined the effectiveness of explicit instruction of reading comprehension strategies through small-group discussion. The Reciprocal Teaching model is a method in which the teacher explains, models, and uses reading comprehension strategies to guide conversation throughout the text. There will be actions that enable students to understand the significance of new content, which also facilitates memory (Bransford, 1984). The expectation of this study was that over time these students “word callers” would apply these five specific strategies during their reading and therefore become proficient readers.

**Statement of the Problem**

Many intermediate and upper grade-level students often read text accurately but do not possess the strategies to organize and comprehend the text. These children (i.e., “word callers”) “have not been widely studied” (Aaron, Joshi, & Williams, 1999, p. 130). As well, little published research has been cited to focus on interventions for these types of readers (Cartwright, 2011).
Purpose of the Study

The purpose of this study was to determine the effects of an intervention to guide fifth-grade students’ “word callers” use of five research-based reading strategies (i.e., predicting, questioning, visualizing, clarifying, and summarizing).

Research Questions

1) What are the effects of Reciprocal Teaching with predicting, questioning, visualizing, clarifying, and summarizing on fifth-grade students’ “word callers” reading comprehension achievement?

Research Sub-questions

1) To what extent will Reciprocal Teaching affect fifth-grade students’ “word callers” ability to report the use of reading comprehension strategies while reading?

2) To what extent will Reciprocal Teaching affect fifth-grade students’ “word callers” application of reading comprehension strategies?

3) To what extent will Reciprocal Teaching affect fifth-grade students’ “word callers” overall fluency scores as compared to their reading comprehension achievement scores?

Definition of Terms

-“Word caller”: A reader who is successful in the area of accuracy yet does not comprehend the text at a higher-comprehension level

(Cartwright, 2010; Diehl, 2005; Hamilton & Shinn, 2003; Meisinger et al., 2010)

-Proficient reader (good reader): A reader who reads on grade level and is
successful at reading rate, expression, comprehension, vocabulary

-Text: The written language in various settings such as: a trade book, a textbook, an article, a novel, a magazine, a billboard advertisement

-Reading comprehension: A process in which readers construct meaning by interacting with text through a combination of previous experience, information in the text, and the stance the reader takes in relationship to the text (Pardo, 2004)

-Strategies: Tools used to help students achieve their literacy goals (Pressley, et al., 1998)

-Background knowledge: Knowledge a person has prior to the discussion/lecture (Graves, Cooke, & LaBerge, 1983)

-Predicting: Guessing what will happen next (Brown, Pressley, Van Meter, & Schuder, 1996)

-Questioning: An expression often used to test knowledge of the subject

-Imagery: visualizing the text in your mind (Sadoski, 2004)

-Clarifying: Recognizing and questioning any words or phrases that are unclear,
unfamiliar, or misinterpreted

-Summarizing: Using the main idea of the text to determine the important main message of the passage

**Significance of the Study**

Recently, state and federal mandates have advocated what is considered a balanced view of reading instruction. However, the emphasis has been on fluency and word identification with younger students, even though the National Reading Panel specifically outlined in 2000 the five components of reading instruction to include phonemic awareness, phonics, vocabulary, fluency, and comprehension. As a result, some students are word calling but not comprehending what is read, which is the primary goal of reading. However, research has shown that in many instances across the nation, classroom-reading programs are not focused on teaching comprehension of the text (Collins-Block, Rodgers, & Johnson, 2004; Durkin, 1979; Pressley, Wharton-McDonald, Mistretta-Hampton, Echevarria, 1998; Santa, 2000). As a result, many students enter the intermediate and upper grades without the strategies to recall and comprehend more complex text. As of yet, there has been a lack of research in the area of “word callers” (Cartwright, 2011), students who have high word-accuracy reading achievement and low comprehension reading scores, especially within intermediate and junior high age students.

**Assumptions of the Study**

While developing the study the following assumptions were anticipated:
1) The students will provide accurate information during the reading interview process.

2) The students at the beginning of the intervention will be able to recall facts from the story. However, the students will not be able to understand the main idea or infer the story details.

3) The students at the beginning of the intervention will be able to answer literal questions from the story.

4) The students at the beginning of the intervention will not be able to answer higher-order comprehension questions pertaining to the text.

**Summary**

“Reading is a complex mental process that integrates a variety of cognitive skills and different kinds of knowledge in working memory to bring meaning” (Miller, 2006, p. 407). Reading comprehension is defined as the level of understanding of a written piece. The ultimate goal of reading is to understand the text (Pressley, 2000; Rasinski, 2012; Thorndike, 1917).

Reading, unlike speaking, is an unnatural act; children should not be expected to learn to read without explicit instruction in the underlying knowledge areas from teachers (Pardo, 2004). Good readers engage in certain kinds of thought processes when reading (Duke & Pearson, 2002; Pressley & Afflerbach, 1995). Teachers need to help guide the student with these thinking processes directly. Reading lessons should provide learners with life-long literacy habits that will promote worthwhile reading satisfaction (Massengill, 2003). Other researchers will argue that the focus of a reading lesson is to understand the meaning of text (Dolch, 1960). No matter the direct importance of a
reading lesson, a common thread is that all teachers and researchers want children to make sense and understand the meaning from the text. By doing so, P. David Pearson (2011) stated, will allow readers to “take a critical stance toward what they read, hear, and view in our exciting but confusing multi-media world” (p. 18).

Children today are expected to display literacy skills far beyond those measured in the past. As society becomes increasingly dependent on knowledge and vast amounts of information, what it means to be literate is changing rapidly. The future of today’s students depends on how well they can comprehend and thoughtfully use a wide variety of texts and reading strategies. Research studies have helped shape the direction of how reading comprehension has been taught in classrooms throughout history, including current teaching methods in today’s schools. A discussion of the theoretical basis for the study of “word callers” and a review of the literature related to reading comprehension will now be discussed.
Chapter II: REVIEW OF LITERATURE

Children’s reading comprehension begins with their earliest interactions at home (Sulmby, 1984), and in the classroom. If teachers do not directly connect new words to how those words develop stories, children’s understanding will be affected (Pardo, 2004). Recent research suggests that even young emergent readers are aware when a story does not make sense, and can develop the skills and strategies to comprehend text (Martin & Krager, 2011). Thus, the comprehending of text is a complex process that helps a reader gain meaning at all levels.

Based on research since the 1900s, the definition of reading comprehension has been redefined and now encompasses the following information. The RAND report (2001) defined comprehension as “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language” (p. 11). The NAEP Reading Framework Committee defined reading comprehension as… “an active and complex process that involves understanding written text, developing and interpreting meaning, and using meaning as appropriate to type of text, purpose and situation” (National Center for Educational Statistics, 2005, p. 2). Blachowicz and Ogle’s (2008) definition of reading comprehension stresses the importance of forging meaningful linkages across the various units of text. Similarly, all definitions encompass an involvement of the reader to understand and construct meaning through a variety of complex text. This definition includes more details but the general idea has remained the same since Horace Mann in 1838, “to understand the meaning of words read and master the sense of the reading lessons.”
Struggling readers have to cross many bridges in their path to overcome risk factors and achieve strong reading comprehension skills. One bridge helps the students proceed along the path from vocabulary to reading comprehension and another bridge helps the students cross between written language and meaning of the written language (Allington, 2006). To ensure that many readers cross these paths without difficulties, direct instruction needs to focus on avenues such as: accuracy, rate, decoding, and comprehension (Berninger, Abbott, Vermeulen, & Fulton, 2006).

The overarching goal of reading is the creation of meaning of text that includes both internal and external sources of information. Internal sources include background knowledge, or schema, of the reader; external sources are the text itself. Students need to be aware that the main purpose of reading is to understand (Collins, 1994). Children with poor comprehension appear to view reading of text as “meaning-taking,” not “meaning-making” (Spence, Yore, & Williams; 1999). These students rely on identification of explicit information in the text to memorize direct facts, including numbers, dates, and names. Readers need to focus on the creation of information that integrates all the text’s concepts. Readers who struggle view reading as the summation of words making the meaning of sentences, and thus, the summation of sentences making the meaning of passages, contrary to true reading comprehension (Anderson, 1985). Valid reading comprehension involves the “building of coherent mental representations of the information…processing the meaning of individual words and phrases…within the text and within the larger, preexisting knowledge base” (Goldman & Rakestraw, 2000, p. 311) or schema.
Currently, reading comprehension instruction topic is on the rise and has been captured as one of the top eight in the “What’s Hot” category in 2012. Cassidy & Loveless (2011) quoted P. David Pearson in Reading Today as saying:

It’s great to see comprehension rise in prominence in the what’s hot category for 2012. In my mind, it has always been hot, but I think its rise indicates that the pendulum swing toward the basics may be on a return cycle toward higher order processes and on what has become the new poster child for reform-deeper learning (p. 18).

Discussion of reading comprehension instruction is not a new phenomenon. Public interest of this issue has been on the rise in past decades. However, reading comprehension, and the role of schools in promoting it, has had a definite history in the educational community for the last half of the century. An examination of the history of reading comprehension may be useful as it places this topic in a broader context and indicates how some ideas concerning reading comprehension and its instruction are similar to those of earlier decades.

Little empirical evidence supporting various instructional strategies for teaching reading comprehension exists. The purpose of this study is to determine the effects of an intervention to guide fifth-grade students’ “word callers” use of five research-based reading strategies (i.e., predicting, questioning, visualizing, clarifying and summarizing). Therefore, constructivist and metacognitive theory, which assumes readers actively construct the meaning from text, frame this dissertation. Within this framework “comprehension is a combination of reader, text, and context” (Anderson, Wang, & Gaffney, 2006, p. 277).
Theory Relevant to Research Questions

Theorists interested in text comprehension describe the outcome of comprehension in terms of mental representations (Kintsch, 2004). The brain constructs these mental images after reading text. When readers construct messages, or comprehend, during the reading process, it is known as constructivism (Anderson & Pearson, 1984). From a constructivist viewpoint, learners actively engage in the learning process, and in turn make meaning from the text. Smith (2011) described learning as a continual and natural process. Learning, as viewed from a constructivist thinker, is an on-going state of mind; it is a by-product of active mental engagement.

John Dewey, a respected psychologist in the early 20th century and the first American constructivist, emphasized the importance of the learner’s environment, growth of the individual, and the role of a teacher (Tracey & Morrow, 2006). Bransford and Franks (1971) believed in the constructivist model, where one integrates information from individual sentences in order to construct larger ideas; it also emphasizes the active nature of our cognitive processes. This is consistent with the Constructivists in that they consider children to be actively engaged, constructing meaning in the learning process.

Rosenblatt (1978), who is best known for her influential book, *The reader-the text-the poem*, advocated that the reader plays an active role in meaning-making, reading across text (i.e., nonfiction and fiction), and for setting purposes for reading. Rosenblatt also makes a teacher aware of the different responses that a reader has during the reading process, efferent and aesthetic. Efferent reading is reading for meaning and details, and aesthetic reading is reading for pleasure. Rosenblatt argued that reading involves a transaction between the reader and the text.
Lev Vygotsky (1978) was another key player to note in constructivist theory, known for social development theory, which stresses the importance of social interaction in the development of cognition. Vygotsky believes children are actively involved in their own learning and have a zone where the child learns with help from others. Vygotsky defines the zone as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers” (p. 86). Vygotsky assumed that when a student is at the zone of proximal development for an assignment, providing the appropriate assistance will give the student enough of an improvement to achieve during the task. Decades later, Bruner (1986) used Vygotsky’s idea and applied it to direct teaching in the classroom terming the expression, scaffolding. Scaffolding is now widely used as a metaphor for the temporary supporting structures that assist learners to develop new understandings, new concepts, and new abilities (Hammond, 2001). In the educational setting, scaffolds may include models, cues, prompts, cloze procedures, partial solutions, think-aloud, and modeling.

A direct link between reading and the constructivist theory is metacognition. Flavell (1976) coined the term metacognition (i.e., thinking about one’s thinking). Metacognitive instruction is similar to constructivism due to the concept of the active reader. “The concept of metacognition, when applied to the field of reading, contributes to a constructivist understanding of how reading comprehension occurs, as well as to a body of knowledge regarding instructional strategies that can be used to facilitate reading comprehension” (Tracey & Morrow, 2006, p. 61). Educators have known for decades that instructional strategies are beneficial for a reader to use and know.
Quite early on, Michael Pressley (1992) stated that readers use strategies and good readers have the need to use a variety of them when reading text. Pressley helped to make this practical in the classroom by emphasizing reading strategy instruction. David Pearson also highlighted direct, explicit strategy instruction. Both Pressley and Pearson were among the first to emphasize the idea that readers use multiple reading strategies at one time (Pearson & Duke, 2002; Pressley, El-Dinary, Gaskins, Schuder, Bergman, & Almasi, 1992). Research has demonstrated that good readers actively think about the strategies they employ, thus exhibiting metacognitive reading ability. However, struggling readers have far less metacognitive awareness than good readers (Baker, 2002).

Recently, Kelly Cartwright (2010) explained struggling comprehenders’ difficulty with understanding what they read “….may sometimes be explained in terms of a particular executive control process, cognitive flexibility” (p. 20) which is the ability to consider multiple aspects of a task at once and mentally switch between those task features. Cognitively based views of reading comprehension emphasize that proficient readers use a flexible repertoire of comprehension monitoring and regulating activities (Dole, Duffy, Roehler, & Pearson, 1991), which includes reading strategies (Baker & Brown, 1984; Paris, Wasik, & Turner, 1991; Pressley & Allington, 1999).

“The better that educators understand the variety of theories and models that can be applied to literacy learning situations, the more effectively they can design and implement high-quality literacy instruction” (Tracey & Morrow, 2006, p. 13). High-quality literacy instruction is an essential component of reading comprehension.
instruction. Other factors include fluency, vocabulary, text structures, scaffolding, and modeling.

**Current Literature to the Research Questions**

**Fluency**

Fluency has been a hot topic of educational research in the past two decades. In fact, fluency is considered the gateway to comprehension. Fluency is described as accuracy, automaticity, and prosodic features as a separate element (Kuhn & Stahl, 2003). Without one of these features a reader does not display the aspects of a fluent reader (Rasinski, Blachowicz & Lems, 2006). Chomsky (1968) discussed this fact when describing surface vs. deep structure thinking. Surface structure instruction includes the teaching of sounds (i.e., word study) and fluency (i.e., rate and prosody); whereas, deep structure instruction includes the teaching of comprehension. However, little emphasis has been placed on comprehension in the classroom (Pearson, 1997). Phonics, word study, and fluency were the instructional pieces in the classroom. Rasinski argued that fluency should lead readers to comprehend text (2012); it is the bridge between decoding and comprehension (Allington, 1983).

**Reading Comprehension Strategies**

Much research was completed in the area of fluency; however, in comparison, little research has been done in the area of reading comprehension strategies. This has been especially the case concerning intermediate and upper grade levels. Reading strategies, by definition, are methods used in reading to determine the meaning of a text. Examples are: predicting, visualizing/imagery, connecting, and questioning. Research has identified a number of strategies that support good reading comprehension, and has
established that a good reader is able to deploy a variety of strategies to help while reading for understanding (Fisher & Frey, 2010). A good reader eventually performs the strategy effortlessly and automatically and thus the strategy becomes a reading skill that the student has acquired; this leads to motivating readers to monitor and improve their own reading (Afflerbach, Pearson, & Paris, 2008).

Research in regards to explicitly teaching reading strategies became abundant in response to Durkin’s study (1979). After Durkin’s landmark study in 1979, educators took notice of how reading comprehension was being taught in schools. Durkin examined, through classroom observations of reading and social studies, whether elementary schools provided comprehension instruction; she included 13 school districts and 24 elementary classrooms (third-sixth grades). Durkin observed 4,469 minutes of reading instruction in fourth grade and found that only 20 minutes of this time were spent in teaching students how to comprehend what they were reading. Durkin found that teachers spent almost all of the instructional time asking students questions, but they spent little time teaching students comprehension strategies they could use to answer the questions. Durkin’s study brought many issues regarding comprehension to the forefront of reading research (Pearson, Dole & Bolt, 1988).

One critical component of Durkin’s study is the definition of comprehension. In Durkin’s study (1979), a specific definition of comprehension is not directly provided. Instead, numerous examples of teacher behavior in relation to reading comprehension are explained (e.g., instruction, review of instruction, application, assignment, help with assignment, preparations for reading, assessment, and prediction). Durkin observed ineffective teacher behaviors in regards to reading comprehension (Tracey & Morrow,
2006). Her work led to educators wanting to know more about reading comprehension instruction. Thus, many researchers responded by either creating new comprehension teaching strategies or extending previous strategies (Schorzman & Cheek, 2004). However, little research was implemented directly into practice, even 20 years or so after Durkin’s study (Collins-Block, Rodgers, & Johnson, 2004). Pressley and his colleagues observed elementary classrooms on the same order as Durkin and found essentially the same thing; very little direct comprehension instruction was being done about how to comprehend text (Pressley, Wharton-McDonald, Hampson, & Echevarria, 1998), thus virtually nothing changed.

