

ABSTRACT

Title of Document: AN INVESTIGATION OF MIDDLE SCHOOL
READING PERFORMANCE BASED ON
THE 6TH GRADE READING INSTRUCTION
SETTING

Kelly Sue Benning, Doctor of Education, 2011

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This study investigated the reading performance of students who attended the participating schools from 5th to 8th grade, based on the setting where 6th grade reading occurred. The study also investigated the performance of students whose NCE reading scores on the Terra Nova test fell in the upper and lower third based on receiving 6th grade reading instruction in an elementary or middle school. The results found no significant differences based on setting from 5th to 8th grade. When the element of setting was removed and the scores for the three groups were compared over time, significant results were found. Post-hoc tests revealed students' scores significantly dropped from 6th to 7th grade, but increased significantly in 8th grade. The upper third, however, had declining scores all through middle school. Randomly selected elementary and middle school principals were interviewed to determine whether there were differences in the structure and organization of 6th grade reading programs between settings.

AN INVESTIGATION OF MIDDLE SCHOOL READING PERFORMANCE
BASED ON THE 6TH GRADE READING INSTRUCTION SETTING

By

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Dedication

This dissertation is dedicated to my three children, Maya, Lana and Lauren Codina for their patience and understanding of all the time spent attending classes, writing the dissertation and studying for the past four years!

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CHAPTER I

Introduction

Statement of the Problem

The reading achievement of adolescents is of great concern to educators and researchers. The reading scores for high school seniors have decreased since 1992 (Institute for Educational Sciences (IES), 2007). Students are graduating with less ability to read fluently, and the percent of students reading at or above the basic level has fallen from 80% to 72% (IES). Students performing at or above the proficient level decreased from 40% to 35% (IES). The National Assessment of Educational Progress (NAEP) reading test is administered to students in grades four, eight, and twelve every other year. In 2004, these results indicated approximately one-third of all students in grade four read proficiently at grade level (NCES, 2004). Two-thirds of these students remained or fell below the proficient level in reading comprehension. The NAEP (2007) report also found that 69% of students in grade eight fell below the proficient level in comprehension at grade level. Additional research has shown reading comprehension is a serious problem for students in middle and high schools (Underwood & Pearson, 2004).

For example, research has indicated students in grade four who come from economically disadvantaged backgrounds show a decline in reading comprehension from which they seldom recover (Chall & Jacobs, 2003). Some of these problems in comprehension include the difficulties students experience when negotiating complex texts and the poor quality of many textbooks (Underwood et. al, 2004). One solution to the problems students experience is to have teachers implement specific reading interventions to help readers comprehend texts (Underwood, et. al).

Title I of the No Child Left Behind Act of 2001 (NCLB) requires all students in grades three through eight to read on grade level by the year 2014. However, each state determines what skills students need to possess to read on a particular grade level, causing inconsistencies in what on grade level reading means. This requirement has forced school personnel to take a realistic look at the feasibility of such a requirement and what they can do to meet this requirement. Given the aforementioned data on reading proficiency levels for students in grades four and eight, reading comprehension needs to be addressed as a curricular issue in middle school to increase overall levels of reading at the secondary level.

Reading Achievement in the Participating School System

Reading achievement in a school system that serves a large number of children with parents in the military (hereafter referred to as the participating school system) has lagged behind other core subject areas for the past few years. Data available at the system data warehouse website show from 2006 through 2008, the mean national percentiles in reading for 3rd, 6th, and 7th grade students were lower than in the other core subject areas. In 2008 the 6th grade mean national percentile in reading was 66, in language arts it was 68, in math 70, and science 68. All schools are required to establish school-wide goals, and most schools with these three grade levels have chosen reading as the area where the most need for improvement exists (S. Gurley, personal communication, September, 2009).

In the participating school system, middle grade students can be educated in either an elementary (K-6) or middle school (6-8) setting. Though not fully documented, there appears to be an achievement gap in reading comprehension between students who attend

6th grade in an elementary school and students attending middle schools (Sandra Embler, personal communication, September, 2008). Students who receive reading instruction in a 6th grade elementary school are believed to score higher on the TN reading test than students in a middle school. This raises the issue as to whether the setting where 6th grade reading instruction occurs has an effect on the reading achievement of students in 6th grade as well as throughout middle school.

There are several issues surrounding the curricula offered in these schools. Reading instruction typically takes on a lesser role in middle school settings, with the emphasis academically for students on the four core subject areas of math, language arts, science, and social studies. In some of the middle schools, the language arts curriculum requires teachers to incorporate reading into the class, and reading is not treated as a stand-alone subject. It is often difficult for teachers to find time to devote to the teaching of reading during the language arts period at the middle school level. Depending on the individual teachers, students may or may not receive specific reading instruction as a part of the language arts class (Maria Buchwald, personal communication, October 2008). Although the school system requires reading to be taught daily in combination with language arts, not all middle school personnel set aside a specific amount of time for the teaching of reading. Previously, some middle schools within this school system did not offer any formal or structured reading as a stand-alone subject in 6th grade (Susan Sigerseth, personal communication, September, 2008).