**Teaching Reading Comprehension Strategies**

The process of learning to read words and making connections to meaningful context is based on complex cognitive, emotional, social, and instructional factors (Lipson & Wixson, 2008). A teacher must help the student work through all these issues so the student can be a successful, proficient reader. One of the issues that teachers have to think about is how to guide students’ development of the strategies to read and understand.

In 1985, Pearson stated that effective reading comprehension is the foundation of successful reading and the classroom teacher must take an active role in the development of reading strategies that will strengthen understanding of text, which a child will use. Teachers must have a clear methodology for developing reading comprehension skills. An effective comprehension program would include procedures aimed at developing strategies in each of the stated areas: background knowledge, word recognition, vocabulary, fluency, and text structures. The guidance of strategy instruction should
begin as early as preschool, so young readers will know what skills a good reader needs. Pang, Muaka, Bernhardt, & Kamil (2003) defined a good reader as:

Good readers are aware of how well they understand a text while reading. Good readers also take active steps to overcome difficulties in comprehension. Students can be instructed in strategies to improve text comprehension and information use (p.14).

Allen (2005) stated that providing students with those strategies as well as providing students with the level of instruction at their individual need is a successful model for motivating students in the area of reading. Students need, at times, teachers to help relay the secrets of what good readers do.

Meaningful and purposeful teaching is essential to teaching students the components of reading comprehension. Understanding text is a complex process including many reading strategies and skills. One must learn these directly and explicitly through modeling and think-alouds, to fully understand what good readers do. Even though modeling a comprehension strategy is an effective approach, it is much more effective to use an explicit explanation along with modeling of the strategy (Duffy, Roehler, Sivan, Rackliffe, Book, & Meloth et al., 1987). By engaging in explicit teaching of the reading comprehension strategies, teachers allow students to see how strategies are used and when to use them.

Findings in a study regarding reading comprehension strategies instruction, completed by Schorzman and Cheek in 2004, included a significant difference (p < .05) between the groups according to an informal cloze procedure; however, a formal test indicated no significant difference. Six teachers participated in the repeated measure
design over seven weeks. Three teachers instructed their 103 sixth-grade students using
lessons constructed with the reading comprehension strategies. The experimental
teachers focused on the process of using contextual clues to aid in comprehension rather
than the explicit teaching of test-taking strategies, which was the focus of the control
teachers’ instruction. Although the intervention was over a short amount of time, the
researchers found differences on the cloze procedure, suggesting that the intervention was
effective in increasing students’ reading comprehension abilities. This is one example
indicating that explicit teaching of reading comprehension instruction can increase a
student’s reading achievement scores. Explicit description of the strategy used and how
it should be used is beneficial for the user to know. Modeling, collaborative use, guided
practice with the gradual release of responsibility (Pearson & Gallenger, 1983), and
independent practice of using the strategy are all essential to mastering the use of the
reading comprehension strategies.

New discoveries in how the learner processes information have changed the
understanding of how a person comprehends. As a result, science now offers new ideas
found that learning actually changes the physical structure of the brain. When readers
gain knowledge through reading a text, their brains change along as well. In 2000, when
studying the topic of metacognition, Pressley determined that proficient readers utilize
multiple metacognitive strategies during reading that assist them in understanding the
text. Reutzel, Smith, and Fawson (2005) studied two types of reading comprehension
strategies with second-grade students. In the study two different reading comprehension
strategies were taught, SSI (one strategy at a time) and TSI (multiple strategies at a time).
The research showed significant changes favoring TSI, using multiple strategies, retention of science content, and their test scores rose on curriculum based assessment for reading comprehension. Both interventions help lead current research to the idea that one uses multiple reading strategies while reading complex text.

**Multiple Reading Strategies**

Scholars previously stated that readers use one strategy at a time (Dole, Duffy, Roehler, & Pearson, 1991; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989). Early on, Keene and Zimmerman (1997) devoted much allotted teaching time to each strategy on its own, implying students use one strategy at-a-time. However, in virtually all-previous listed studies, the investigators had strong instructional control where the teacher continued to guide the student’s learning, and thus not allowing for independent strategy practice and use.

For several decades scholars have debated how to implement strategy instruction (i.e., single-strategy vs. multiple strategy and modeling vs. explicit teaching). It was not until recently that many researchers of reading comprehension started to support and advocate how a reader uses reading strategies independently. Currently, many researchers believe that readers use multiple strategies while reading (Pressley, 2002; Klingner & Vaughn, 1999; Reutzel et al., 2005). Teaching multiple comprehension strategies simultaneously is powerful (Duke & Pearson 2002; National Reading Panel, 2000; Pressley, 2000). Specifically, Pressley (2002) stated, “Good readers do not use comprehension strategies one-at-a-time as they read. Rather they orchestrate and coordinate a ‘set’ or ‘family’ of strategies to comprehend a text” (p. 12). The National
Reading Panel agreed that readers use multiple processes to construct meaning (2000); they advocated for teaching multiple strategy instruction.

Early Palincsar and Brown (1984) presented results of a pilot, and two experimental studies using multiple strategy instruction (i.e., predicting, questioning, clarifying, and summarizing) called Reciprocal Teaching. In the first experimental study, they investigated the use of strategies with seventh graders with adequate decoding but poor comprehension (i.e., “word callers”). Thirty-seven students met in pairs with a teacher, received 20 lessons over a four-week period reading expository passages. The students in the experimental group significantly improved abilities to summarize, detect anomalous information in text, and answer comprehension questions. These changes were maintained over time. According to a follow-up study by Palinscar and Klenk (1991), these students not only improved their comprehension skills immediately, but they also maintained improved comprehension skills when tested a year later. On standardized tests of reading achievement four of six experimental students made substantial gains. Where as, control students displayed no change. This small-group intervention indicated that multiple strategy instruction can improve, over time, reading comprehension achievement scores. In Study 2 of their original research, Palincsar and Brown (1984) moved the multiple-strategy intervention into the classroom (i.e., resource room instruction) with their regular teacher in the facilitator’s role. The intervention materials and procedures were identical to Study 1 expect the location. They found the same findings for improved reading comprehension for sixth, seventh, and eighth graders. Students in the experimental group improved their ability to summarize, answer comprehension questions, and state main ideas. Palincsar and Brown suggest that what
the students learned was not simply how to ask questions and summarize; rather, the new strategies

…enabled and required the students to perform deeper-thinking processing of what they read…to engage in making sense of what they read…to be aware of what they did not understand the material…to engage in additional searching when they encountered comprehension difficulties, and it was the…learning and practice of these processes that led to the improved comprehension (p.167-171).

Cathy Collins (1991) also found that reading comprehension achievement scores increased when she implemented an intervention in three schools, with 352 fifth (178) and sixth (174) grade students for 32 weeks three-days-a-week. During the semester, teachers implemented a two-part reading lesson. The teacher first explained and modeled the reading strategy; the teacher then allowed the students to choose literature to read and practice the strategy. Many student handouts were used including a word-attack student reference sheet. The reading comprehension subtest for pre-and post-testing showed significant improvements on the standardized test given (F = 91.49, p < .001). This reading program proved valuable, involving a longer time period, large sample size, multiple schools, the use of visuals, and the gradual release of responsibility model. This reading study involved whole classrooms; however, if the study was differentiated the effects could have been greater.

Valerie Anderson (1992) found that reading comprehension increases using multiple strategy instruction with students in sixth-eleventh grades. Her three-month intervention allowed students to use multiple strategies at-a-time, in guided practice and independently. Eighty-three students in the experimental group, including nine teachers
using multiple strategy instruction, made greater gains on the reading comprehension subtest of a standardized test than the control group with seven teachers including no strategy instruction. Eighty percent of the experimental group made significant gains. In contrast, fifty percent of the control group made significant gains. While the study was successful and indicates that multiple strategies were beneficial to students, the study was short term indicating that the students could have made greater gains with more time.

Dole, Brown, and Trathen (1996) studied strategy instruction with 67 fifth-and sixth-grade students. Using three instructional methods, including story content, strategy instruction, and basal instruction as a control, the teachers instructed students for a total of five-weeks. They found that the strategy group students made superior gains when reading independently.

More recently in 2002, readers (sixth and seventh grades) with and at-risk for disabilities in reading and with limited English proficiency (LEP) have shown improvements with multiple reading strategy instruction. Fung, Wilkinson, and Moore (2002) used multiple strategy instruction teaching with middle school students. A small sample of 12, including control and experimental groupings, Chinese ESL students in New Zealand participated in an intervention for metacognitive reading strategies in both Chinese and English. During this intervention, teachers explicitly taught how to monitor reading progress, summarize, question, clarify, and draw inferences. Each session was approximately 35 minutes long and conducted everyday for 15 to 20 days. Students in the experimental group participated in discussions of texts either in their first language or English. This intervention found significant improvements in reading comprehension for students in the experimental group. Using a think-aloud protocol to collect data on the
students’ ability to read with comprehension, student performance increased, which indicated that their use of reading strategies increased, when reading expository passages in both languages.

Not every scholar has found reading strategy instruction to be the most effective method. However, while this study was completed recently, the study as a whole lacks multiple areas of critical value. McKeown, Beck, and Blake (2009) completed a research study involving fifth-grade students in a low-performing urban district. In one school 119 students were involved in this two-year comparison study. The purpose of the study was to find out which type of reading instruction was more effective. It is important to note that McKeown and Beck completed a study in 1998 focusing on the content reading program, which they developed. The reading program in 2009 consisted of a five-week period each year where six teachers (three experimental and three control) implemented either a basal reading program, content reading program, or a strategy instructional program. In each group, comparisons were made between one teacher who implemented the program and a control group who did not receive the instruction. The basal reading program consisted of asking the questions provided in the basal used everyday. The content reading program included instruction involving open-ended discussions about the text read. During the strategy-reading program, the instruction incorporated little strategy instruction and much strategy practice.

Teachers were given professional development time to learn the reading instruction that they would incorporate into their whole-group classroom instruction once a week for 45 minutes, then it was “business-as-usual” (p. 222) reading instruction. Even though this 2009 study was examining the effectiveness of all three reading programs,
McKeown and Beck may have been biased towards their own content reading instructional program. Repeated measures were conducted, using standardized measures, on reading comprehension, word-attack, and word-identification subtests. Results indicated that the content instruction students outperformed the strategy students. However, the findings are limited by the amount of time involved, including five sessions of 45 minutes a week, only one school used, lack of professional development on think-alouds, modeling, scaffolding, explicit strategy instruction, and whole-group instruction without differentiation. The professional development, although grand in its idea, only consisted of one half-day time period. The biggest concern about this study is that the strategy instruction consisted of only three 45-minute lessons over three days. Furthermore, it is unclear what the teachers were taught during their professional development time and what was taught during the once-weekly lessons. Findings also included that while content instruction displays significant growth over both strategy instruction and basal instruction, all three methods of reading instruction displayed reading growth indicating there is a common thread between them. McKeown et al. suggested that by having students devote time to discussing their reading content and strategies, their reading achievement scores may increase showing growth in both their reading comprehension and reading identification skills. Along with this important finding, McKeown et al. stressed the value of strategy instruction along with discussing the concepts inside the text being read.

The National Reading Panel (2000) described multiple strategy instruction as being flexible and interactive with text giving detail to the teaching of multiple reading strategies in the classroom. Multiple reading strategies instruction allows students to be
active, independent readers (Brown, 2008). Strategies are not taught or practiced independently but “blended into meaning-oriented text discussions” (Brown, 2008, p. 539). The above listed reading studies were designed to teach students to use multiple strategies in order to evaluate, plan, and regulate as they build awareness of their processing (McKeown et al., 2009), and by doing so have deep-thinking text discussions.

A few methods of teaching reading strategies to students include using the support from text structures, the use of scaffolding, the gradual release of responsibility, modeling, and the use of think-alouds.

**Text Structures**

Text structures can provide direct support for individual readers. Textual scaffolding may be found in the organization of a text (i.e., predictable children's book) (Brown, 2000) or in more explicitly stated inferences (Graves, Slater, Roen, Redd-Boyd, Furniss, & Hazeltine, 1988). It also might include non-fiction text features such as boldfaced, key vocabulary, and the inclusion of headings, introductions, or summaries. These scaffolding techniques make the selection more reader friendly by reducing the cognitive demands on the reader (Van Den Broek & Kremer, 2000).

Raphael and Kirschner (1985) found that teaching students, over a three-week period, explicitly how to use text structures significantly improved their reading and writing scores. By comparing the control group (N= 23) and treatment group (N= 22), the researchers found that after teaching the compare-contrast text structure to sixth-grade students, their writing of expository text increased. Not only can teaching of text features help students, but it also provides a support for students to use while trying to understand what is being read.
Scaffolding

Not only does the teacher need to teach students how to comprehend by using such strategies as: text features, prediction, connecting, summarizing, questioning, visualizing, etc., reading instruction must take place through additional support. Through this support, teachers scaffold to provide students with the amount of guidance they need. Scaffolding can occur through gradual release of the responsibility, from the teacher to the student, in which students demonstrate their understanding of the strategies and in turn their new knowledge (Baker, 2002). The term gradual release of responsibility came from the work of Pearson & Gallagher (1983). In this model, teachers move from assuming all the responsibility (i.e., modeling or demonstrating a strategy), to allowing students to assume some responsibility while the teacher is there to guide them through the learning process (i.e., scaffolding). Eventually all the responsibility is given to the student (i.e., independent strategy use). Students are pushed to the next reading level as the support that they receive guides them through more difficult texts and reading tasks (Oczkus, 2010).

The assistance and guidance given to the students by the teacher in the guided practice portion is called scaffolding. Scaffolding (Bruner, 1986) is a term that refers to the support, guidance, and instruction provided by an adult or knowledgeable peer that helps students move from where they are cognitively to a higher level. The concept is tied to Vygotsky's (1978) notion of the zone of proximal development (i.e., the difference between what a child can do independently and what he or she can do with help). Scaffolding, then, is that support or help that learners need to progress from where they are to the next level. It may come in many forms, including prompts, reminders,
modeling, and answers to questions. Students should never struggle to the point of failure or frustration during any reading activity (Rasiniski & Padak, 2004).

Scaffolding is needed when learning new reading strategies. During the beginning of scaffolding a lesson, a good reader (i.e., teacher) presents new strategies and guides the learner through the selection. This modeling shows the learner how the targeted strategy is applied (Rasiniski & Padak, 2004). Thus learners are reminded of the strategies and why they are important. These scaffolding techniques provide learners with the models, prompts, and reminders needed to develop good reading habits.

Once the strategies are modeled, it is important for learners to practice the strategies with some monitoring from the teacher. Teachers can gradually release responsibility for strategy use so that students have sufficient support for using comprehension strategies before they are expected to apply them independently (Wilhelm, 2001). It is important to note that learners need to try to use the strategies independently (Roehler & Duffy, 1984). Thereafter, students can use the strategies throughout their reading at-school or at-home without teacher support.

Struggling readers require support for many years; however, different types of support, or scaffolding, are needed at different times in a child’s reading development (Brownell, 2000). Strategies should be introduced one to two at a time, gradually increasing in number for students that are new to strategy instruction (Brownell, 2000), including gradually introducing and allowing students to use multiple strategies at-a-time. Scaffolding allows for this process to take place. In order to know that strategy use is being done independently, self-reporting of comprehension strategy use, commonly called thinking-aloud, may be combined with challenging text, to produce an accurate
picture of readers’ strategy processes.

Modeling

In order for students to become successful comprehenders, “Teachers must make them aware that reading is active, that reading is thinking, and that good readers are always thinking while reading” (Cartwright, 2010, p. 126), giving light to the idea of modeling. Modeling is defined as demonstrating a particular pattern with the learner through imitation (Allen & Ryan, 1969). Modeling offers children the opportunity to watch the process unfold before their eyes. Teachers can accomplish this during many content areas throughout the day, including modeling reading comprehension strategies. Closs (2010) implied that modeling is an effective reading-teaching tool by stating, “Teachers need to provide explicit instruction in using reading strategies. It is imperative that teachers ‘show not tell’ how skillful readers read” (p. 2).

Even though modeling, as a comprehension strategy, is an effective approach, it is much more effective to use an explicit explanation along with modeling of the strategy (Duffy, Roehler, Sivan, Rackliffe, Book, Meloth et al., 1987). Teachers need to model the learning task exactly as students would be asked to perform it (Boyles, 2001). By talking aloud, this method displays to students how the strategies work and how much they can know about a text before they begin to read word by word.

For some time, modeling has been an important component in improving reading competence (Greenwood, Delquadri, & Hall, 1989; Rosenshine & Meister, 1984; Stevens, Madden, Slavin, & Farnish, 1987). Vygotsky (1962) theorized that children learn through expert guidance provided by adults or by their peers. By allowing both teachers and classmates to provide approachable models for students to imitate, this
validates the use of a strategy. In addition to demonstrating the how to of the strategy, modeling also shows that the strategy can be mastered.