The Challenges of Middle School

The educational environment experienced by students as they transition from elementary to middle school can have an adverse effect on achievement (Eccles &

Midgley, 1989). The types of changes that occur in middle school include an increase in teacher control and a decrease in the quality of the relationships between teachers and students (Eccles, Wigfield, Midgley, Reuman, Mac Iver, & Feldlaufer, 1993). Students in the participating school system often transfer from a 5th grade elementary setting into a 6th grade middle school setting, where students have to face these issues at an even earlier age. In addition, middle school schedules and the organization of the curriculum differ from elementary schools. Students in middle school change classes several times per day, with instruction given by a different teacher in each class. Classes can range in length from 45-50 minutes on a daily schedule or 80-90 minute classes on a block schedule. Students in middle school typically have four core classes and three elective classes. Students are placed on a “team” with four teachers and rotate through the core classes with the other students from their team. Although reading as a subject is required for 6th grade students by this school system’s leadership, not all middle schools offer reading as a separate class to students in 6th grade. In contrast, students in a 6th grade elementary school in this school system receive reading instruction daily within the 90-minute block of time scheduled for language arts and reading instruction. These differences in how the curriculum is structured may impact the reading achievement of 6th grade students.

Overview of Reading Interventions for Middle School

Allington (2005) noted there are ten pillars of effective reading instruction essential for successful reading programs. The first five pillars - phonological awareness, phonics, fluency, vocabulary, and comprehension - are emphasized and taught in elementary settings. Allington recommended the latter five skills – classroom organization, matching pupils and texts, access to interesting reading materials, writing

and reading, and tutoring be taught to more advanced readers. Several studies have researched the first five pillars and specific strategies designed to improve reading comprehension for the adolescent readers (Calhoon, 2005; Lingo, Slaton, & Jolivet, 2006; Mason, 2004).

Reading comprehension research has established reading instruction is necessary for adolescent readers, and instruction needs to continue through the middle school grades (Slavin, Chamberlain, & Daniels, 2007). Much of the research from the past ten years confirms the need for structured reading programs with adolescent readers which use evidence-based interventions designed to improve reading comprehension (Calhoon, 2005; Guthrie, Wigfield, & Humenick, 2000; Hagaman & Reid, 2008; Lingo, et. al., 2006; Onachukwu, Boon, Fore III, & Bender, 2007; Radcliffe, Caverly, Hand & Franke, 2008). These studies focused on strategies that assist students in reading content area texts as well as nonfictional and academic information. It was hypothesized that students instructed in reading in 6th grade elementary school would achieve higher scores on the TN reading test than students who attended middle school for 6th grade.

A review was conducted to determine whether there was any existing research investigating the structure and configuration of middle school. There are studies examining how school configuration affects motivation, self-esteem, and overall achievement, but no research was found examining whether the setting or school configuration impacted the reading achievement of students. In Wigfield, Byrnes, & Eccles, (1994), it was found that self-esteem did not change during elementary school but decreased following transition into the middle school. Researchers have examined how self-esteem changes across early adolescence. Early adolescents' self-esteem is lowest

beginning with the transition into junior high or middle school in 7th grade, but during the 7th grade year it increases (Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991). Students who begin the transition into middle school in 6th grade, one year younger than students in the above study, may take longer to regain some self-esteem in 6th grade, which could have an impact on achievement.

Statement of Purpose

The purpose of this study was to determine if there were differences in the 6th, 7th, and 8th grade Terra Nova (TN) normal curve equivalent (NCE) reading scores of students, based on whether they were enrolled in an elementary or middle school in the participating school system during 6th grade. Students who received reading instruction in a resource room or were enrolled in a *READ 180*TM class were not included in this study. The study also explored whether enrollment in an elementary school for 6th grade resulted in higher reading comprehension scores among students scoring in the upper and lower thirds of the TN reading test compared to similar students who attended middle school for 6th grade. The comparisons were examined at 6th, 7th, and 8th grades using the TN NCE reading scores of the participants. A third purpose explored the organization and structure of 6th grade reading programs in a sample of elementary and middle schools in the participating school system.

The NCE scores from all participants for 6th, 7th, and 8th grades were analyzed to determine if there were statistically significant differences between students who received their 6th grade instruction in an elementary school and those who received reading instruction in 6th grade in a middle school. The study examined if there was a significant difference in a change in scores from 5th to 6th grade for students between settings, and

again from 6th to 7th and 7th to 8th grade. Terra Nova Reading Scale scores from the 2004-2005, 2005-2006, 2006-2007, and 2007-2008 school years were used. The 2004-2005 scores were used to establish which third student scores fell in their 5th grade school year for statistical analyses.

The scores for each of the years were clustered into thirds according to the TerraNova Teacher's Guide (CTB McGraw-Hill, 2009). This placement was based on the NCE score reported by TN, which clusters the NCE scores for students into above average, average, and below average. For this study, the students were placed in one of three clusters: 1) the upper third, 2) the middle third, or 3) the lower third. The students were not placed in a cluster based on their NCE score placing them in the upper, middle, or lower third of the 889 participants, but which third their NCE reading score fell according to the TN distribution. The analyses were performed for the entire population sample, students in the upper and lower thirds. The purpose was to explore whether students showed more gains on the TN reading test based on the setting where 6th grade reading instruction occurred.

The study also explored the organization and structure of 6th grade reading programs in a random sampling of elementary and middle schools. A telephone interview was conducted with nine principals from elementary and middle schools randomly selected from all elementary and middle schools in this school system. An open-ended interview protocol was used and consisted of 14 questions inquiring as to the types of reading programs that were in place, the amount of time devoted to reading per day, the strategies and texts used to supplement the instruction, and what other resources in instruction were used.

Interviews allowed for more detailed explanations by the principals in the aforementioned areas. The information collected was qualitatively analyzed and the results displayed using frequency counts to report the characteristics of reading instruction in both settings. The study described the differences and similarities between the reading programs and settings to determine whether any differences found in the scores of students from 5th to 8th grade on the TN reading test may possibly be attributed to the setting and type of program.

Chapter II of this study discussed several effective strategies for improving reading comprehension for the adolescent, struggling reader which can be used when students are reading academic texts. The study examined whether schools referred to or implemented any of these strategies into the curriculum. The findings from this review were useful for determining why there may have been statistical significance of any differences found between the groups.

Research Questions

The study was guided by the following four research questions:

1. Are there differences in the 6th grade TN reading scores for students who received reading instruction in either an elementary or middle school in 2005-06 for the participating school system? Are differences manifested over time for these students in 2006-07 in 7th grade and 2007-08 in 8th grade?
2. Do students scoring in the lower third on TN scores in 5th grade manifest differences in 6th grade TN scores in 2005-06 based upon their having received reading instruction in either an elementary or middle school in the participating school

system? Are differences for the lower third students manifested over time in 2006-07 in 7th grade and 2007-08 in 8th grade?

3. Do students scoring in the upper third on TN in 5th grade manifest differences in 6th grade TN scores in 2005-2006 based upon their having received reading instruction in either an elementary or middle school in the participating school system? Are differences for the upper third of students manifested over time in 2006-07 in 7th grade and 2007-08 in 8th grade?

4. Were there instructional or programmatic differences in how reading was taught and emphasized in the elementary and middle school in the participating school system during 6th grade in 2005-06?

Significance of the Study

Reading instruction for adolescents has emerged as a critical issue in our nation as shown in the results of the NAEP for students in 4th, 8th, and 12th grades. There are a number of recent studies which investigated the issues and problems with reading comprehension in middle grades. In this school system, reading is a required course to be offered to all 6th grade students to prepare students for the more difficult informational text reading that occurs in the upper grade levels.

The results from this study have the potential to influence current policies and practices regarding reading instruction for the adolescent reader in this school system. The comparison of the 7th and 8th grade scores for maintenance in reading comprehension will contribute to the knowledge base so sound decisions can be made regarding reading instruction programs within schools that serve a large number of children with parents serving in the military. The results may also influence the organization of these schools,

with possible recommendations for continuing reading instruction through 8th grade, or for 6th grade students to remain in an elementary setting, should the results demonstrate superior performance in reading by elementary 6th grade students. This study provided results to the leaders of this school system, showing the differences in scores that may have resulted from the differences in the type of reading instruction between the elementary and middle school settings.

Definition of Terms

Elementary setting. The school system categorizes all 6th grade instruction as occurring in an elementary or middle school setting. The curriculum in an elementary setting typically focuses on language arts, reading, math, science, social studies, health, and physical education. There is time allotted in the school day for the sole purpose of teaching reading. This usually occurs before or after the language arts class in a 90 minute to two-hour block of time.

Evidence-based interventions. Rigorous studies that show the practices researched to be associated with improvements in reading proficiency of students (Slavin, Cheung, Groff, & Lake, 2008).

Middle school setting. All 6th grade instruction is categorized as occurring in an elementary or middle school setting. The curriculum in a middle school setting typically focuses on a range of subjects, including math, science, social studies, and language arts. Several elective classes are offered at each grade level and the students choose elective classes based on their interests. In some middle schools a reading class is a fifth core subject required for all 6th grade students, but this is not consistent across all schools that

serve a large number of children with parents in the military. The time per day given to the reading class may also differ based on the type of schedule in place.

Normal curve equivalent score (NCE). A score reported by the Terra Nova for each student which can be used for comparison purposes. It is an interval score and ranges from 1 to 99.

Reading time. Amount of instructional time specifically devoted to teaching reading.

Researched based instructional interventions. These are interventions and strategies demonstrating improvement in reading comprehension that have been researched more than once over time and are commonly found in books offering strategies to use when teaching reading comprehension. These interventions focus on motivation, comprehension skills, phonological skills, vocabulary development, self-directed strategy instruction, embedded questioning, and story-mapping procedures.

Structured reading. This is a clearly defined reading program that is followed on a consistent basis and includes a prescribed curriculum containing a comprehensive set of resource materials.

Struggling reader. A reader who is unable to read skillfully because of deficits in phonological skills, comprehension, correct usage of reading strategies and motivation to read (Mason, 2004).

Terra Nova Test (TN). This is the standardized test administered every spring in the participating school system. The test is also administered in 16 states throughout the United States and overseas. The latest version is the 3rd edition, which was printed in

2009 (CTB McGraw-Hill, 2009). It is a norm referenced test and tests students in reading, language arts, science, social studies, math, spelling and vocabulary.

Unstructured reading program. Reading instruction provided by teachers with minimal guidance from the administration. Typically the teacher in an unstructured reading program is not provided with a set of materials for classroom instruction, is expected to find their own resources and is granted wide latitude with respect to format, content, technique and methodology.