Once the strategies are modeled, it is important for learners to practice the strategies with some self-monitoring. Therefore, it is important for students to try to use the strategies independently (Roehler & Duffy, 1984). Metacognitive instruction, a research-based teaching method where the teacher allows students to think about one’s thinking processes on their own, demonstrates this idea.

**Metacognition**

To be strategic readers, students must think about their thinking processes alongside other reading attributes (i.e., meaning, decoding, strategy use). Metacognition, thinking about one’s thinking, leads to ultimately comprehending a text at a higher level of understanding. Metacognition is particularly relevant to comprehension. It is an integral component of reading comprehension, because students consciously think about and reflect on their comprehending of the story.

Metacognitive strategies allow individuals to monitor and assess their ongoing performance in understanding what is being read. For example, as a text is being read, the reader might think: “I don’t understand this. I might need to re-read this part.” Tracey and Morrow (2006) stated:

The concept of metacognition, when applied to the field of reading, contributes to a constructivist understanding of how reading comprehension occurs, as well as to a body of knowledge regarding instructional strategies that can be used to facilitate reading comprehension (p. 61).

Cross and Paris (1988) elaborated on Baker and Brown’s knowledge of cognition as declarative cognitive knowledge and procedural knowledge. They defined declarative cognitive knowledge as a reader’s awareness of the factors that might affect the comprehension of text. Procedural knowledge entails awareness and management of cognition, including knowledge of strategies used (Cross & Paris, 1988).

Baker and Brown (1984) discussed regulation of cognition. When readers regulate their own thinking they are using the self-regulation strategy. The evolution of the different aspects of readers’ self-regulation, strategy behavior that leads to the comprehension of text, may be especially important for struggling readers (Paris & Flukes, 2005). Many reading programs include the development of readers who are self-regulated; these programs help readers to become strategy users who move through text on their own, use word-attack strategies on their own, monitor their own reading and comprehension, and use writing strategies (from the finger-spacing strategy to rereading their own text to see if it makes sense) (Bohn, Roehrig, & Pressley, 2004).

The goal of metacognition instruction is meant to guide students of their own thinking during the reading process (Tracey & Morrow, 2006). Furthermore, reading instruction must accompany direct instruction of metacognition skills, including the knowledge of reading comprehension strategies. Similarly, Schraw et al. (2006) and Schraw (1998) urged educators to provide explicit instruction in cognitive and metacognitive strategies. Scholars emphasized that such strategy training needs to stress
how to use strategies, when to use them, and why they are beneficial (e.g., Afflerbach et al., 2008; Schraw, 1998). Metacognitive strategies can be specified as self-monitoring and regulating activities that focus on the product and the process of reading, support readers' awareness of comprehension, and assist in the selection of cognitive strategies as a function of text difficulty, situational constraints, and readers’ own cognitive abilities (Lories, Dardenne, & Yzerbyt, 1998; Van Den Broek & Kremer, 2000; Weisberg, 1988).

Several researchers believe that metacognition is teachable (Dignath et al., 2008; Cross & Paris, 1988). The most effective type of instruction emphasized a combination of knowledge about strategies, as well as specific benefits of those strategies (mean effect size = 0.95) (Cross & Paris, 1988). Haller et al. (1988) conducted a meta-analysis of 20 studies where they were able to examine more than 1,500 students and the effects of metacognitive instruction on students’ metacognition during reading. They computed a mean effect size of 0.71, which suggested that instruction in metacognition can have significant effects on children’s reading comprehension. A specific teaching method of metacognition is using think-alouds.

**Think-Alouds**

An excerpt taken from one of the most popular educational texts in America, *Mosaic of Thought*,

Proficient readers spontaneously and purposefully create mental images while and after they read. The images emerge from all five senses, as well as the emotions, and are anchored in a reader's prior knowledge. ... Proficient readers use images to draw conclusions, to create distinct and unique interpretations of the text, to recall details significant to the text, and to recall a text after it has been read (Keene &
By modeling the strategies aloud and talking through the processes of previewing, predicting, skimming, scanning, and paraphrasing, it allows the student to understand how a strategy is used by a good reader (i.e., teacher). A specific form of modeling is a think-aloud. The teacher or the student can perform think-alouds; readers are asked simply to vocalize their thoughts, “in the form of inner speech” (Ericsson & Simon, 1984, p. 80). Think-alouds show students what a good reader is thinking while reading, which provides scaffolding toward developing good reading comprehension skills. This technique allows students to understand more clearly the steps needed to comprehend text (Oczkus, 2010).

Skillful readers unconsciously use a range of strategies to make meaning from text. Think-alouds involve modeling these strategies by thinking aloud while reading and responding to a text. By making explicit for students what is implicit for more expert readers, it becomes possible for students develop and apply these strategies themselves.

Through think-alouds, teachers model their thought processes (Davey, 1983; Olshavsky, 1976–77), showing students what is going on in their (the teacher’s) mind while reading. In essence, teachers can directly explain what reading strategies are and why readers use them (Pressley & McCormick, 1995; Villaume & Brabham, 2003). Through the direct explanation, educators help students think metacognitively about strategies, considering when and where to apply each strategy, how to use them, and the impact they can have (Pardo, 2004). Roehler and Duffy (1989) discuss that after teachers introduce comprehension strategies through the use of think-alouds, they need to give students the opportunities to practice the strategies in context of real reading.
Thinking aloud (i.e., talking about what you are doing when you are doing it) reveals a good reader's internal process and is an important component in successful strategy-teaching programs (Pressley, 2000). Besides teaching about the strategy, the peer model also demonstrates how to think aloud about a reading task. According to Barell (1991), encouraging this kind of thinking aloud, or self-talk, is beneficial:

Saying things to ourselves, such as “What is my problem? How will I get out of it? What can I try? What or who can help me? Where have I been in a situation like this before? I can solve this problem if I really persist at it.” All these statements will eventually be internalized and become part of a repertoire for confronting difficult situations (p. 14).

Thinking aloud about reading also serves to enhance students' comprehension-monitoring abilities (Baumann & Jones, 1993) and can be a tool in encouraging readers to make connections with other things they have read (Lenski, 1998). These are the kinds of metacognitive behaviors necessary for reading independence. If children are to develop into mature readers, they need time to elaborate, evaluate, and analyze; this often happens during group discussion, where models are provided by the teacher and by expert readers.

Think-alouds are an effective tool not only for typical readers but for the struggling reader as well. Over the past decade much practitioner literature has emerged in which authors advocate thinking aloud to improve comprehension and strategy use of readers who struggle (e.g. Smith, 2006; Wilhelm, 2001). By having think-alouds embedded into a reading comprehension instructional program, readers of all abilities are able to hear what good readers do while reading.
Not the Typical Average Reader

Students have many challenges facing their learning. There are multiple risk-factors involved when teaching struggling readers. These factors can include, but are not limited to: attendance problems, behavioral issues, low academic achievement, low socioeconomic status, mobility issues, retention, and Attention Deficit Hyperactivity Disorder (ADHD) (Brooks, 1997; Slavin, 1989). Struggling readers may come from underprivileged literacy environments, leading to fewer oral language and emergent literacy skills, and limited prior knowledge (Brownell, 2000; Brooks, 1997). Other challenges that some struggling readers face can include: a poor reading rate, insufficient word-attack strategies, poor fluency, and the inability to comprehend the text; a struggling reader must overcome these obstacles in order to become the successful reader who employs all the characteristics of a good reader.

Pressley and Wharton-McDonald (1997) discussed readers who struggle. They examined readers who can decode words but cannot comprehend (i.e., “word callers”). Explicit teaching of reading strategies did help these readers overcome their reading hurdles.

“Word Callers”

Researchers have identified students who cannot comprehend text effectively in spite of successful decoding (Caccamise & Snyder, 2005; Duke, Pressley & Hilden, 2004; Pressley & Wharton-McDonald, 1997); they are also known as “word callers.” Contrary to what one might think, this type of reader is not a completely new topic of discussion. McKee, in 1941, discussed such a reader,
Teachers are becoming convinced that the students in our schools cannot read their textbooks well..... known as word-readers.... Those students have learned that apparently there is such a thing as reading without understanding and that we, as teachers, are willing to accept a student’s manipulation and reproduction of the language symbols of a meaning as evidence of his possession of that meaning (p. 97).

There has been research documenting that some children could read words, but not gather the overall meaning of the text (Brown & Smiley, 1977; Wiener & Cromer, 1967). Dolch (1960) called this reading, “meaningless reading” (p. 150). Other researchers called these students “poor comprehenders” (e.g., see Cain & Oakhill, 2007; Nation, 2005; Oakhill, 1993); however, the common theme is that these students are at-risk and need comprehension strategies to be able to understand the text at-hand.

We have known of the existence of “word caller” students for over four decades (Dolch, 1960). However these students “have not been widely studied” (Aaron et al., 1999), even though teachers have recognized these students in their classrooms. The following are studies that have been done and what still needs to be considered in regards to reading comprehension strategies.

In order to guide students who are considered “word callers,” teachers need to explicitly teach a combination of reading strategies. Practice may help students develop understanding, and when the reading does not go smoothly, strategic intervention is required (Afflerbach et al., 2008; McKee, 1941). “Word callers” have a difficult time understanding text by themselves. They need extra support and guidance from an expert reader. “Word callers” need extra “heavy-duty scaffolding” (Cartwright, 2012).
Teachers and peers who are good readers can help provide this through modeling, think-alouds, and supporting text features.

Diehl (2005) completed an intervention program that was designed for students who were classified as “word callers.” The study was set in a small rural school in Western Maryland. The intervention helped the children attend to metacognition, addressing comprehension strategies, and fostering literature discussions. Qualitative observation research was completed and positive changes in behavior, comprehension performance, and reading attitudes were all seen.

Research suggests that students with Autism Spectrum Disorder (ASD) have characteristics of “word callers.” Whalon and Hart completed a recent study in 2011 involving students with ASD and an intervention that aimed at helping these students gain the necessary comprehension strategies that they were lacking. This study illustrated how to implement a specific comprehension strategy (i.e., question-and-answer relationships) which was found responsive in meeting the learning needs of students with ASD.

Recently, teachers have also identified students with high accuracy and low comprehension, known as “word callers” (Meisinger et al., 2010). In addition, the researchers found that the teachers were more focused on the child’s ability to read words rather than if the child understood the text. Meisinger et al. (2009) investigated the prevalence of “word callers” in elementary settings, the accuracy of teacher perceptions of “word callers,” and teachers’ conceptualization of reading fluency and comprehension. The study consisted of multiple grade levels and multiple teachers. The teachers first identified the students in their classroom who would be considered “word callers.” The
findings suggested that “word callers” are more prevalent in later elementary years.

Furthermore, the data suggested that there was over-nomination of “word callers” being done at all grade levels. The data suggested that the term, “word callers,” must be used sparingly and that one should be cautious on who is identified as such.

Good readers are able to move their thinking from one task to another effortlessly. During the reading of the same sentence, good readers can attack a word, predict what will happen, and question the characters’ motives all at the same time. This is considered flexible thinking, the ability to think about multiple things at once. More important, at-risk readers are about half as flexible as their typically developing peers (Cartwright, 2008), and students who have high accuracy and low comprehension, known as “word-callers”, are less than half as flexible as good comprehenders (Cartwright & Coppage, 2009). Flexible thinking can be taught to poor comprehenders, resulting in an increase in reading comprehension (Cartwright 2002, 2006; Cartwright, Clause, and Schmidt 2007).

What Reading Comprehension Should Be Going On Now In Classrooms!

While this process of reading comprehension usually entails understanding textbook assignments, reading comprehension skills also may affect one's interpretation of directions, menus, homework assignments and completion of job applications or questionnaires. Neuhaus, Roldan, Boulware-Goeden, and Swank (2006) found the following:

One consequence of living in the information age is that for the first time in history the average person has access to an unprecedented amount of information and the capability to communicate with people worldwide. However, much of the available information is stored in written form, so
one’s ability to read well is paramount importance to successfully adapt (p. 37).

The present literate society of communication through technology and multiple media evokes a need to support all children in constructing meaning from these challenging texts (National Reading Panel, 2000). Improved reading comprehension skills can positively impact many facets of student academic and life-skill performance. To comprehend text, a reader must apply a variety of reading skills and strategies. In today’s society, text has become interwoven with gaining knowledge in a variety of forms, such as: emails, newsletters, Internet websites, musical lyrics, and textbooks online. Readers must decipher what information to gather from the text. Teachers must help directly with these processes by teaching and modeling reading skills and strategies.

Reading comprehension research has shown that teaching reading comprehension strategies directly to students and explicitly will raise achievement scores (Duke & Pearson, 2002; Duke, Pressley, & Hilden, 2004). Guided practice needs to build comprehension skills of struggling readers through the use of explicit connections to the text (Hollenbeck, 2011).

In addition to explicitly teaching reading comprehension strategies, teachers need to know how to teach readers to be critical readers of new text. Reading has become drastically more complex over the past decade. A reader must place much effort into multi-task reading (i.e., cognitive flexibility), which is reading many sources and advertisements at one time. One reading avenue where this is abundant is in technology. With technology, writers are able to make reading a more complex task. Readers now
have to become not only a reader for meaning, but also a multi-task reader for complex meaning.

**Summary**

Recently there have been differences found in good and poor readers with respect to strategy use and degree or quality of strategy use appears to be related to comprehension achievement (Duke, Pressley, & Hilden, 2004). The relationship between comprehension strategy use and comprehension achievement appears to be related through improving comprehension (Duke & Pearson, 2002; National Reading Panel, 2000).

Duke & Carlisle (2011) stated that teachers cannot know what meaning a reader constructed until the reader says or does something; thus asserting that it is difficult to assess comprehension and the comprehension strategies learned or known. The process is difficult, however not impossible. By asking questions, having students think-aloud their strategies used, and demonstrating their knowledge of the text, a teacher can assess what the child comprehends.

Understanding the past helps teachers to understand and predict the future. By knowing what has happened in the past, in regard to reading comprehension instruction, will help reading teachers problem-solve and know which reading instruction to implement. Comprehension is too important for us to neglect the practices that research has shown to be effective (Duke & Reynolds, 2005).

This literature asks the question, why are “word callers” recalling words but not able to see the big picture of reading, which is understanding? It also asks the questions, what should educators do to help this struggling reader? The research presented in this
chapter indicated that strategy instruction can have significant benefits for students. The current study explored the strategic awareness and control of fifth-grade “word callers” using a research-based intervention.
CHAPTER III: PROCEDURES

The purpose of this study was to determine the effects of an intervention to guide fifth-grade “word callers” use of five research-based reading comprehension strategies (i.e., predicting, questioning, imagery, clarifying and summarizing). This helped answer the research question, what are the effects of Reciprocal Teaching with predicting, questioning, imagery, clarifying and summarizing on fifth-grade “word callers” reading comprehension achievement. “Word callers” are students who are successful in the area of accuracy yet they do not comprehend the text at a higher-comprehension level (Diehl, 2005; Hamilton & Shinn, 2003; Meisinger et al., 2010). Helping “word callers” make the shift from decoding-focused reading to meaning-focused reading was this research studies goal.

The researcher was the one who taught and guided the experimental groups in Reciprocal Teaching plus imagery instruction. The control groups differed in the teachers who instructed, but were all the same in that they received additional tutoring in reading comprehension instruction after-school. This study used the pretest/interim/posttest design to assess the effectiveness of the reading instruction the students received after-school, twice weekly. Within this chapter, the researcher describes the procedures taken to develop the study and the analysis that describe the effects of small-group instruction using carefully graded passages, focusing on reading comprehension scores with upper-elementary “word caller” students.
Method

Students in the experimental group received 12 weeks of 50 minute, twice weekly, reading instruction, focusing on using multiple reading strategies to help their comprehension of text. The reading instruction provided is a validated and reliable method of practice, called Reciprocal Teaching.

Reciprocal Teaching

Reciprocal Teaching (RT) Intervention is a well-known reading practice. First developed by Annmarie Palinscar and Ann Brown (1984), Reciprocal Teaching is an instructional procedure designed for teaching students to use multiple comprehension strategies flexibly and interactively to improve their comprehension of text. The general concept of Reciprocal Teaching is that teachers first model the strategies, and then invite students to apply the strategies themselves. Teachers gradually fade their levels of instructional support as students assume control of the strategies. As discussed in Chapter two, teachers are using much scaffolding during this time, as well as utilizing the gradual release of responsibility method.

Reciprocal Teaching has been researched based with multiple populations. It is a framework for teaching the skills necessary for good comprehension. This intervention is dialogue based; the teacher acts as the facilitator, modeling the use of four key strategies to the students. Gradually, with teacher support, students’ confidence and competency increases and teacher input decreases. The eventual goal is that the students will be able to work independently using the strategies modeled in previous lessons. The four key strategies that the original Reciprocal Teaching method includes are predicting, questioning, clarifying, and summarizing (Figure 1 defines these strategies).
Research has stated that using multiple reading strategies embedded within a highly interactive, collaborative setting (i.e., Reciprocal Teaching), is an effective method to teaching a set of reading comprehension strategies (Pearson & Duke, 2002; Pressley, 2002; Reutzel et al., 2005). Earlier studies similar to Reciprocal Teaching were completed by Manzo (1969) and Helfeldt and Lalik (1976), which were in the Reciprocal Questioning tradition. These studies taught only a single strategy, question generation, and did not provide the support, the scaffold instruction, and the dialogue that occurs in RT.

In their original study, Palincsar and Brown (1984) presented results of a pilot, and two group experimental studies of RT. In the first experimental study, Palincsar and
Brown (1984) investigated the change RT made in the reading comprehension of expository text for seventh-graders with adequate decoding but poor comprehension (i.e., “word callers”). Comparison groups participated in a “locating information” intervention, regular classroom instruction or unmet control. Participants in the RT group, who met in pairs with an instructor, received 20 lessons over a four-week period, reading expository passages averaging 1,500 words each. The RT students became progressively more proficient at implementing the cognitive tactics taught to them. During daily reading assessments following instruction, RT students made striking improvements in their ability to answer comprehension questions on the passages read. RT readers improved abilities to summarize, detect anomalous information in text, and answer comprehension questions significantly improved. Summaries given by students involved in reciprocal teaching intervention contained more main ideas and fewer incorrect or incomplete details. Additionally, the six students in the RT group significantly improved from pre-to post-test in their ability to (a) answer comprehension questions and (b) identify text incongruities. These changes were maintained over time. On standardized tests of reading achievement (i.e. the Gates MacGinitie), four of six RT students made substantial gains averaging 15-months growth. Control students evidenced no corresponding change. Like Loxterman et al. (1994), Palincsar and Brown observed that their intervention accelerated the progress of the lower-achieving readers. Readers with and at risk for disabilities in the RT group improved to grade level (Palincsar & Brown, 1984), whereas marginalized readers in the other two groups did not.

In Study 2 of their original research, Palincsar and Brown (1984) moved the RT intervention into the classroom (i.e., resource room instruction) with their regular teacher
in the facilitator’s role. Intervention materials and procedures were identical to Study 1. Palincsar and Brown found the same trends for improved reading comprehension for fifth, seventh, and eighth graders with adequate decoding but poor comprehension who received training in RT. Students in the RT condition improved their ability to summarize, answer comprehension questions, and state main ideas. The quality of their text-centered discourse improved. Palincsar and Brown described the discourse interactions scaffolded by the teacher. In early lessons, the teacher tended to retain a pivotal role in RT, with students interacting with him/her rather than with one another. By lesson 10, however, student-participants initiated and responded independent of the teachers’ guidance, acting as agents of their own learning, with teachers redirecting discourse only as needed.

Palincsar and Brown (1984) suggested that what students learned was not simply how to ask questions and summarize. Rather, the new strategies enabled and required the students to do the following: 1) perform deeper processing of what they read, 2) to engage in making sense of what they read, 3) to be aware of what material they did not understand, 4) to engage in additional searching when they encountered comprehension difficulties, and 5) it was the learning and practice of these processes that led to the improved comprehension. Again, Palincsar and Brown in 1986 duplicated their reciprocal teaching intervention, this time the intervention was just 15 days in length, during this time students’ reading increased from 30 to 80%. According to a follow-up study by Palinscar and Klenk (1991), students not only improved their comprehension skills immediately when involved in a reciprocal teaching program, but they also maintained improved comprehension skills when tested a year later.
Reciprocal Teaching is a research-based, evidence-based, best-teaching practice intervention. In 1994, Rosenshine and Meister examined multiple studies involving Reciprocal Teaching. They found that when experimenter-developed tests were used in the reciprocal teaching studies, the results were usually statistically significant and the average effect size was .88, which is very large. An effect size of .88 means that students who scored at the 50\textsuperscript{th} percentile in the experimental group would have scored at the 88\textsuperscript{th} percentile if they had been in the control group. When standardized tests were used the average effect size was .32. This result means that on the standardized tests, students who scored at the 50\textsuperscript{th} percentile in the experimental group would have scored at the 63\textsuperscript{rd} percentile if they had been in the control group.

As noted, asking questions has also been taught in traditional settings, without the Reciprocal Teaching addition. When experimenter-developed tests were used in these studies the results were also usually statistically significant and the average effect size was .89, again quite large. When standardized tests were used the average effect size was .34 (Rosenshine, Meister & Chapman, 1996). This result means that the same statistically significant results were obtained for teacher-led instruction, when only the question-asking strategy was taught using the reciprocal teaching format utilizing four cognitive strategies. These results suggested that the teaching of cognitive strategies is a useful instructional procedure for raising student achievement, and these strategies can be successfully taught in a traditional setting. However, a reciprocal teaching format may help guide students to use the strategies more effectively in collaboration with their peers.

More recently, readers with and at risk for disabilities in reading and with limited English proficiency have participated in studies of reciprocal teaching. Lubliner (2001)
pointed out that Reciprocal Teaching is an effective teaching technique that can improve on the kind of reading comprehension that is necessary not only for improved test scores but also for an information age that we as a society are in now. Lubliner also stated that Reciprocal Teaching can cultivate reading knowledge for children with reading disabilities, especially, by developing higher-order thinking skills and interacting intelligently with peers in the group. Fung et al. (2002) used reciprocal teaching with intermediate-level students in heterogeneous groups of students with and without limited English proficiency (LEP), and a range of reading abilities. Students with LEP participated in discussions of texts with embedded contradictions either in their first language or English. Fung et al. found significant improvements in reading comprehension for students in the reciprocal teaching group. In particular, the students, whose first language was Chinese, were invited to discuss passage content in either language and discussed greatly their comprehension of the story.

Setting and Participants

This study took place in three elementary schools located in three separate school districts in the mid-western United States. Twenty-one fifth-grade students (9 boys and 12 girls) consented to participate in the after-school reading intervention study.

School #1: Mark Elementary

Mark Elementary is located in rural mid-western United States. It serves 490 students in grades K-5. The largest percentage of the working population consists of citizens who are employed in the urban area, own their own business, or farm. The community is primarily Caucasian, Protestant, English-speaking, and native-born. In 2012, fifth-grade students received an 80% average in English/LA and 93% average in Math on the
ISTEP+, standards-based test. Seventeen percent of the school’s population is on free/reduced lunch. The school population is 84% Caucasian, 8% African-American, 4% Multi-racial, 2% Hispanic, and 1% Asian. The student population is classified as 1% English Language Learner. On average, each classroom has approximately 19 students in the room per teacher.

**School #2: Blake Elementary**

Blake Elementary is located in a suburban area in a mid-western state. It serves 587 students in grades K-5. The largest percentage of the working population consists of citizens who are employed in the urban area. In 2012, fifth-grade students received a 90% average in English/LA and 98% average in Math on the ISTEP+, standards-based test. Twenty-three percent of the school’s population is on free/reduced lunch. The school population is 84% Caucasian, 5% African-American, 3% Multi-racial, 6% Hispanic, and 1% Asian. The student population is classified as 5% English Language Learner. On average, each classroom has approximately 17 students in the room per teacher.

**School #3: Ryan Elementary**

Ryan Elementary is located in an urban area in one of the mid-western United States. It serves 840 students in grades K-6. The largest percentage of the working population consists of citizens who are employed in the urban area. In 2012, fifth-grade students received a 60% average in English/LA and 85% average in Math on the ISTEP+, standards-based test. Eighty-two percent of the school’s population is on free/reduced lunch. The school population is 58% Caucasian, 16% African-American, 7% Multi-racial, and 18% Hispanic. The student population is classified as 11% English Language
Learner. On average, each classroom has approximately 16 students in the room per teacher.

**Pilot School: Weston Elementary**

Weston Elementary is in a mid-western state. It serves 374 students in grades K-5. The largest percentage of the working population consists of citizens who are employed in the urban area. In 2012, fifth-grade students received an 86% average in English/LA and 86% average in Math on the ISTEP+, standards-based test. Forty-eight percent of the school’s population is on free/reduced lunch. The school population is 95% Caucasian, 2% Multi-racial, 2% Hispanic, and 1% Asian. The student population is classified as 2% English Language Learner. On average, each classroom has approximately 14 students in the room per teacher.

**Measuring Reading Comprehension Strategies**

In the current Handbook of Reading Research IV, Duke & Carlisle (2011) discussed the development of comprehending throughout a story.

We cannot know what meaning a reader constructed from a given passage or set of passages until that reader says or does something (summarizes, etc.), and even then we are only able to make inferences about the meaning the reader constructed (p. 201).

In order to make sense of the data collected from these assessments, teachers need to understand the reading comprehension process as a whole. It is difficult to assess comprehension and the comprehension strategies learned or known (Kintsch, 2005). “Comprehension cannot be measured because it is not a quantity of anything” (Smith, 1988, p. 53). It is difficult, but not impossible. Researchers suggest that reading
comprehension assessment should be multi-modal. It involves using multiple formats to assess reading comprehension. This can be answering open-ended questions, retelling, and answering a verbal-protocol on their strategy use (Pressley & Afflerbach, 1995). Teachers and researchers can accomplish this task by assessing children using a variety of informal and formal reading comprehension assessments. Informal assessments including surveys, think–aloud protocols, and examining self-reported data about comprehension strategy use. Self-reported data can add a great deal to our knowledge of students’ cognitive processing (Ericsson & Simon, 1980). Formal assessments including standardized testing, which examines comprehension achievement by asking questions and having the students recall information directly from the text read. The goal of assessment is to encourage accurate comprehension and thorough learning (Paris, 2002).

Measures

Initially, teachers were asked to gather parent consent forms of students they felt qualified for the study, using the who is a “word caller” handout (see Appendix A). All parent consent forms were obtained for participation in the study (see Appendix B). Afterwards, fifth-grade students who were nominated through teacher recommendations were assessed. One control and one treatment group were randomly selected in each school. The researcher went through the list of the student’s names one-by-one and placed them under one of the group headings; thus each student was randomly assigned to one of the groups. The experimental group received 50 minutes of intervention each day for two-days-a-week during the treatment period (see Appendix C for a sample of a lesson). Students in the control group continued to receive after-school tutoring as well (see Appendix D for a sample lesson from a control group teacher). However, they
received the reading instruction using the Core Curriculum only. This instruction for the control group contained 50 minutes of small-group time after school; teachers provided reading comprehension instruction. Fidelity checks were built into the project using both self-checklists (see Appendix D) and observer checklists (see Appendix E) for the control and experimental groups.

Assessments

A variety of assessments were collected by an array of assessors. These assessors included the researcher and one university faculty member, who had all been trained in the procedures and assessments given. The assessors completed the training prior to the day the assessments were given. A variety of assessments were completed at the beginning of January, middle of February, middle of March, and again at the end of April.

Researchers have found that by using an assortment of assessments, one can provide insight into different aspects of the same phenomenon (Palinscar & Brown, 1984; Valencia & Pearson, 1988). Pre-, interim, and post-testing were conducted using multiple assessments including Reading A-Z running records, oral fluency rater scale, metacognition survey, and a reflective interview protocol. On-going passage assessments were collected systematically throughout the study to allow for changes, in reading texts used; anecdotal notes and fidelity checklists were also gathered throughout the study to allow for data collection following the study. All assessment data was collected and recorded in an excel file. This student information was reported individually to the student, teacher, parents, and school principals at the end of the intervention (see Appendix F). Each assessment used in the study is described below.
Accuracy Assessment

Reading A-Z running record:

The Reading A-Z running record is an individually administered informal reading assessment. The student and teacher resources on readinga-z.com website have been developed to reflect the instructional practices and reading strategies that are best supported by research findings from a wide variety of sources. The resources also correspond to the findings of the Put Reading First federal initiative. Running records are research-based methods of assessment. Clay (2000) stated,

Running Records capture what the readers said and did while reading books or texts. Having taken the record teachers can review what happened immediately, leading to a teacher decision on the spot, or at a later time as they plan for next lessons. They can judge what the reader already knows, what the reader attended to, and what the reader overlooked (p. 67).

The running record assessment allows educational professionals to assess, interpret, and develop responsive reading instruction for their students. This assessment will help determine the child’s reading miscues and instructional reading level in both fluency and reading comprehension. The use of Reading A-Z results can identify the academic reading strengths and weaknesses of a student. This assessment along with the follow-up assessments, including a retell procedure and a comprehension question component, helped to determine students’ reading comprehension instruction level score.

Fluency Assessments

Oral Fluency Rater Scale:

The Oral Fluency Rater Scale, developed by Fountas and Pinnell (2006), is a six-
dimension fluency assessment that helps educational professionals to be more specific in their assessment of phrasing, pausing, appropriate word stress, intonation, reading rate, and integration. Integration is an overall assessment of the reader’s fluency, in general. Research states that fluency and comprehension are related, indicating that fluency may be a predictor of overall reading ability (Espin & Foegen, 1996; Miura-Wayman, Wallace, Ives-Wiley, Ticha, & Espin, 2007).

**Reading A-Z rate assessment:**

Another component of the running record is the rate assessment. A dimension of fluency is rate, how fast a student reads per minute. Rasinski (2012) asserted that fluency is the link to comprehension; one has to have both the rate and prosody of fluency in order to cross the barrier into deeper understanding of the text, which is comprehension. During the running record, the assessor times the student and counts the words per minute read.

**Comprehension Assessments**

**Reading A-Z retell and comprehension assessment:**

Research stated that retelling is one of the efficient strategies for finding out whether children understand what they are reading (Cooter, Flynt, & Cooter, 2007; Morrow, 1985). During the Reading A-Z assessment, the student reads a passage out-loud to the assessor. After the story is read, the assessor asks the student to retell the story out-loud. The retell is recorded. Afterwards, the assessor asks open-ended questions that were both literal and inferential. These are both used to calculate the student’s individual reading comprehension level score.

**On-Going Passage Assessments:**
Several on-going passage assessments were administered to assess student performance in comprehension skills. One assessment was given tri-weekly to help progress monitor the students’ comprehension skills. These assessments were developed based on what the students were reading during the intervention (i.e. non-fiction and fiction text was used). The student read the passage and wrote the answers to the questions pertaining to the passage, and the strategies they used during the reading independently. Questions pertaining to the passage contained predicting, questioning, clarifying, visualizing, and summarizing questions, all of which are strategies from Reciprocal Teaching including visualization.

Metacognition Assessments

Reflective Interview Protocol:

A reflective interview protocol (See Appendix G) was developed and used to examine the students’ metacognitive behavior while reading. This protocol helped assess students’ reading comprehension strategies that were being used during the reading process. These questions were utilized to examine the students’ ability to employ comprehension strategies and their knowledge of the strategies in general. Essentially, the protocol was used to reveal the student’s understanding of the text and how they resolved any reading comprehension difficulties (Paris & Flukes, 2005; Pressley & Afflerbach, 1995). A prompt included in the protocol was, “What were you doing to understand on the last story you read here?” and “What strategies were you using to understand?” This follow-up procedure on the reading by the examiner allowed the student to remember what strategy they did while reading and state that strategy aloud for the assessor. This protocol was completed after the student read the passage, and
answered the retelling and questionnaire components of the assessment.

**Metacognition Survey:**

A metacognition survey was used to examine the students’ metacognitive behavior while reading. The purpose of a metacognitive assessment is to examine how students select strategies to comprehend text and how well they regulate their understanding of text (Reutzel & Cooter, 2011). The Metacomprehension Strategy Index (MSI) developed by M.C. Schmitt (1990) is a 25-question, multiple-choice format used to indicate individual weakness in strategy use before, during, and after reading. It is a “valid means for measuring learners’ metacognitive comprehension for the purpose of designing instructional programs (interventions)” (Schmitt, 1990, p. 106). This was the final assessment given to the students during the assessment procedure time.

**Following the Study**

Post-testing was also completed after the treatment period is over. All data was coded and analyzed, by multiple reviewers to ensure validity of the test results. All assessment information was shared with teachers and parents following the study (see Appendix F).

**Procedures**

All “word caller” students in the study received 12 weeks of small-group instruction. The experimental group received reading comprehension strategy instruction, where as the control group received Common Core reading curriculum. As well, both groups received the narrative and expository text-focused intervention. The control group focused on the normal curriculum classroom routines for reading, while the
experimental group focused on comprehension strategy use while reading. The 12 weeks included 24 sessions; each session lasting 50 minutes in length. The sessions were twice weekly, for four months, directly after-school. Typically, “word caller” students do not respond to instruction in the same way as their peers (Cartwright, 2011); and thus, this research study provided them with small-group intervention with like-peers, providing an opportunity for specific instruction. Students make more reading achievement gains when reading instruction is matched precisely to individual student’s particular difficulty areas (Connor, Morrison, Fishman, Schatschneider, & Underwood, 2007; Connor, Piasta, Fishman, Glasney, Schatschneider, Crowe, et al., 2009). Thus, the intervention in this study focused on the student’s area of weakness in meaning-focused reading.