CHAPTER II

Review of the Literature

The reading achievement of adolescents is of great concern to educators and researchers. The reading scores for high school seniors have decreased since 1992 (Institute for Educational Sciences (IES), 2007). Students are graduating with less ability to read fluently, and the percentage of students reading at or above the basic level has fallen from 80% to 72% (IES). Students performing at or above the proficient level decreased from 40% to 35% (IES). The National Assessment of Educational Progress (NAEP) test is administered to 4th, 8th, and 12th grade students every other year, and in 2004, these results indicated that approximately one-third of all 4th grade students read proficiently at grade level (NCES, 2004). Two-thirds of 4th grade students remain or fall below the proficient level in reading comprehension. The report from the NAEP (2007) also reported that 69% of 8th grade students fell below the proficient level in comprehension at grade level. In addition, other research has shown that reading comprehension is a serious problem for students in middle schools and high schools (Underwood & Pearson, 2004). Students who have poor comprehension skills continue to make little progress and many do not get the reading instruction needed in middle school to help them better achieve in high school. The reading gap continues to be of concern for educators. Struggling readers are continuing to achieve well below their peers. Students in high school scored lower in reading comprehension when compared to their elementary and middle school scores (Mason, 2004).

Overview of the Study

This study examined the differences between the elementary and middle schools and the unique characteristics in each setting. There are many changes that students encounter when entering a new school setting, and as previous research has shown, the students entering middle school face many challenges that can affect their learning (Eccles & Midgley, 1989). Students who are in an elementary 6th grade are the oldest students at school, unlike the 6th grade students in the middle school, where 6th grade students are the youngest at school. Those students at the middle school often show a drop in self-esteem and do not believe they are competent (Wigfield & Eccles, 1994). Some middle schools foster academic competition between students, which can affect the students' level of motivation; they may have lower self-esteem and their academic performance is lower than what it was when they attended elementary school (Wigfield, et al., 1994).

The participants in this study were students enrolled in schools overseas that serves a large number of children with parents in the military for 5th, 6th, 7th, and 8th grades. The students who scored in the upper and lower thirds on the TN reading test were grouped for the four years and their scores compared over the years to determine whether there was a differential impact on achievement throughout middle school. Typically, middle schools are more formal in their instruction, teachers have more students in a classroom, and it is more difficult to get to know students on a personal level (Eccles, Wigfield, Midgley, Reuman, Mac Iver, & Feldlaufer, 1993). This can lead to students feeling less competent and able to perform well in school, including performance on standardized tests. According to Eccles and Midgley (1989), adolescents

need positive support from adults who are not their parents and search for autonomy and the opportunity to participate in their decision making during school. Students in the elementary setting typically receive this support, but in middle school, teachers do not have the time or the resources to provide such an environment. Sixth grade students in middle schools in this school system are faced with dealing with these issues one year earlier than students who enter middle school in 7th grade. Middle school has been noted to be one of the most important institutions where students can regain motivation to learn and improve achievement (Carnegie Council, 1989). For the struggling reader, this can be a pivotal year in growth and achievement, and the setting may play an important role in the academic progress of these students.

Conceptual or Policy Foundations

In 2001, the No Child Left Behind Act (NCLB, 2001) was passed, requiring all students to be proficient in reading and at grade level by the year 2014. However, each state determines what at grade level means, so the reading levels of students across the states may differ. In 2007, more schools failed to meet the testing target than in any previous year. Schools are scrambling to find teaching methods and strategies that are effective for improving reading comprehension (NY Times, 2008). The law has increased the focus on student achievement and is forcing schools to consider approaches to the teaching of reading based on the federal requirements.

The focus on improving reading achievement, including reading comprehension, spans all grades, and the challenges are greater as students get older. Chall and Jacobs (2003) noted when students reach 4th grade they often enter the 4th grade slump, the juncture when reading more advanced academic texts becomes problematic for the

struggling readers. According to the authors, these students continue slipping in their ability to comprehend content area texts and score poorly on standardized reading tests, often through middle and high school.

The National Assessment of Educational Progress (NAEP) test is administered to all 4th grade students every other year across the United States (as well as to all 8th and 12th grade students). The selection of these particular grades demonstrates the importance of reading comprehension for adolescent readers. A report from the NAEP stated four in ten 4th graders read below the basic level (U.S. Dept. of Education, 2003). This demonstrates the continuing need for reading instruction in the upper elementary and middle school grades.

The reading scores from the TN reading test for students in the participating school system were lower in 2008 than the scores in language arts, math, and science at most grade levels reported. For example, 3rd grade students scored as a group at the 60th percentile in reading, but at the 65th, 64th, and 70th percentiles in language arts, math and science, according to the data reported by the data warehouse website for the school system examined in this study. In 2006 and 2007, the reading achievement percentiles were lower in 3rd, 6th, and 7th grades. These data demonstrate reading comprehension is an area where leaders of the schools need to continue to implement effective instruction to increase achievement in reading across the middle grade levels.

Literature Search Methods

To inform this study a comprehensive search of the research literature was conducted using the University of Maryland library research portal. Articles related to reading comprehension, issues with reading comprehension with adolescent readers, the

problems associated with difficulties in reading comprehension, and the strategies and interventions which improved reading comprehension for the adolescent readers were identified. Electronic searches were conducted using the ERIC, JSTOR, PsycINFO, and EBSCO databases. Internet searches for websites were conducted using www.google.com to obtain the web pages for the International Reading Association, the National Assessment on Educational Progress (NAEP), and the Institute of Educational Sciences (IES). Access to various journals, such as the *Journal of Educational Psychology*, *Reading Research Quarterly*, *Learning Disabilities & Practice*, *Journal of Research in Character Education*, and *Exceptional Children* was obtained using www.google.com. All searches were conducted for articles written within the last 20 years.