_Gathering “Word Callers”_

Teacher perceptions of “word callers” can be fairly inaccurate. Applegate, Applegate, and Modla (2009) studied 171 teacher-identified highly-fluent readers ranging in second-grade through tenth-grade. They examined the relationship between fluency and comprehension scores. They stated that one teacher described her “best reader” as “she’s my best reader, but just not a good comprehender” (p. 512). Since teacher-nominated “word callers” and are not always correct, this gave the researcher need to reassess after the nominations had been provided.

In a recent study by Meisinger, et al. (2009), the authors investigated the prevalence of “word callers” in elementary settings, the accuracy of teacher perceptions of “word-callers,” and teachers’ conceptualization of reading fluency and comprehension. The study consisted of multiple grade levels and multiple teachers. The findings suggested that “word callers” are more prevalent in later elementary years. In addition to
this statement, the data suggested that there was over-nomination of “word callers” being done at all grade levels. The data also suggested that the term “word callers” be used sparingly and that one should be cautious on who is identified as such. This again displays the need for assessment after the teacher nominations.

Meisinger et al. (2010) stated that teachers identified students with high accuracy and low comprehension, as “word callers.” A control group was also identified. The data showed that the “word callers” read fewer words per minute and earned significantly lower scores on the three comprehension measures. This study implies that teachers can identify “word callers” and thus need to intervene sooner. However, the data also showed that teachers inaccurately identified “word callers” from the control group, and that the teachers inaccurately predicted the “word callers” reading scores. This research study helped to reiterate that reading assessments need to be completed in order to properly identify a “word caller.”

With these studies in mind, teachers instructing fifth-grade students at the three schools involved in the study were all given a set criterion of what describes a “word caller” student (see Appendix A). Below the description of the “word caller,” the teachers were asked to nominate students whom they felt met the criteria. The researcher, took the teacher recommendations, collected parent consent forms and then reevaluated the teacher’s nominations through the use of multiple reading assessments (i.e., pre-testing data). Inter-rater reliability was established during this time as well through discussion about student data with fifth-grade teachers and another analyzer. The qualification of each student was discussed until an agreement was established of his or her placement. Through the discussion, one student was considered to not be a “word
caller” but a student with decoding problems, which was hindering his comprehension. Of the 36 students initially identified as students with difficulty in reading comprehension, 22 students qualified for the study, and were identified as “word caller” readers. This process as a whole made certain the students involved in the study were students who are “word callers,” readers who have high accuracy and low comprehension ability.

Participants

The potential number of student participants, for this study, was large with 223 students in total in the fifth-grade classrooms. The fifth-grade classrooms were housed in three different schools and three different school districts. Of those 223 students, 36 students were identified by participating fifth-grade teachers to be assessed. Both general education and special education students participated and 22 of the 36 students qualified for the study across the three schools. Once the first after-school session was concluded, one student decided not to participate in the intervention, thus leaving 21 students total in the study. Both the mother and the student felt uncomfortable with the discussion format of the sessions, because the student was shy. As a result, 10 students were in the control group while 11 students were in the experimental intervention setting across three schools. Table 1 details the distribution of the students among the three schools.

Table 1: The distribution of the “word callers” among the three participating schools

<table>
<thead>
<tr>
<th>Student</th>
<th>School</th>
<th>Control (1) vs. Experimental (2)</th>
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</thead>
<tbody>
<tr>
<td>1*</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
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<td>2</td>
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<td>4</td>
<td>1</td>
<td>1</td>
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</table>
Of the 21 students in the study, 19 students were general education students, and two students (10.5%) were identified as taking special education classes for reading and math. One student (.05%) was on a 504 plan for disrupting behavior in the classroom.

The participating students’ ages at the beginning of the study in January ranged from 10 to 11. Thirteen students were Caucasian (62%), and eight students were African-American (38%). All students (100%) spoke English at home.

At the beginning of the study, three of the total 21 students who participated in the study were lower than the other 18 poor comprehenders. For example, one student was three-and-a-half years behind in comprehension compared to their fluency ability, when the average of the other 18 “word callers” was one-and-a-half years behind. As well, one student was two-and-a-half years behind in their comprehension achievement.

The experimental group was led in each of the three schools by the researcher. Different teachers led each control group. A fifth-grade teacher who taught for 22 years...
led the control group in school #1. A fourth-grade teacher who taught for 11 years in the same district led the control group in school #2. On Tuesdays, the control group in school #3 was led by two student teachers and on Thursdays, a professor in an elementary education department at a local university led the group.

*The Reciprocal Teaching Intervention*

The researcher provided the instruction. In a review of the Reciprocal Teaching research, no differences were detected in regards to if the experimenter or the current teacher to the students taught the intervention; studies were equally effective whether an experimenter or a teacher provided the instruction (Rosenshine & Meister, 1994). All students were taught after-school in a quiet classroom. This provided the students with a distraction-free area where they could stay on-task and focus on reading comprehension.

Students read a mixture of both expository and narrative texts. Narrative text includes fictional stories and complex character plots. Whereas, expository texts include trade books and textbooks (Dreher & Voelker, 2004). In this study, adding both types of text controlled for text-effects. As well, research shows that a variety of texts are important for a reader to read throughout a school day (Cullihan, 2000; Gay, Mills, & Airasian, 2009). This is in contrast to the Rosenshine and Meister review of the literature, in 1994, where all 16 Reciprocal Teaching studies that were examined used expository material during the reciprocal teaching dialogues. The National Reading Panel (2000) suggested that connecting the instruction of comprehension strategies to learning information in content areas may be an efficient approach. For the purpose of this study narrative and expository terminology will be used throughout the paper.
The National Reading Panel (2000) supported scientific researched-based instruction for the classroom including comprehension monitoring, cooperative learning, graphic organizers, and multiple-strategy teaching (i.e., questions answering and generating, summarization). Students, in this study, used all of these empirical researched activities listed throughout the intervention.

Rosenshine & Meister in their review of the literature (1994) found no relationship “between the number of strategies taught and student achievement; 16 studies obtained significant results both when the investigators taught the four strategies identified by Palincsar and Brown, and when they used 2, 3, or 10 strategies.” Therefore, the addition of visualization, a fifth strategy, did not affect this study.

Inter-Rater Reliability

The meta-analysis of Rosenshine and Meister (1994), reviewed 16 Reciprocal Teaching studies on readers in third-grade through seventh-grade. Rosenshine & Meister found that of the 16 studies reviewed there was a common problem among them all, lack of observation and evaluation of instruction. They stated, “This is a common problem among studies in which cognitive strategies are taught. The problem is magnified in the case of reciprocal teaching because the dialogue is a critical variable in the instructional procedure.” Therefore, reliability must be tested during open-ended protocols (Gay, Mills, & Airasian, 2009), to determine the accuracy of the protocol, which helps the validity of the study. The researcher determined that a pilot study would help with this concern.
Pilot Study: Checking the fidelity of the procedures

The following information pertains directly to the pilot study completed a month before the intervention began. The purpose of the pilot study was to check the methods and procedures for conducting the intervention. It included four weeks of 13, 50-minute intervention instruction days. Pre-and post-testing was completed prior to the first after-school meeting date and after the study was concluded. A qualified educational state analyzer, working at a local university, collected observational data twice during the pilot study to establish inter-rater reliability, and she ensured that the reciprocal teaching method was being utilized accurately. Eight students participated in the experimental group. The pilot study did not have a control group.

As a result of the pilot study, the following revisions were made to the dissertation study. During the assessment process, the researcher learned that some questions that were asked during the reflective interview protocol did not elicit answers from the students that would answer the research questions. For example, an initial question that was asked was, “I noticed you looked up with your eyes during the retelling; please explain why.” One student responded with, “I was trying to think what happened in the story.” Therefore, changes were made to the questions. New questions were formulated to provide opportunities for students to respond with useful information to the research questions. These questions were then asked to the students to validate their effectiveness. For example, a new question that was asked was, “What were you doing to understand on the last story you read here?” A student responded with, “I was trying to picture was what going on.” The reading level assessment procedures were also simplified. At first, the researcher attempted to assess the student using every level; this
process took much time. Therefore, the process was simplified by focusing on identifying the independent, instructional, and frustrational level. The materials (i.e., text, graphic organizers, in-depth discussion, and visuals) worked well. It was noted that the students were thoroughly engaged in learning about new strategies through the group discussions.

*Intervention Study: Checking the fidelity of the results of the study*

The trained observer collected observational data two times during the intervention of all control teachers participating and the experimental teacher. Afterwards, the observational checklists were viewed and analyzed to check for fidelity.

*Analysis*

The researcher organized the data first in an excel file, and then used SPSS to analyze the pre, interim, and post-testing data. The researcher then ran multiple repeated measures ANOVA analyses and a Univariate Analysis of Covariance (refer to Table 2).

<table>
<thead>
<tr>
<th>Research Questions:</th>
<th>Dependent Measures:</th>
<th>Analyses:</th>
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<tbody>
<tr>
<td>1) What are the effects of Reciprocal Teaching with predictions, imagery, questioning, clarifying, and summarizing on fifth-grade “word callers” reading comprehension achievement?</td>
<td>Reading A-Z Reading Instructional Level Score; this is a calculated score using the student’s retell and questionnaire answers.</td>
<td>Repeated Measures ANOVA (pre, interim, and post-testing data) (Reading Score- Dependent) (Time, within subjects independent. Group/Intervention, between subjects independent.)</td>
</tr>
<tr>
<td>2) To what extent will Reciprocal</td>
<td>Metacognition Survey</td>
<td>Repeated Measure ANOVA</td>
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</tbody>
</table>
In addition, observational data (i.e., running records, reflective interview protocol, and anecdotal notes) were collected and used to explore the students’ responses, which helped to answer the research questions two and three. The researcher saw a benefit in using a mixed-method approach; this study focused on collecting, analyzing, and using multiple forms of data in a single study. The purpose of a mixed-methods approach is to “build synergy and strength that exists between quantitative and descriptive research methods to understand a phenomenon more fully that is possible using either study alone” (Mills, 2011).

The quantitative data comparisons were chosen due to the multiple areas of measurement assessed. The Reading A-Z reading comprehension level contains

<table>
<thead>
<tr>
<th>Question</th>
<th>Methodology</th>
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<tr>
<td>3) To what extent will Reciprocal Teaching affect fifth-grade “word callers” knowledge of reading comprehension strategies?</td>
<td>Reflective Interview Protocol</td>
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<td></td>
<td>Qualitative Theme Analysis</td>
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<tr>
<td>4) To what extent will Reciprocal Teaching affect fifth-grade “word callers” overall fluency scores as compared to their reading comprehension achievement scores?</td>
<td>Oral Fluency Rater Scale: Integration Score and Reading A-Z Reading Comprehension Level</td>
</tr>
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<tr>
<th>Teaching affect fifth-grade “word callers” ability to apply the use of reading comprehension strategies while reading?</th>
<th>Score</th>
<th>(pre and post-testing data)</th>
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<tr>
<td></td>
<td>Reflective Interview Protocol</td>
<td>(Survey Score- Dependent)</td>
</tr>
<tr>
<td></td>
<td>Qualitative Theme Analysis</td>
<td>(Time, within subjects independent. Group/Intervention, between subjects independent.)</td>
</tr>
</tbody>
</table>
information about the student’s reading accuracy, rate, retell, and comprehension abilities. The researcher converted the student’s Reading A-Z reading comprehension level to a numerical score for data analyses. Table 3 shows the individual student reading comprehension level and the score given to that level.

<table>
<thead>
<tr>
<th>Student</th>
<th>January Pre-test</th>
<th>March Interim test</th>
<th>April Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>D</td>
<td>N</td>
<td>Q</td>
</tr>
<tr>
<td>2</td>
<td>V</td>
<td>W</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>S</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>4</td>
<td>V</td>
<td>V</td>
<td>X</td>
</tr>
<tr>
<td>5*</td>
<td>R</td>
<td>S</td>
<td>V</td>
</tr>
<tr>
<td>6</td>
<td>V</td>
<td>W</td>
<td>X</td>
</tr>
<tr>
<td>7</td>
<td>V</td>
<td>W</td>
<td>Y</td>
</tr>
<tr>
<td>8</td>
<td>R</td>
<td>S</td>
<td>Y</td>
</tr>
<tr>
<td>9</td>
<td>V</td>
<td>W</td>
<td>Y</td>
</tr>
<tr>
<td>10</td>
<td>R</td>
<td>S</td>
<td>X</td>
</tr>
<tr>
<td>11</td>
<td>V</td>
<td>W</td>
<td>Z</td>
</tr>
<tr>
<td>12</td>
<td>V</td>
<td>V</td>
<td>Z</td>
</tr>
<tr>
<td>13</td>
<td>S</td>
<td>T</td>
<td>X</td>
</tr>
<tr>
<td>14</td>
<td>V</td>
<td>X</td>
<td>Z</td>
</tr>
<tr>
<td>15</td>
<td>R</td>
<td>S</td>
<td>U</td>
</tr>
<tr>
<td>16</td>
<td>V</td>
<td>X</td>
<td>Z</td>
</tr>
<tr>
<td>17</td>
<td>P</td>
<td>Q</td>
<td>T</td>
</tr>
<tr>
<td>18</td>
<td>V</td>
<td>S</td>
<td>Y</td>
</tr>
<tr>
<td>19</td>
<td>N</td>
<td>O</td>
<td>S</td>
</tr>
<tr>
<td>20</td>
<td>14</td>
<td>15</td>
<td>19</td>
</tr>
</tbody>
</table>
While the Oral Fluency Rater Scale assesses a student on overall fluency integration, it also assesses phrasing, pausing, appropriate word stress, intonation, and reading rate. Table 2 describes the analysis that uses the fluency integration score.

To address the on-going and recursive descriptive analyses, a global examination of the students’ responses was conducted in the following steps to help answer the second and third research questions: 1) To what extent will Reciprocal Teaching affect fifth-grade “word callers” ability to report the use of reading comprehension strategies while reading? 2) To what extent will Reciprocal Teaching affect fifth-grade “word callers” application of reading comprehension strategies? The researcher, along with two research analyzers in reading education, independently read the reflective interview protocol transcriptions to code the students’ statements. The analyzers then jointly examined the coding of the data and developed categories for the statements. Each statement was coded in the most appropriate category. The analyzers then returned to the transcripts to read and recode the statements using the new categories discussed. During this process, the responses were read and reread to identify the categories and patterns in the students’ responses (Goetz & LeCompte, 1984) as the data is collected. The analyzers held several meetings throughout the study to clarify the analyses. As a result, common categories emerged that described the nature of comprehension strategy use by the fifth-grade students in the study. This will be later discussed in-depth in Chapter four.
CHAPTER IV: RESULTS

The purpose of this 12 week, 50 minute, twice weekly, reading instruction study was to determine the effects of an intervention to guide fifth-grade students’ “word callers” use of five research-based reading strategies (i.e., predicting, questioning, visualizing, clarifying and summarizing). The intervention also used major components from the Reciprocal Teaching model including direct teacher explanation, modeling, scaffolding, and using reading comprehension strategies to guide conversation among the students throughout the text. This helped answer the main research question, “What are the effects of Reciprocal Teaching with, predicting, questioning, visualizing, clarifying, and summarizing on fifth-grade “word callers” reading comprehension achievement?”

“Word callers” are decode-focused readers (Cartwright, 2010); the hope was that the instructional strategies utilized in this study would change the participating “word callers” to meaning-focused readers.

The results of this study provided a descriptive look at the Reciprocal Teaching plus visualizing intervention that 21 students participated in after-school. The study identified comprehension achievement among “word callers” and illustrated any differences in the after-school interventions among different types of “word callers.”

The following research questions helped to guide the intervention and statistical analyses. Each question has been addressed separately, including the analysis procedures and the results that focus on that question specifically.
Research Results

Research Question #1: What are the effects of Reciprocal Teaching with predicting, questioning, visualizing, clarifying, and summarizing on fifth-grade “word callers” reading comprehension achievement?

The researcher examined research question number one which addressed the “word callers” overall reading comprehension achievement. The Reading A-Z reading comprehension levels of students in the intervention group were compared to the levels of students in the comparison group at the end of the intervention. Estimates of power, the probability that analyses would yield significant results if true differences are present, was estimated for this study. The researcher examined between-group differences pre, interim, and post-testing using repeated measures Analysis of Variance (ANOVA).

The researcher examined the descriptive statistics and expected the groups’ reading comprehension level to be at 22, which qualifies the student to be a “word caller,” a year-and-a-half behind their peers in comprehension. After running descriptive statistics, students in the control group had an average reading comprehension level in January at 21.6. The students in the experimental group had an average reading comprehension level in January of 17.09. Similarly, the average mean increased each time for both groups (see Table 4).