There were a limited number of studies specifically geared toward the problems facing adolescent readers and reading comprehension. There were no articles found addressing the setting where adolescent readers receive 6th grade reading instruction. However, there were many articles regarding strategies and interventions that successfully improved reading comprehension for adolescent readers. The key words and search phrases most useful in this search included: (a) reading comprehension; (b) middle school students; (c) adolescent readers; (d) issues and problems in reading comprehension and content literacy; (e) content area comprehension; (f) effective teaching methods for reading comprehension; and (g) strategies and interventions to improve reading comprehension for students with learning disabilities. Other key words used were “comprehension and the struggling reader” and “problems in reading comprehension for students with learning disabilities.”

These key words and search phrases were combined in a variety of ways as different searches were conducted electronically over the course of several weeks. A total of 434 articles were found using this search format. The majority of the articles were scanned for relevance to the specific topics in this study, 68 articles were chosen for review. These articles were then reviewed to determine whether they were primary research articles or informative articles on policies, laws, and the reporting of results from national or standardized tests.

The following criteria were applied to determine inclusion of research articles in this study: (a) a specific strategy or intervention to improve reading comprehension was used; (b) the study used 5th, 6th, 7th, or 8th grade students as participants; (c) struggling readers and/or students with disabilities were a part of the study; and (d) the research was conducted within the last 20 years. Using these screening criteria, a total of 32 articles remained. Some articles were not chosen because the same authors had several articles relating to a specific strategy to improve comprehension, and the use of similar studies would have been redundant. For final review, a total of ten articles were selected pertaining to strategies and interventions; three articles and three websites were chosen for information regarding the issues surrounding adolescent literacy and comprehension, policies, and laws.

Articles relating to strategies and interventions were divided into four areas: phonological skills, vocabulary acquisition, motivation, and comprehension. The studies were selected for their research on the reading comprehension difficulties of students across the middle grades and the effects the particular intervention used in their study had

on improving reading comprehension, vocabulary acquisition, motivation, and phonological skills. The articles are summarized in Appendix B.

Research on Middle School Reading Interventions

In addition to the articles discussed above, a total of ten research articles were identified for review. See Appendix B. All of the articles selected for review met the criteria specified above. These included strategies for peer tutoring, motivating students by having them read material of interest to them, having students read at their grade level in reading, monitoring their progress, writing and summarizing what was read, and learning how to self-regulate and organize their reading assignments. The articles reviewed contained various evidenced-based interventions designed to improve reading comprehension for struggling adolescent readers. All ten studies included students in grades five through eight in their samples, with one study using 9th grade students as participants. In all of the studies, the rationale for the research included problem statements concerning the reading difficulties students have with understanding vocabulary, phonological skills, comprehension, word attack skills, applying background information, or monitoring their own reading abilities.

Seven of the studies were randomized controlled studies, containing both control groups and treatment groups. Two of the studies were single subject research studies that used multiple baseline probes, with all students receiving the interventions and post-testing later for maintenance. One study was qualitative in design, with data taken from observations, field notes, videotape records, surveys, and teacher logs. Most of the studies tested specific strategies for improving reading comprehension. Three of the

studies also investigated effects on vocabulary acquisition, motivation, and phonological skills on the reading comprehension of the participants.

Interventions and strategies. The strategies tested to improve reading comprehension included: a Think Before, While and After Reading (TWA); a Self-Regulated Strategy Instruction (SRSD); SRSD with paraphrasing (RAP); Concept Oriented Reading Instruction (CORI); a Predict, Locate, Add and Note (PLAN) strategy for science classes; peer tutoring; corrective reading and story-mapping. In the following section, each study is critiqued for its credibility, validity, and use as an evidenced-based strategy that can be incorporated into a comprehensive and structured reading program.

Mason (2004) investigated self-regulation as a strategy for students who struggled in reading. Intrinsic motivation was determined to play a role in students achieving mastery level in reading comprehension. The study's strategy was entitled the "Think Before Reading, Think While Reading, and Think After Reading" (TWA) strategy. There were a total of eight groups of participants - 32 5th grade students from elementary schools. Four groups of four participants received the TWA strategy in combination with the self-regulation strategy, and four groups of four participants received a reciprocal questioning (RQ) strategy. The study examined the effects of multiple self-regulated strategies on reading comprehension of expository texts. The TWA strategy was compared to the RQ approach. Oral and written measures were used to assess performance in reading comprehension. Pretests and posttests were administered. The results showed the TWA strategy was more effective than the reciprocal questioning instruction for improving expository reading comprehension. The TWA strategy promoted student independence in using the strategy throughout reading expository texts

in science and social studies. However, there were no differences found in the written retell responses, self-efficacy, intrinsic motivation, or social validity from the results.

The study provided credible information for use of the TWA strategy for the reader as well as the opportunity for replication of the study. However, the hypothesis that if reading comprehension performance for students on oral retell improved, then the effect would generalize to a written retell, was not supported. There has been a substantial amount of research on student self-monitoring in comprehension using various strategies, and this study provided data that demonstrated students were able to retain key information and learn oral summarization skills.