Table 4: Mean scores for Reading A-Z reading comprehension levels

<table>
<thead>
<tr>
<th>Grouping</th>
<th>January</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>17.09</td>
<td>18.81</td>
<td>22.45</td>
</tr>
<tr>
<td>Control</td>
<td>21.6</td>
<td>22.1</td>
<td>24.5</td>
</tr>
</tbody>
</table>

Assumptions were checked using SPSS, including independence of errors, normality, and test of sphericity. To test for independence of errors, the researcher included a variable for school. However, this variable was not found to be statistically
significant related to the outcome; thus indicating that school location did not impact on student performance. This also allowed for higher degrees of freedom. To test for normality, Q-Q plots were examined, and the normality assumption was found not to hold. To investigate sphericity, Mauchly’s test of sphericity was used, and a statistically significant result was obtained (p= .033). Thus, the assumption of sphericity was found to be violated so that the Wilks Lambda statistic was used to assess significance in the repeated measures ANOVA. This analysis displayed significance in both time (F= 81.034, p= .000) and the interaction of time and experimental group (F= 4.988, p= .019); thus stating that the change over time between the control and experimental group increased statistically significant (see Table 5).

Table 5: Results of repeated measures ANOVA analysis considering the time of the interaction and group

<table>
<thead>
<tr>
<th>Effect</th>
<th>F value</th>
<th>df value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Comprehension Achievement Levels Over Time</td>
<td>81.034</td>
<td>2</td>
<td>.000</td>
</tr>
<tr>
<td>Reading Comprehension Achievement Levels Interaction of Time and Experimental Group</td>
<td>4.988</td>
<td>2</td>
<td>.019</td>
</tr>
<tr>
<td>Metacognition Survey Over Time</td>
<td>.801</td>
<td>.960</td>
<td>.382</td>
</tr>
</tbody>
</table>

Students who were in the experimental group for the 12-week intervention demonstrated statistically significant (F= 4.988, p= .019) results when assessing their reading comprehension level when compared to the control group who only received the Core curriculum during the after-school intervention. Both groups changed over time; however, the experimental group made a greater gain with a five-and-a-half level increase (see Figure 2).
Research indicates that an average fifth-grade comprehender will increase two reading levels in one-whole year (Fountas & Pinnell, 2006); thus in 12 weeks an average comprehender will increase one level. Results display that the control group increased on average three reading comprehension levels during the 12 weeks. The experimental group increased on average five-and-a-half reading comprehension levels during the 12-week intervention.

The effect size was determined as well. This indicated that 18.7% of the with-in subject variance is accounted for by group difference (e.g., the experimental group). This further indicates that the Reciprocal Teaching plus visualizing strategy intervention helped students increase their comprehension skills academically; this is similar to research findings from Schorzman and Cheek in 2004 indicating that explicit teaching of reading comprehension strategies can increase a student’s reading achievement scores.

**Research Question #2:** To what extent will Reciprocal Teaching affect fifth-grade “word callers” ability to report the use of reading comprehension strategies while reading?
The researcher examined research question number two, which addresses “word callers” overall reading comprehension strategy knowledge. A mixed-methods approach was used to answer this research question.

Quantitatively, the metacognition survey scores of students in the intervention group were compared to the scores of students in the comparison group at the end of the intervention. Estimates of power, the probability that analyses would yield significant results if true differences are present, was estimated for this study. The survey was assessed prior to the intervention and again at the end of the intervention. Between-group differences at pre-test and post-testing were examined using repeated measures ANOVA.

Descriptive statistics were analyzed. An average reader will have a score of 18 out of 25, for their metacognition survey (Schmitt, 1990). After running descriptive statistics, students in the control group had an average metacognition survey score in January at 11.1. The students in the experimental group had an average metacognition survey score in January of 10.5. Similarly, the average mean increased in April for both groups (see Table 6).

<table>
<thead>
<tr>
<th>Grouping</th>
<th>January</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>10.54</td>
<td>14.54</td>
</tr>
<tr>
<td>Control</td>
<td>11.1</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Assumptions were checked using SPSS, including independence of errors, and normality. To test for independence of errors, the researcher included a variable for school location. However, this variable was found not to be statistically significantly related to the outcome; thus indicating that school location did not have an impact on
student performance. This also allowed for higher degrees of freedom. To test for normality, Q-Q plots were examined, and the normality assumption was found to hold.

The statistically non-significant interaction indicated that students who were in the experimental group experienced the same change over time, as did the control group (F= .801, p= .382) when assessing their metacognition survey score when compared to the control group (see Table 5). The mean score for both groups changed over time; however, neither group experienced a greater increase than the other (see Figure 3).

Figure 3: Metacognition Survey score group comparison

As a result, the Reciprocal Teaching plus visualizing strategy intervention did not yield statistically significantly results and thus did not help students increase their comprehension skills knowledge academically.

Three analyzers, the researcher and two professors from a local university, examined the data to address question number two, “Do students know about the comprehension strategies in general over time.” From this analysis, themes emerged that
addressed questions two and three, after reviewing the assessment data and reflective interview protocols of the intervention itself.

One theme that was discussed which addressed question two was the students’ ability to report various strategies over time. The triangulation of the data helped to identify this theme. In the beginning, the students were unable to report their comprehension strategy knowledge. Their answers were simplified (e.g., keeping looking at it, I remember by parts, try not to think of other stories, thinking about main parts). One student was able to recite all five strategies used in the intervention; when asked to state what visualization he had or what question he asked, he was unable to do so. This shows he knew good readers use comprehension strategies, but he was still at this time unable to apply them himself.

By the end of the study, students were able to report multiple strategies (e.g., picture in my head, ask questions, clarifying, pick out the details, predicting). The intervention helped to strengthen the students’ strategy knowledge through modeling and repeated use during each session. Afflerbach et al. (2008) state that strategic readers are readers who know, monitor, and can help their comprehension of reading.

**Research Question #3: To what extent will Reciprocal Teaching affect fifth-grade “word callers” application of reading comprehension strategies?**

The researcher examined research question number three, which addressed the “word callers” overall reading comprehension strategy application. This question was addressed descriptively. When viewing the reflective interview protocol, observations, and teacher input, the analyzers noticed that the students lacked reading comprehension strategy application in the beginning. This can be seen in Table 7. Table 7 also displays
the students’ usage of the reading comprehension strategies during post-testing. One student even predicted out-loud before she read and stated her visualization during the process. She said, “In the beginning I predicted it would be a story about a knight. Later I pictured the horse being so big.”

Table 7: Reading comprehension strategies used by students across the groups during pre-and post-testing

<table>
<thead>
<tr>
<th></th>
<th>Predicting</th>
<th>Questioning</th>
<th>Visualizing</th>
<th>Clarifying</th>
<th>Making Connections</th>
<th>Summarizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Post-test</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>6</td>
<td>3</td>
<td>8</td>
</tr>
</tbody>
</table>

As the semester continued and the intervention had more effect, students began to state their knowledge and application of their reading comprehension strategy usage during the assessment process. This can be seen in Figure 4.

Figure 4: Reading comprehension strategy use by students during pre-and post-testing comparison

Multiple students stated phrases during the semester that pertained to utilizing reading comprehension strategies directly. These phrases were stated during the experimental group intervention sessions. A few of those were:
1) Text-to-Self Connecting: “This reminds me of the student council like we had when Jack and Jill were elected.” This student was commenting on the Lincoln election the text was referencing. 

Text-to-Self Connecting: “Oh, this is like Men in Black.” This student is reflecting on the secret service uniform as displayed in the text.

2) Predicting: “They might talk about the World Trade Center since he was President at that time.” This student was commenting on the title about President Bush. 

Predicting: “I think it is going to be about the ocean.” After viewing pictures on the picture walk, the student noticed multiple ocean photos and made this prediction.

3) Questioning: “Why do they call it Life in a Cage as the title?” The student was referencing the heading Life in a Cage, after reading the paragraphs about presidents and the secret service. 

Questioning: “Do you think the trail really looks like that? I do.” The student questioned the Application Trail brochure after reading the paragraphs and viewing the attached photos.

4) Visualizing: “I can picture Paul throwing snowballs from on top of the roof; this is hilarious.” After reading a book without photos, the student could picture the character on top of the roof in the winter.

Visualizing: “I see the food chart it is talking about. I can see all the foods I am supposed to eat.” The student was able to picture what the
author was referencing to. After turning the page, the student stated, “I was sort of right. My picture is kinda like this one on the page.”

5) Clarifying: “Does this really mean they are dreaming?” The student needed clarifying as to what was meant in the sentence. She was confused as to what dreaming meant; if it meant the characters were sleeping.

Clarifying: “This does not make sense. I don’t get this.” Later the student decided they should reread the paragraph to help them. “Oh, I see now. He (the character) is not actually running. He is just saying that to make a point, I think.”

6) Summarizing: “When the girl is packing, the boy was crying. He said don’t leave. The girl walked out of the house. The boy went after her. The boy went to find the girl. He walked through the high water from the storm and found her at the bus station. She was scared until she saw the boy. Then they saw the rescue boat.” The student summarizes the entire text after the character went out into a storm and followed his sister.

Summarizing: “So the bees make the honey, but then they just leave it behind.” The student summarized the page that was read in one accurate retelling.

In regards to utilizing their new reading comprehension strategies, the fifth-grade teachers reported that the students also displayed progress during the average school day. Teachers stated they first noticed changes in the students’ strategy use by the middle of
February, which was about one month into the intervention. One teacher stated she noticed a student in her room asking more clarifying questions. She went on to state, “She even asked… “Does it really mean he stays standing and the other people fall down?” “She never would have asked that question before. I think she would have just kept reading and thought that they all did fall down even though that did not make sense.”

Other components that are incorporated in the Reciprocal Teaching framework, including modeling, scaffolding, and discussing, were also seen to have an impact on student strategy application. These overlapping pieces of Reciprocal Teaching helped students see the importance of strategies in their comprehension achievement. Teacher modeling was heavily relied on primarily during the first-half of the intervention. With much scaffolding and group discussions throughout the time frame of the intervention, the researcher noticed a greater student application with strategy use. For example, students in the experimental group rarely spoke during the discussion and did not think-aloud their thought process easily in January. One student stated, “I don’t know what I am thinking. I am just reading.” However, as the intervention time frame increased and students practiced thinking-aloud their thought process and strategy use, students were able to discuss their comprehension techniques as a group. For example, one student stated, “Yea, Callie I agree with you. I pictured the girl’s tears too. I even saw her kneeling by the window.”

Research Question #4: To what extent will Reciprocal Teaching affect fifth-grade “word callers” overall fluency scores as compared to their reading comprehension achievement scores?
The researcher examined research question number four addressing the interaction between the “word callers” overall fluency integration scores and the “word callers” overall reading comprehension levels for pre-and post-testing only. Correlations between the fluency integration and reading comprehension levels were analyzed using an Analysis of Covariance. The dependent variable was the Reading A-Z reading comprehension level; where as the group variable (e.g., experimental vs. control) was the independent variable, and the covariate variable was the fluency integration score.

When comparing students in the intervention, using group as an independent variable, the data showed statistically non-significant (F= .706, p= .413) results (see Table 8).

<table>
<thead>
<tr>
<th>Effect</th>
<th>F value</th>
<th>df value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency Integration and Reading Comprehension Achievement Levels Comparing Group</td>
<td>.706</td>
<td>1</td>
<td>.413</td>
</tr>
</tbody>
</table>

To summarize, the researcher found that the dependent variable and covariate variable were statistically non-significant when comparing them to the independent variable (e.g., experimental vs. control). However, when the group variable (e.g., experimental vs. control) was not used, statistically significant (p= .014) results were reported. Thus, an association can be made between larger improvements in fluency and improvements in reading comprehension levels; if fluency overall increases then there is a greater chance of an increase in reading comprehension levels. This finding reiterates Rasiniski’s (2012) thinking regarding fluency as the bridge to comprehending. The correlation between fluency and reading comprehension level was p= .527. The intervention, in this case, did not make a statistically significant difference.
Summary

In conclusion, results from this study determined multiple areas to be statistically significant. Even in 12 weeks, it was seen that statistically significant changes in reading comprehension levels were reported in all students who participated in the after-school reading intervention. This study details that an after-school intervention does appear to help struggling fifth-grade readers. Importantly, statistically significant changes began to take place in “word callers” in this 12-week study. This was seen in their overall reading comprehension levels, and ability to report comprehension strategies and apply them to their reading. This study detailed that fifth-grade students are able to know and apply more comprehension strategies through the use of an intervention. In summary, an after-school intervention explicitly using Reciprocal Teaching plus visualizing appears to play a large role in helping “word callers” improve their reading comprehension ability.
CHAPTER V: SUMMARY AND CONCLUSIONS

Overview of the Study

In this dissertation, the researcher sought to determine the effects of an intervention to guide fifth-grade students’ “word callers” use of five research based reading strategies (i.e., predicting, questioning, visualizing, clarifying and summarizing). The intervention used major components from the Reciprocal Teaching model including direct teacher explanation, modeling, scaffolding, and using reading comprehension strategies to guide conversation among the students throughout the text. Specifically, this study addressed these questions:

1) What are the effects of Reciprocal Teaching with predicting, questioning, visualizing, clarifying, and summarizing on fifth-grade “word callers” reading comprehension achievement?

2) To what extent will Reciprocal Teaching affect fifth-grade “word callers” ability to report the use of reading comprehension strategies while reading?

3) To what extent will Reciprocal Teaching affect fifth-grade “word callers” application of reading comprehension strategies?

4) To what extent will Reciprocal Teaching affect fifth-grade “word callers” overall fluency scores as compared to their reading comprehension achievement scores?

The importance of thought provoking interactions with texts, students, and the teacher has shown to be important for the development of comprehension in all readers. Part of that interaction includes comprehension strategy instruction. However, many readers do not have these strategies. Thus, this study built upon prior research in regards
to comprehension strategy instruction to examine students’ strategy use while reading when comprehension was a weakness.

This study built upon Horace Mann’s (1838) early thinking that the meaning of words is the most important component of reading lessons. The use of constructivist and metacognitive theory was utilized in this study, which assumes readers actively construct the meaning from text. When readers construct messages, or comprehend, during the reading process, it is known as constructivism (Vygotsky, 1978). Within this framework “comprehension is a combination of reader, text, and context” (Anderson et al., 2006, p. 277). This after-school reading intervention helped struggling “word callers” build this combination using research-based strategies through the use of the Reciprocal Teaching model plus visualization.

Little research regarding the subject of reading has been conducted with focus on intermediate grades (Allington, 2002; Allington & Johnston, 2002; Gabriel & Allington, 2011). In addition, little attention has been placed on efforts to improve the reading proficiencies of students in fifth-twelfth grades (Allington, 2002; Allington & Johnston, 2002; Gabriel & Allington, 2011). The results of this study contributed to the existing research. Furthermore, the question was asked, why are “word callers” recalling words but not able to see the big picture of reading, which is understanding? The current study explored the strategic awareness and control of fifth-grade “word callers” using a research-based intervention.

**Findings and Interpretations**

Studies support the general hypothesis that students can learn to apply reading comprehension strategies through instruction, and this is the desired effect of such
strategy use being utilized (Rosenshine & Meister, 1994). Several themes were identified in this study that contributed to the existing body of research; these included *structured interventions work, modeling counts, scaffolding is important, discussion is helpful, increase in comprehension knowledge, and increase in self-confidence*.

*Structured Interventions Work*

All students displayed growth in this study in regards to overall reading comprehension. This may indicate that an after-school intervention, the common thread of the study, may have played a large role in this outcome. Educators need to examine more closely the importance of adding extra time outside of the regular school day, which has been researched frequently showing growth in a student’s area of weakness (Reis & Boeve, 2009).

Statistically significant results were shown during this study in relation to the Reciprocal Teaching plus visualization strategy intervention. Results stated in chapter four displayed that the experimental group increased on average two-and-a-half more reading comprehension levels during the 12-week intervention; thus, students increased in reading comprehension levels almost twice as much as the control group. Specifically with the Reciprocal Teaching plus visualization intervention, the researcher used modeling, scaffolding, and discussion more often than in the control group. Palinscar and Brown (1984, 1986) and Palinscar and Klenk (1991), both found statistically significant results using the comprehension strategy instructional method (i.e., Reciprocal Teaching). Their intervention displayed similar affects as this dissertation study, indicating that multiple strategy instruction can improve, over time, reading comprehension achievement scores.
This study indicated that the Reciprocal Teaching plus visualizing strategy intervention helped students increase their comprehension skills academically; this is similar to research findings from Schorzman and Cheek (2004) which indicated that explicit teaching of reading comprehension strategies can increase a student’s reading achievement scores. A good reader eventually performs the strategy effortlessly and automatically and thus the strategy becomes a reading skill that the student has acquired, similarly to metacognition. This reading act appears to have been displayed by the participating “word callers” in this study.