In the Hagaman and Reid (2008) study, the SRSD intervention was also implemented in combination with a Read a paragraph; Ask myself, “what was the main idea and two details?” and Paraphrase (RAP) strategy. The three student participants were enrolled in a reading enrichment program in a 6th grade elementary setting. This study replicated previous studies investigating the effectiveness of RAP with struggling readers combined with a well-documented SRSD strategy. Retell and short-answer questions from expository reading materials were used for assessment purposes. The effects of the strategy were immediate and pronounced for all participants. One limitation of this study was the difficulty in differentiating whether the results were from the RAP strategy or the SRSD strategy. The authors reported this strategy had a significant effect on improving comprehension for the participants, although maintenance was not checked after the initial two-week posttest check.

Onachukwu, Boon, Fore, and Bender (2007) investigated the effects of a story-mapping strategy on reading comprehension. Three male students in the 8th grade with

learning disabilities participated in the study. The intervention took place in the reading room. A literature textbook was used during the intervention and the participants were assessed using an assessment workbook that accompanied the textbook. The students were given extra points as rewards when putting forth effort and staying engaged and on-task. This strategy measured students' percentage correct on reading comprehension questions and percentage correct for word identification of story grammar elements.

The results indicated the higher the accuracy for identification of story grammar elements, the higher the percentage correct on comprehension tests. This single subject research held credibility within the setting, but the results could not be generalized to other settings. The students were given a rigorous intervention of 23 stories throughout the duration of the study, demonstrating the effectiveness of this particular strategy within the sample studied.

In the Lingo, Slaton, and Jolivette (2006) study, a corrective reading strategy was the independent variable. The participants were seven middle school students from special education classes who received reading instruction in the resource room and had social goals on their IEPs. The study was a replication of a multiple probe design across students to evaluate the effectiveness of the corrective reading strategy. Seven general education students were chosen for the comparison group. The intervention was taught for 45 minutes daily over a three-month period. The strategy measured oral reading fluency as well as comprehension.

The results showed six of the seven students increased their reading ability based on the results of the Woodcock-Johnson reading test, the measure used for assessment. The participants all demonstrated substantial evidence of the transfer of fluency gains for

grade level reading passages. They also showed an increase in correct words per minute read. The study did not lend itself to generalization, however, as no relationship was found improving reading fluency and reducing inappropriate behaviors. There was no improvement for any of the participants for appropriate behavior. The study sample was small, and the article was unclear as to the specific materials used for the instruction in class, other than to state they used the Corrective Reading program. The participants had a wide range of reading ability and students moved through lessons at different paces.

In the Mastropieri, Scruggs, Mohler, Beranek, Spencer, Boon, and Talbot (2001) study, a peer-tutoring instructional approach was used as the intervention for improving reading comprehension. The study involved 24 middle school students with mild disabilities enrolled in 7th grade English classes. The study included a treatment and control condition which was implemented over a 5-week period. The materials used were high interest, low vocabulary readings appropriate for the students' abilities. The reading passages for the control condition were the same as those used in the treatment condition. The pre- and posttests for comprehension were criterion referenced. The study was qualitative in design, using journals, observational records, teacher interviews, and field notes as measures for data collection.

The results suggested that appropriately administered peer tutoring might be a useful tool for increasing reading comprehension. The teachers responded the intervention had very positive effects. The teachers noted immediate benefits were observed by providing additional reading time to the students. The authors stated the results suggest that peer tutoring can be implemented effectively and improve strategy use and reading comprehension for middle school students with disabilities. The students

remarked after completion of the study, however, that reading was still difficult at times, even after working with a peer tutor. The study had a small sample size and was conducted for only five weeks. The overall attitudes of the students were positive in the post-treatment phase and reading comprehension did improve overall for the participants.

Dole, Brown, and Trathen (1996) investigated pre-reading instruction on comprehension using narrative and expository texts in which teacher-directed and interactive strategies were examined. In their first investigation, the subjects were 67 5th and 6th grade students. In the second investigation, there were 63 6th grade participants. Participants were instructed in story content, strategy instruction, and basal reading instruction. The story content intervention was a strategy that demonstrated an effect on declarative knowledge in comprehension. The student-centered strategy instruction intervention promoted activating and promoting declarative knowledge for understanding before reading. The teacher-directed strategy instruction investigated the effects on the development of the readers' procedural and conditional knowledge to determine if it improved comprehension of texts. The strategy included instruction prior to reading that focused on informing readers they were purposeful, thoughtful, and reflective about the reading and the reading process. The basal reading instruction program used was a widely accepted program chosen in lieu of a control group, as a control group receiving no reading instruction was not a viable option.

The findings showed students' comprehension increased significantly with the teacher-directed strategy group. When teachers modeled think-aloud techniques, and coaching in class, students became more active in their reading and took more control over their learning. The authors maintained the students considered as at-risk readers

learned the necessary strategies to improve in reading comprehension, highlighting the importance of procedural and conditional knowledge in the reading process.

The traditional basal instruction program was chosen as the alternative treatment based on its widely accepted practice in elementary classrooms. After conclusion of the study, tests were administered to all three groups, and the scores for students in the basal instruction group showed the least amount of improvement in reading comprehension. In all three groups, the students showed improvement in comprehension, but the strategy instruction group demonstrated a higher difference in test scores from instruction to independence. The findings highlighted the importance of conditional and procedural knowledge in reading for adolescent readers, suggesting this knowledge could be just as beneficial for readers as declarative knowledge. The results also indicated the teacher-directed strategies of modeling, coaching, and thinking aloud were effective.