*Modeling Counts*

As well, the intervention helped to strengthen the students’ strategy knowledge through modeling and repeated use during each session. This finding reports similar findings as Afflerbach et al. (2008) and Dole et al. (1996). It appears that learners actively engage in the learning process, and in-turn make meaning from the text (Vygotsky, 1978). In this study, as well, students increased their use of strategy knowledge and thus actively constructed meaning from the text read. This study demonstrated, with these participants, that if students know comprehension strategies, it may lead to a better reading comprehension level outcome over time.

This study also revealed that improvements with fluency and reading comprehension level can be made; if fluency overall increases then there is a greater chance of an increase in reading comprehension levels. Fluency opens up all the opportunities to be able to concentrate on comprehension (Rasinski, 2013); it is the bridge between decoding and comprehension (Allington, 1983). It appears that through the use of modeling and scaffolding, these increases can be made with “word callers.”
Scaffolding is Important

During the assessment process, a common theme that was evident during pretesting and interim testing was during the retelling assessment. Multiple students stated: “I forgot” or “that’s all I know.” The summaries lacked detail and their knowledge of the topic they had just read a minute before, missed important information. With continual scaffolding of important details, multiple students were able to give detailed retellings. One can see from the results reported in chapter four that the students reading comprehension level scores increased more by the end of the 12 weeks. Therefore, students, with modeling from others and scaffolding, may be able to give accurate, detailed retellings of the stories they read.

Discussion is Helpful

Students in the experimental group made great gains in comprehension strategy application. These comprehension gains appear to have improved by various instructional activities in the intervention such as: direct teacher explanation, modeling, scaffolding, and using reading comprehension strategies to guide conversation among students throughout various types of text. Brown (2008) agreed that text discussions are important explaining that direct instruction about reading comprehension strategies should be blended into meaning-oriented text discussions. In addition, Fung et al. (2002) found that intermediate-level students using the Reciprocal Teaching method increased their reading comprehension ability significantly, allowing for more discussion pertaining directly to the text. This study accomplished this task. Students had group discussions each session and all students in the experimental group shared their thought process every time.
Increase in Comprehension Knowledge

Another finding in this study was directed towards the meaning of comprehension. Multiple students stated, “I don’t know,” during the reflective interview protocol question one, which asked: what comprehension means to you. During interim assessment, students commonly stated that comprehension meant answering questions. This is similar to Durkin’s study in 1979, where she observed teachers asking questions during comprehension instructional time. Durkin found that teachers ask multiple questions with little time for reflection and discussion. In contrast, during post-testing, students in this study increased their knowledge of the meaning of comprehension, “It means that you can tell the story to a friend. You understand it.” Cartwright (2010) and Rasinski (2013) agreed that knowing the importance of comprehension would help the reader know the true meaning of reading. The students in this study appeared to have a deeper understanding about comprehension overall.

Increase in Self-confidence

The researcher also felt that the students had an increase in self-confidence. During the reflective interview protocol, one question pertained to a student’s rating of his or her own comprehension ability. The question asked was: On a scale of 1 to 10, with 10 being the best and one being really bad, what number are you at when being able to comprehend what you read? Student scores at pre-testing ranged from 1 to 6. During post-testing, student scores ranged from 7 to 10. It appears that the after-school intervention framework in both groups helped students feel more confident in their comprehension abilities.
One question that was answered during the descriptive analyses was: Does the effect of a student’s motivation and interest in reading affect the student’s comprehension of the text? During the assessment process, multiple students expressed that the non-fiction texts were harder because they were not as interesting. “Anytime I read something I don’t want to read, I forget it easily,” said one student. During the intervention itself, the researcher and the control teachers heard from students their dislike in non-fiction texts. The students commonly stated they liked the information because, “It was interesting.” However, they expressed concern when beginning to read the book by explaining, “Oh, this will be harder. It’s all facts.” It appears that because the combination of non-fiction and fiction texts were used during the intervention, “word callers” felt more confident while reading difficult genres. For example, one student, who stated these comments often, increased four reading comprehension levels during the 12-week study. Providing readers with comprehension tools to remember the facts and interesting material in both fiction and non-fiction text appears to help “word callers” with their meaning-making ability.

**Limitations**

A limitation is an aspect of the study that the researcher cannot control (Gay, Mills & Airasian, 2009). The following are areas of the study that may have affected the study negatively.

The schools used in this study were not randomly selected but were purposefully selected for comparisons between school districts across the mid-western United States. However, within each school the students in the study were randomly selected after teacher nominations. Once the researcher verified, by assessing each student, that the
teachers’ nominations did in fact hold true, the researcher randomly selected students for the experimental and control groups.

To save time, the researcher was included as one of the assessors during the pre-, interim, and post-assessment days. To counterbalance this limitation, two assessors, examined the data for both the students in the control and experimental groups. All assessors were taught extensively in the assessment procedures by the researcher prior to the assessment days.

The study included three different schools, and thus the daily classroom instruction in each literacy environment may have been different, resulting in a differential reading focus for the students. In order to counterbalance this aspect, the researcher documented the literacy instruction provided daily to the students; this information was given to the researcher from the fifth-grade teachers.

The researcher provided the instruction to the subjects and therefore researcher bias may have been a factor affecting the results of the study. However, the results of the study were taken from the data gathered by multiple assessors, and over time.

The control group was instructed by three different individual teachers, due to the three different control school settings. As a result, the reading focus for the students may have been different in each setting. The researcher documented the literacy instruction provided daily to the students in the control group (see Appendix D); this information was given to the researcher from the control-group instructor. The control-group teacher was instructed by the researcher to continue the daily reading curriculum, stating you may extend the reading for the day or preview the reading for the following day. You may also review/repeat the reading of the day.
Another limitation included the idea that reading comprehension is shaped by more variables than an intervention lasting 12 weeks, two-days-a-week, and 50 minutes at a time. Nevertheless, the researcher had permission to be in the schools during the spring semester. The researcher is aware that a longer intervention may yield results differently.

Another idea to consider was directed towards the statistically significant results shown between the experimental group and the control group in January. The two groups differed in the beginning prior to the intervention. This may be due to the outliers that are stated below. Two students were placed in the experimental group by teacher request. These two students were low-achieving “word callers” and thus the teachers and principals felt these students should be placed in the experimental group to make sure they received the reciprocal teaching strategy approach.

Time was another limitation. The study took place over a 12-week period with two after-school interventions per week. A longer intervention or an intervention of the same length with more frequent afterschool meetings would have allowed for additional teacher instruction and student practice. Additional instruction and practice might have led to the students using the comprehension strategies more often and therefore gaining in their comprehension abilities.

The small sample size may be another limitation to this study. Scheduling only permitted for the participation of three school districts, thus the sample size was limited. The potential number of student participants was large with 223 students in total in the fifth-grade classrooms; however, only 36 students were nominated to be assessed initially by the participating fifth-grade teachers. Of those 36 students, 22 students qualified for
the study, and were identified as “word callers.” As a result of attrition, 21 students remained in the study. Due to the small sample size, it was difficult to run statistical analysis on the collected data and determine a large effect size.

The study overall had a few outliers that may have effected the results. Three students were lower in their reading comprehension levels than the average one-and-a-half years behind. This information is important to note, because these word-caller readers were not quite like everyone else in the study. However, they still participated in the study since their initial scores identified them as “word-callers.” In addition, these students had the most to benefit from participation in the study. Another student that needs to be noted is the student who had a 504 plan for behavioral disruptions. His behavior did affect his focus and overall willingness to participate in the intervention itself. His behavior significantly disrupted the groups focus on two specific days of the after-school intervention, affecting three students overall. The researcher believes that if his behavior was not a factor then his comprehension achievement scores may have seen more of an increase.

The intervention used an interview as part of the assessment procedure. A structured interview is a widely used assessment method (Pressley & Afflerbach, 1995). However, interviews can be a limitation (Paris & Flukes, 2005), and thus a novelty effect could be the cause of the students’ responses. Nevertheless, Wells (1986) stated, “There is no better way of knowing where they are than by listening to what they have to say” (p. 101).

It should be understood that although there is support for the reliability and validity of the metacognition survey, which was used in this study, it is a self-report
instrument. Thus, it has the limitations associated with such an instrument. For example, one cannot tell from the assessment alone whether or not the student actually does the behaviors they say they do. Teacher observation is required to verify this relationship.

Conclusions based upon data from this study were restricted to the sample and may not be applicable to other classrooms. Conclusions from this study are not to be extended beyond this population sampled and therefore further research may need to be completed following this study.

**Educational Implications**

Recently NAEP (2005) scores for reading have continued to show that a large proportion of upper elementary students consistently fall below the basic level in reading. Therefore, it is important that educators look into providing these students with research-based reading interventions. Classroom-based research provides important insights into how we can better serve students in the classroom and prepare teachers to provide more effective instruction (Foorman & Connor, 2011). Rosenshine & Meister (1994) recommend that Reciprocal Teaching, as an example of cognitive strategy instruction and based on the generally favorable record, become part of on-going practice inside classroom instruction. This study provided a framework for such an intervention model to be implemented with fifth-grade students.

This study revealed that “word callers” might not be recognizing that they are struggling readers. During pre-testing, one student was asked prior to the start of the assessments, “Do you feel you have a weakness in reading?” This student replied, “No, I am a great reader.” This student’s fluency and accuracy was exceptional, with the highest fluency integration score of four and 100% accuracy on his running record.
However, this student lacked comprehension skills; he scored three grades behind in his reading comprehension level. During the middle of the pre-testing assessments, this student stated, “I would like to take back my previous statement. I may have problems with remembering.” “‘Word callers’” may not want to admit they have a weakness in reading for a multitude of reasons: 1) these students may not want to disappoint their teachers or peers, 2) they do not recognize their comprehension is not at grade-level, 3) they focus on fluency as a whole and not the most important component of reading (i.e., comprehension), and 4) they do not want to be different than their peers. Educators need to pay close attention to these types of readers as they may fall through the cracks if not watched a great deal (Cartwright, 2012).

It is important to note that educators may need to give students time to make great educational gains. Currently, with the rise of Response to Intervention (RTI), educators are implementing interventions that may only last one, two, or three weeks. During this study some students did not increase greatly during interim testing which was one month after the study started; however the researcher still saw progress in student discussions and on the graphic organizers as written form. This study showed that statistically significant growth can be seen with an intervention; however, this intervention was implemented over a 12-week time frame indicating that progress may need to be viewed over longer periods of time. Thus, one may not see progress in under a month, as in the RTI program.

“‘Word callers’” appear to have developed bad reading habits. One student stated at pre-testing, “Fluency is the most important part of reading.” One needs to remember that it takes time for a struggling reader, especially at fifth grade to overcome these
habitual reading habits that hinder their reading process. Recent research suggests that even early readers are aware when a story does not make sense (Martin & Krager, 2011); even young readers can develop comprehension strategies to understand text thoroughly (Pilonieta & Medina, 2009). Teachers need to focus on comprehension more often, even in younger grades. This may help “word callers” from becoming dependent on the fluency and decoding process.

A common thread of this study was the time involved after-school, in both the experimental and control groups. The data suggested that all students displayed growth in their overall reading comprehension ability. However, one can see that the experimental and control groups differed in regards to their individual approaches to teaching reading comprehension by looking at each control teacher’s approach. Both individual and observational fidelity checks showed that during the experimental groups the teacher taught, modeled, and allowed the students to have multiple discussions about the text utilizing their reading comprehension strategies. These checklists also displayed that during the control groups the teacher had more direct instruction and a smaller amount of teacher participation. The teacher asked multiple direct questions regarding the text, and guided the students towards the correct answers. Thus, one can then conclude that the increase in reading comprehension ability may be not be because of the instruction provided but because of extra instructional time after-school directed towards the student’s area of weakness, which in this case was reading comprehension.

Educators may want to allow “word callers” to utilize graphic organizers more often than their grade-level peers. Graphic organizers detailing the five research-based comprehension strategies were used throughout the study. Students asked for these
visuals each session. As well, one student asked to have a few graphic organizers to take with him; he stated, “Can I have some pages to use when I am in class this week?” By the end of the intervention time frame, students were able to make their own, on plain notebook paper, using the strategies they used frequently. For example, one student wrote a section down the last day of the intervention of each of the following: visualizations, clarifications, questions, and summary; she did not include predictions as this was a strategy she felt she did not utilize often. It appears that graphic organizers can help “word callers” by allowing them to see and write down their thought processes so they do not forget what they were thinking while reading the text.

During the last six weeks, group discussion was so grand that the graphic organizers were used but not as much writing was documented on the paperwork. The overall reading comprehension appeared to improve using the graphic organizers as a vehicle for the discussion. Educators may use graphic organizers as assessments; however, we need to think about what is the most important documentation. If a student can tell you more details about their thinking through verbal language, then a teacher needs to make note of this as well. For example, one student would say often, “Well, I got more I can tell you,” after she gave me her graphic organizer to view at the end of the session.

During the Reciprocal Teaching intervention multiple strategies were taught, modeled, and utilized by students. Two students from different locations in the experimental groups decided that a skit to portray their knowledge of the text read would be appropriate. It followed the discussion and engaged all students in the group, thus the lead teacher did not feel it distracted from the setting but enhanced the learning. One
student from School #1 wrote down her small skits to remind herself what she wanted to perform at the end of the time frame. These skits helped all students by summarizing the text. For example, one skit portrayed her knowledge of coral reefs and the actions the coral takes to grab food. Another student performed quick skits during the intervention time frame that pertained to the text directly. For example, during one skit he pretended he was a tight-walker on a large bridge feeling scared that he might drop. Both of these students visualized the text, and in addition to drawing their visualizations also decided that acting them out would help them and in addition, help their peers’ learning.

Teachers need to remember that not all students learn the same way and by the same method. These two students from separate schools learned a great deal and displayed their knowledge through theatre. As educators, we need to remember that reading assessments can be completed in multiple ways, even through skits and acting.

Educators may need to view how we assess reading comprehension in general. Currently, educators rely heavily on such scores as answering questions or NWEA or Acuity reading scores. Teachers are then supposed to view the student scores and then change their instruction based on the student and class data. The procedure is to look at the product and then look back at the process. However, educators should not get lost in the product (similar to constructivism); we need to look at the process. Teachers may need to ask themselves the following questions: 1) What was the process of understanding for the student? 2) How did the student get that score? 3) How did that student learn comprehension? 4) Did the teacher model, implement direct instruction, or scaffold at any point? This may help this situation. Teacher evaluation needs to be viewed as well. One aspect to look into may be a teacher-developed rubric for the
comprehension process piece itself. It may include the components of RT that capture the level of strategy application, knowledge, and discussion. Most importantly, educators need to ask how does the student get to the reading comprehension level at the end goal.

**Recommendations for Future Research**

If we, as educators, want students to better comprehend reading material, more studies with large populations of students in the intermediate grades must be conducted, particularly in the area of comprehension strategy instruction and “word caller” students. Future research should examine multiple areas of concern regarding comprehension instruction. This is a complex task requiring explicit instruction and multiple opportunities to rehearse through the participation of specific comprehension strategy instruction and accompanying discussions.

Educators know that teachers tend to focus more on word-level decoding processes than on more complex, meaning-focused reading skills when they work with struggling readers (Allington, 1980), which might lead at-risk readers to adopt decoding-focused, rather than meaning-focused reading strategies. Thus, “word callers” may not receive the meaning-focused reading instruction they need. More research regarding “word callers” is warranted because we only have a partial grasp of how to instruct these students. We know that instruction is important, and quality reading instruction is not a one-size fits all method. Therefore, show educators ask themselves is the teaching of fluency directly creating “word-callers?” Research has shown that as many as 10% of fifth-grade students, develop typical fluency skills but are not achieving average comprehension reading skills (Meisinger et al., 2009). More research needs to address “word-callers.”
Further research needs to address the importance of strategy instruction. This study’s encouraging findings appear to suggest that educators need to think about direct strategy instruction again. We need to remind ourselves of its importance; recently, Williams (2010) found significant results that support this thought as well. Recently, researchers suggest that there is a lack of explicit strategy instruction (Harvey & Goudvis, 2013). Due to the emphasis on Common Core standards that are guiding the current reading curriculum, researchers and curriculum developers need to focus on reading strategy instruction that is currently lacking in the classrooms today (Ciardiello, 2013).

The question remains, how do we get this completed? Educators need to think about the complexity of the new text, digital text, and non-print resources. This will help our readers be diligent in their comprehension ability and have a wide variety of strategies across texts.

Reciprocal Teaching is part of the larger body of research on the teaching of cognitive strategies. Three interesting questions concerning the general topic of cognitive strategy instruction appeared often in research studies (Rosenshine & Meister, 1994): what are the cognitive changes that occur when strategies are taught; how many and which strategies should be taught; and which of the major reciprocal teaching strategies were most helpful to students? All of these questions can and should be researched in future studies.

Due to the encouraging results found in this study, the following question merits further research: which reading comprehension strategy taught was used most often by readers when observed in daily reading routines in their classroom setting? The ways the strategies are practiced actually do play a considerable role in reading comprehension
achievement of upper elementary school children (Van Keer & Pierre Verhaeghe, 2005). With this in mind, observations of the “word-callers,” in the experimental group, during the day could be taken in their classrooms. Viewing students throughout their day, not just during the after-school intervention, will provide insightful details to show if students are in fact using the strategies practiced during the reciprocal teaching intervention. This would also impact the existing research on “word callers” comprehension ability by looking into if students maintain the comprehension growth that was seen in this current study, and for how long is the growth sustained.

Further research should be directed towards assessment. Even though much is known about reading comprehension instruction, much knowledge is unknown on what is the best method of instruction, and which is the most effective assessment measurement to see these results. It has been shown that awareness of metacomprehension strategies is characteristic of good comprehenders (e.g., Paris & Jacobs, 1984; Schmitt, 1988); it would be useful for teachers to evaluate their students’ awareness of those strategies (Schmitt, 1990). The current study may have seen different results if different assessments were utilized.

Another area of future research to consider is in regards to collecting reading Acuity and NWEA scores normal growth from Fall to Winter and comparing Winter to Spring growth when interventions occur. However, in this study the collection of this data was not possible since not all schools used the same high-stakes testing assessments in this current study. Comparing these assessments would help in data analysis, since schools and government rely on these data heavily.
Conclusions

Good readers have a purpose for reading. They are active thinkers and are engaged in the reading process. Comprehension is an active process that requires an intentional and thoughtful interaction between the reader and the text. Recently, Dole (2000) stated that, “Despite a significant body of research in the 1980s suggesting the effectiveness of strategy instruction, especially for lower achieving readers, strategy instruction has not been implemented in many American classrooms” (p. 62). This dissertation added to this lack of research. The research presented indicated that direct strategy instruction, that actively engages the reader in the reading task, can have significant benefits for students, specifically “word-callers.” “Word callers” need extra “heavy-duty scaffolding” (Cartwright, 2012). This study provided this framework for the participating students. The information may be useful in designing a comprehensive reading program that fosters metacomprehension strategy awareness and competence. In conclusion, the results of this study suggest that strategy instruction using Reciprocal Teaching including visualization can improve students’ overall comprehension growth academically. Directed reading activities can be conducted in a manner that promotes metacomprehension skills and fosters independent, strategic reading; Reciprocal Teaching helps to establish this in struggling readers.

Reciprocal teaching strategies (i.e., predicting, questioning, clarifying, and summarizing) including visualization were used in this study. Palinscar (1984) states that Reciprocal Teaching has four main components. Those include: comprehension-fostering teaching, the provision for practicing the strategies while reading actual text, the use of scaffolding or supporting students as they develop their strategy use, and the idea
of students providing support for each other as well as the teacher guiding the students in their comprehension strategy use. Multiple researchers would agree that these components would heighten a reader’s response to literature (McKeown et al., 2009; Pearson & Duke, 2002). Rosenshine and Meister (1994) noted that, “These ideas have existed before, but the Reciprocal Teaching method packages, and presents them in a manner that has gained educational acceptance” (p. 7).

More research needs to be conducted on which of these variables make the greatest impact on comprehension growth. “In the end, it is up to us, the adults in the school system, to alter our efforts such that every child becomes a reader” (Allington, 2013, p. 530). Research on strategy instruction has great potential, and this study described on previous pages is intended to add to this body of research and knowledge.
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APPENDIX A

Who is a “Word-Caller” Handout
Who is a “Word Caller”?

Please think about your students in your classroom who would be characterized as a word-caller, as described below. Please list their name on the attached page and return it to me via email by December 14th.

*Some of the hardest readers to reach are those that seem to decode accurately and quickly, but have trouble with retelling, answering questions, and comprehending in general.

*A “word caller” is a child who is engaged in meaningless reading (Dolch, 1960). They sound like “good readers” and they decode fluently, but do not understand what they have read or are reading (Applegate, Applegate, & Modka, 2009).

Characteristics of a “word caller” reader:
- Can process only one feature at a time (i.e. the text but not both the text and the text meaning)
- Read words with accuracy and fluency
- Often give disorganized responses
- Struggle with comprehension
- Often cannot tell someone about the content they read
- Have trouble inferring meaning from the context
- Have problems making connections between their knowledge and the text read
- Are inflexible
- Their written work often lacks detail

Characteristics of a skilled comprehender:
- Can process many features at a time
- Thinks of words as having meanings and sounds
- Meaning focused
- Flexible in their reading
- Reads fluently and can comprehend the text at hand

*One-third of all struggling readers (Cartwright, 2010) are word caller students. A word-caller student is about 1.5 grade levels higher in decoding accuracy compared to their comprehension instructional level.

For example:
1. A fifth-grade student who scores 7.2 in decoding accuracy and 5.6 in comprehension may be considered a word caller student, or their comprehension level may reflect grade-appropriate background knowledge.

2. A fifth-grade student who scores 5.2 on decoding accuracy and 4.1 on comprehension would be considered a word caller student.

3. A fifth-grade student who scores 4.1 on decoding accuracy and 3.7 on comprehension would not be considered a word caller student. This student would, instead, benefit from decoding interventions, as poor decoding is likely constraining their comprehension.

4. A fifth-grade student who scores 5.0 in decoding accuracy and 4.7 in comprehension would not be considered a word caller student, because the student’s comprehension level is not 1 to 1.5 grade levels behind their decoding accuracy.
I, __________, feel the following students in my class would be considered “word caller” students:

(You may state as many students as you feel fit the profile.)

<table>
<thead>
<tr>
<th>First Name/Last Name</th>
<th>What behaviors, characteristics, or test scores make you think this child is a “word caller”?</th>
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References:


APPENDIX B

Parent Consent Letter
Parent Consent Letter

**Study Title:** “The Effects of a Reading Intervention on Fifth-Grade Student “Word Callers” Reading Comprehension.”

**Study Purpose and Rationale:** The purpose of this study is to determine the effects of an intervention to guide fifth-grade student “word callers” use of three research-based reading strategies, i.e., imagery, predictions and questioning. “Word callers” are students who are successful in the area of accuracy yet they do not comprehend the text at a higher-comprehension level (Meisinger, Bradley, Schwanenflugel, & Kuhn, 2010; Hamilton & Shinn, 2003; Diehl, 2005).

**Inclusion/Exclusion Criteria:** To be eligible to participate in this study, your child must be in fifth grade and enrolled in the three designated schools (i.e. Mt. Comfort Elementary, Brown Elementary, and Rhoades Elementary). The students who will be identified will include scores that indicate the student is a word-caller. A word-caller is a student who is about 1.5 grade levels higher in decoding accuracy compared to their comprehension instructional level, therefore the accuracy and comprehension retell and question data will display this.

**Participation Procedures and Duration:** For this project, three treatment and three control groupings will be identified, total across schools. One treatment (i.e. those who will receive the multiple strategies intervention) and one control (i.e. those who will receive normal instruction without the multiple strategies intervention) will be randomly selected in each school. The treatment groupings will receive 50 minutes of intervention each day for two days a week during the treatment period (i.e. January through Mid-April. Students in the control groupings will continue to receive the reading instruction using the Core Curriculum only. A variety of assessments will be collected, with the entire assessment process taking about 45 minutes total. Pre- and Post- testing will also be conducted with Reading A-Z running records, oral fluency rater scale, reflective interview protocol, and informal observations will be collected systematically throughout the study. If you would like additional information on the assessments that will be used, the researcher would be glad to provide that information to you.

**Audio or Video Tapes:** For purposes of this study, no videotaping or audiotaping will be done.

**Data Confidentiality or Anonymity:** All test scores will be maintained as confidential and only the researcher will have access to them. Children’s names will not be coded onto the research files. Your child’s test scores will be shared with you and with the teacher after the study is completed. School administrators and teachers have agreed to participate in this study.

**Storage of Data:** All test materials will be stored in a locked cabinet in the researcher’s office. Data and protocols will be destroyed within five years of being collected. The USB flash drives containing data and files will be reformatted.

**Risks or Discomforts:** There are no perceived risks for participating in this study.

**Benefits:** Student participants can be assigned to the control grouping or the experimental grouping. Students in the experimental grouping may experience accelerated growth and confidence in several aspects of their reading skills. Each student will also be provided a supplemental parent feedback packet of information regarding outside resources, assessment data completed, and at-home suggested interventions to complete after the study is done. The packet will include information on how to help struggling readers, in particularly word-caller students.

**Compensation:** No compensation is being offered.

**Voluntary Participation:** Your child’s participation in this study is completely voluntary and you are free to withdraw your permission at anytime for any reason without penalty or prejudice from the researcher.
Please feel free to ask any questions of the researcher before signing this parental consent form and at any time during the study.

**IRB Contact Information:** For questions about your rights as a research subject, please contact Director, Office of Research Integrity, Ball State University, Muncie, IN 47306, (765) 285-5070, irb@bsu.edu.

**Study Title** “The Effects of a Reading Intervention on Fifth-Grade Student ‘Word-Callers’ Reading Comprehension.”

**Parental Consent**
I give permission for my child to participate in this research project entitled, “The Effects of a Reading Intervention on Fifth-Grade Student ‘Word-Callers’ Reading Comprehension.” I know that a word-caller student is about 1.5 grade levels higher in decoding accuracy compared to their comprehension instructional level, therefore I feel my student will benefit from this study as well, therefore I feel my child will benefit from this study.

I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my permission for my child to participate. I understand that I will receive a copy of this informed consent form to keep for future reference.

__________________________  _______________________
Parent’s Signature              Date

**Researcher and Interventionist Contact Information:**
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APPENDIX C

Sample Lesson from Experimental Group Teacher
Experimental Group Lesson Plan Example

*Using same text material both days. Thus providing repeated readings and extra practice with each strategy.

*Focus on modeling five strategies (predict, question, clarify, visualize, summarize)

*Provide much student practice in five strategies (predict, question, clarify, visualize, summarize)…. allowing for more student practice and less teacher modeling in middle and end of semester.

*During the reading, cue students to use the graphic organizer chart. And allow students to talk to partners often about the text read and about the strategies they are using to help them understand.

**Materials:**
- wipe board
- display posters of each strategy
- multiple copies of text being read
- graphic organizers for each student to record their strategy use

**Day One:**

1) **BEFORE READING:**
   *Discuss book’s title, cover illustrations, and information on the back cover. Model predictions. Have them make some initial predictions; have students’ work in pairs to preview the illustrations and key words and record them on their graphic organizer.
     *If using fiction, discuss students’ past experiences that relate to the book to activate their prior knowledge (discuss this as making connections).
     *If using non-fiction, ask students what they know about the topic.

   *Encourage students to think about questions they would like answered; model and discuss as a group. Begin with … “I wonder…” Add their questions to the graphic organizer as well.

2) **DURING READING:**
   *Encourage students to hunt for portions of text that would be good sources of questions to ask others after reading. Have the students write these questions down while reading.
   *Remind students to use their copies of the clarifying bookmarks to help them with words or ideas that are tricky. Tell them to be prepared to share with the class one difficult spot in the text and how they clarified it.

   *Have students read the text silently. (You will rotate from student to student
and coach them individually on their strategy use.
*Student’s can reread the text if done early to ask questions or identify clarifications.

3) **AFTER READING:**
*Discuss the strategies used:
  * *Model your questioning* for your students and *invite them to share* their questions. Encourage students to use good social skills by prompting answers politely and making good eye contact.
  * *Refer to the predictions made prior to reading. Model how to check a prediction* to see if it came about or was changed during the reading. Have *students take turns checking other predictions* against what they have read.
  * *Model on wipe board your visualization made. Invite students to share theirs.*
  * *Model one word or ideas and how to clarify it.* Have your *students share one point they clarified and the strategies that they used* for clarifying.
  * *Either model a summary, guide the group in making a summary, invite students to summarize the text.* Have everyone record the summary on the graphic organizer.

  * *Ask students to reflect* on the strategies and invite them to tell the group which strategy helped them the most and why. Give examples and model reflection if necessary.

**Day Two:**

1) If in the middle of the text, summarize the last reading selection before previewing the current one. Refer to the graphic organizer they used the day before.

2) If text was finished day before, reread the story and see if they can gather extra/different predictions more in-depth at end, clarifications less, visualizations become clearer, or questions are more in-depth. (Like watching a movie the second time through)

3) Use Day One Before, During, After guidelines and continue with Day Two.

  * If time, you can do an extension activity with the story to see if their comprehension level increased and this allows for student’s to use higher-order thinking questions.
  - For example: Make a comic strip using your summary and visualizations made.
APPENDIX D

Fidelity Self-checklist/Sample Lesson from Control Group Teacher
Interventionist Fidelity Checklists

*Only write-in what mini-lesson on the line if one was done that day

WEEK 3

Date 1/16 Day 6: Time of Day:
All #2 students met for 50 minutes
Absent students (if applicable):
We focused on: Viewable informational text comp.
*Whole group-Mini-lesson on:
Text used: WS Titanic, 37

Date 1/18 Day 8: Time of Day:
All #2 students met for 50 minutes
Absent students (if applicable):
We focused on:
*Whole group-Mini-lesson on:
Text used:
ISee

WEEK 4

Date 1/14 Day 7: Time of Day:
All #2 students met for 50 minutes
Absent students (if applicable):
We focused on: Highlighting - preread (V/L)
*Whole group-Mini-lesson on:
Text used: Basal Reader-Assessments (Pz-4)
"Six Brave Students"

Date 1/16 Day 9: Time of Day:
All #2 students met for 50 minutes
Absent students (if applicable):
We focused on: Literary text comp. - humor in literature
*Whole group-Mini-lesson on:
Text used: Rusty's Song
APPENDIX E

Observational Fidelity Checklists
Fidelity Observation Form

Note to observer: Copy this page then give to the observed interventionist.

**Interventionist:**

**School:**

**Date:**

**Time:**

Was the Observation Scheduled or Drop-in?

**Field Notes:**

**Study Items Seen:**

Students on-task/engaged?

Much   Fair   Poor

Students reading carefully-leveled reading passages?

Yes   No

Strategy Instruction:
- Predicting
- Imagery
- Clarifying
- Questioning
- Summarizing

Teacher roles:

Direct-instruction seen:

Interventionist modeled: (amount of time in tally marks)

**Kudos for:**

**Food for thought:** Consider the following:
APPENDIX F

Parent Letter and Feedback Chart
Word-Caller Reading Comprehension Intervention Parent Letter

April __________, 2013

Dear Parent and Guardian of __________________________,

Thank you again for allowing your child to participate in the after-school reading experience aimed at improving all students’ reading skills. We have completed the intervention and the students enjoyed the activities.

As promised in the initial letter, I have attached the results from the assessments given during pre- and post-testing. As you look at the attached report, keep in mind the reading procedures. During the Reading Comprehension test, the student read stories, retold the story in their own words, and answered questions about the passage. You will be able to compare the results from the pre-test given in January, and the post-testing after the intervention was completed in April. If you have any questions, please feel free to contact me.

Again, thank you for your cooperation, and thank you for taking a large interest in your child’s reading comprehension achievement.

Sincerely,
Christina E. Grant

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Word-Caller Reading Comprehension Intervention Results

January, 2013  April, 2013

Reading Comprehension Level: ____________________________ (on a scale of A-Z….. The closer to Z the student is, the higher their reading comprehension achievement is)

*A Skilled Fifth-Grade reader will have a score in the range of X-Z. A Skilled Sixth-Grade reader will have a score of Z and will continue to gain in their comprehension ability of harder texts.

Reading Comprehension Retell: ____________________________ (on a scale of 1-17… The higher the score, the more detailed the student was when retelling the story)

*A Skilled reader will have a score in the range of 12-17.

Reading Comprehension Questions: ____________________________ (on a scale of 1-5…. The higher the score, the more questions the student answered correctly)

*A Skilled reader will have a score in the range of 4-5.

Reading Accuracy: ____________________________ (on a scale of 1%-100%…. The higher the score, the more accurate the student was at the reading of the words)

*A Skilled reader will have a score in the range of 95% to 100%.

Reading Fluency Integration Score: ____________________________ (on a scale of 0-4… The higher the score, the more fluent the student was when reading the passage)

*A Skilled reader will have a score in the range of 3-4.
APPENDIX G

Reflective Interview Protocol
Reflective Interview Protocol

***Ask students the following questions after the assessments are completed.

1) What does comprehension mean?

*If the student does not know….. state “Comprehension means understanding what you are reading and being able to tell a friend about what you read.”

2) On a scale of 1-10….. 10 being the best…. And 1 being really bad. What number are you at when being able to comprehend what you read?

3) When finished reading ask………..What were you doing to understand on the last story you read here?

   a. What strategies were you using to understand?

4) Did you struggle when reading about _________________?

   a. If so, what did you do?

*Explain. (Tell me more)