In the final study on comprehension, Radcliffe, Caverly, Hand, and Franke, (2008) investigated a Predict, Locate, Add, and Note (PLAN) strategy on comprehension in 6th grade science classes. The purpose was to provide systematic, structured reading instruction in the content area to improve reading comprehension. The study was a pretest-posttest with nonequivalent-groups design. Two 6th grade classes served as participants, one a treatment group and the other a control group. The sample size was adequate, with 50 6th grade students as participants. This was a qualitative study where field notes, observations, and videos were the measures used for analysis. The study combined reading instruction with the curriculum and was implemented for five months.

Implementation of the strategy occurred in three phases: (a) preparation, (b) implementation, and (c) adaptation. Students learned the curriculum and were able to

predict what labs would cover, commented on what was known or unknown, and were able to discuss outcomes after the labs were completed. This was the only study in this review that specifically reported results with a statistical significance.

Lenz and Hughes (1990) investigated the effects of the Discover the Context, Isolate the Prefix, Separate the Suffix, Say the Stem, Examine the Stem, Check with Someone and Try the Dictionary (DISSECT) strategy on vocabulary acquisition. This strategy was a seven-step process designed to help students identify multi-syllabic words within context. The strategy was rather lengthy and complicated, and the results were mixed. The participants selected were 12 students from 7th, 8th, and 9th grades classified as learning disabled. Students were assessed through three oral reading measures and two reading comprehension measures. The findings showed gains in comprehension were inconsistent, and not all subjects demonstrated an increase in comprehension. This study led the reader to conclude that more complex strategies may not be appropriate for young adolescent readers, especially those with learning disabilities. It is important to include these findings in the current study, as it demonstrates that adolescent readers may not show improvement in reading comprehension when the interventions seem too detailed or cumbersome to learn. Compared to the TWA strategy, which involved only three steps, this strategy was not as effective with students with reading difficulties. The TWA strategy also used both oral and written measures for assessing comprehension, very similar to the DISSECT strategy measures, but required fewer steps for students to use.

Guthrie, Wigfield, and VonSecker (2000) investigated the effects of integrated instruction on motivation and strategy use in reading. The 41 participants were from self-contained general education classrooms and the students had low reading abilities. The

Concept-Oriented Reading Instruction (CORI) program was used as the intervention. This study contained two separate groups for the treatment and non-treatment groups using 3rd grade students and 5th grade students, for a total of four groups. The results were reported for each grade, but for the purpose of this critique, the 5th grade results were reviewed in more detail. The results demonstrated motivation increased more for the 3rd grade students. It also confirmed the hypothesis of the authors that motivation did not increase as much in 5th grade because these students' intrinsic motivation was lower at the inception of the study. This supported the concept that as students progress through the elementary grades, if they are not reading at or above grade level, they often lack the motivation to improve their reading skills during the middle grades.

In the Calhoun (2005) study, the Linguistic Skills Training (LST) and Peer Assisted Learning Strategies (PALS) interventions were researched for their effects on phonological skills. The sample size was adequate in this study, 32 middle school students. Students were from self-contained classrooms and all had reading difficulties. A peer-mediated approach for teaching phonological skills and reading comprehension was implemented. Students participated in three reading comprehension activities: (a) paragraph shrinking, (b) partner reading, and (c) prediction replay. These activities provided students with explicit, systematic practice with summarizing, stating main ideas, predicting story outcomes, and sequencing.

The author reported the results demonstrated significant differences between the control and treatment groups, with the peer-mediated group outperforming the contrast group in growth and comprehension. The study was implemented over a 31-week period, lending credibility to the study and the results of growth and improvement over time.

The students may not have felt confident they were better at reading comprehension, but the results confirmed their growth. According to the authors, there has been other research conducted using various strategies with peer tutoring and mediation which demonstrated success for the participants in treatment groups.

Overview of Interventions

Six of the seven studies on comprehension demonstrated the interventions were successful and had the desired impact on improvements in reading comprehension among students in grades five through nine. Improvement in comprehension was measured quantitatively through use of the Woodcock-Johnson III, tests from basal reading programs, oral reading of social studies texts, and use of criterion referenced tests. The qualitative studies used field notes, interviews, recordings, and questionnaires/surveys to collect data for analysis. Of significance is students demonstrated improvement in the maintenance stage of all studies that tested for maintenance. The studies confirmed direct instruction of specific reading comprehension strategies improved reading comprehension for struggling readers.

The results of these studies demonstrated comprehension may significantly improve for adolescent readers when explicit, direct interventions and strategies are implemented in the classroom. Students who were provided instruction in the treatment groups improved in reading comprehension across the studies. The various strategies targeted struggling readers and students with disabilities as well as compared treatment groups with control groups. These studies supported the effectiveness of the interventions on reading comprehension and the need for structured reading programs for adolescents.

The students who showed the most improvement in comprehension received explicit, teacher-directed, direct instruction.

The limitations noted in the articles included limitations for external validity due to the small number of participants in the studies, problems with replication, difficulty differentiating between two treatment conditions (Dole et. al, 1996; Hagaman & Reid, 2008), and the inability to randomly select participants (Calhoon, 2005). For the studies conducted in resource or self-contained rooms, generalizability to other settings was a further limitation (Calhoon, 2005; Guthrie et. al, 2000; Lingo et. al., 2006). Another limitation included the use of a complex strategy with inconsistent results (Lenz & Hughes, 1990). The differences in reading levels among the participants within the studies were also limitations, particularly with students in self-contained settings (Calhoon; Guthrie et. al). Some students within a group read at a 3rd grade level while others read at the 5th grade level.

Although five studies were conducted in the general education classroom, the five studies where treatments were implemented in the resource room also noted limitations.

These limitations included: having assistants in the room to help students (Calhoon, 2005); no pretesting to determine motivation prior to implementation of the intervention (Guthrie et. al, 2000); short intervention time (Mastropieri, Scruggs, Mohler, Beranek, Spencer, Boon & Talbott, 2001); differences in student backgrounds and preferences for reading material (Lingo et. al., 2006); and lack of baseline data to determine whether intervention was factor in improvement in word identification (Lenz & Hughes, 1990). Further research can be conducted by replicating these studies to provide evidence that

the interventions improve reading comprehension and are effective when instruction
adolescent readers.

Summary of Literature and Implications

The articles reviewed in this study included adolescent readers as the participants and provided structured, direct, and explicit instruction using specific reading strategies and interventions. The interventions targeted specific areas in reading comprehension where students have difficulties. Students often lack the requisite skills to comprehend the reading material presented in the middle grades and these strategies demonstrated increases in comprehension for students who struggle with reading. The independent variables were defined in each of the studies with sufficient detail to inform the reader as to the methodologies used.

The interventions implemented in these articles were effective in improving reading comprehension. Mason (2004) reported an effect size of .71 for the TWA strategy as well as a significant main effect for treatment. In the Guthrie et al., (2000) study, the effect sizes for various elements of the interventions ranged from .89 to 1.94. In the Calhoun (2005) study, the effect sizes for the LST/PALS treatment were .94, .99, and 1.10. The Dole, et al., study (1996) reported a significant main effect for instruction type using the story-mapping intervention. In the Hagaman and Reid (2008) study, participants demonstrated dramatic increases in percentage of main ideas recalled using the RAP strategy. In the Lenz and Hughes (2001) study, results showed a reduction of errors made in word identification and an increase in understanding text. All of the articles reviewed supported the use of specific interventions to improve reading

comprehension, including evidence that demonstrates improvement in comprehension for the struggling readers.

Based on the results of the studies reviewed, there are interventions effective in improving reading comprehension for adolescents. In order for overall reading comprehension for adolescents to improve, school personnel should take a closer look at these strategies to determine what can be implemented in their schools to improve reading comprehension. The RAP strategy, which can be applied across the curriculum, the PLAN strategy for use in science, the TWA strategy for thinking about what one is reading, and self-regulated strategy instruction are just a few examples of effective interventions for daily use in the classroom. The research reviewed provides a solid foundation for researchers to determine which interventions warrant replication and further study, and which studies demonstrated success for improving reading comprehension. These strategies can be incorporated by educators into their reading program to ensure the programs are comprehensive and result in successful improvements in reading comprehension for students.

The research studies discussed in this review have significant implications for the teachers and students in the participating school system. As noted earlier, there is an assumption that an achievement gap in reading comprehension exists between students who attend 6th grade in an elementary and middle school (Sandra Embler, personal communication, September, 2008). This raises questions as to the nature of reading instruction provided in each setting, including how much time is devoted each day to reading instruction, and what interventions are used in the teaching of reading. The results of this literature review will inform the reader on methods to improve reading

comprehension for the adolescent reader using a variety of researched-based strategies. The results also demonstrate the effectiveness of these strategies when working with struggling readers and students with disabilities. It is essential for educators to understand how to teach the adolescent reader the importance of acquiring skills in reading comprehension in order to be successful readers throughout their educative years. The studies reviewed support different ways to reach all students, regardless of their reading ability or level. Leaders of the schools in the participating school system will be able to assess current reading programs at the 6th grade level and use the results from this literature review to modify and adjust the reading programs to work towards higher student achievement in reading comprehension for students in 6th, 7th, and 8th grades.

CHAPTER III

Methodology

The purpose of this study was to determine if there were differences in the 6th, 7th, and 8th grade Terra Nova (TN) normal curve equivalent (NCE) reading scores of students, based on whether they were enrolled in an elementary or middle school in the participating school system, during 6th grade. The study also explored whether being enrolled in an elementary school for 6th grade resulted in higher reading comprehension scores among students scoring in the upper and lower third of the TN reading test compared to similar students who attended middle school for 6th grade. A third purpose explored the organization and structure of 6th grade reading programs in a sample of elementary and middle schools in the participating school system.

Analyses were conducted to determine whether the 6th grade setting had an effect on reading over time, by comparing the TN reading scores from 5th to 6th grade, 6th to 7th grade and again from 7th to 8th grade. Sub-analyses were also conducted to determine whether there were differences for those who were in the upper and lower thirds based on being enrolled in an elementary or middle school for 6th grade. Analyses were also conducted on each group to determine the effect setting had over time, from 6th to 7th and 7th to 8th grade.

The study also explored the organization and structure of 6th grade reading programs in a sample of elementary and middle schools in the participating school system. A 14-question interview questionnaire was created containing questions regarding reading intervention strategies used in 6th grade reading instruction. Questions regarding the textbook used for reading instruction were also included. The interviews were conducted with principals in schools where there 6th grade students were enrolled.

Research Questions

The following research questions guided this study:

1. Are there differences in the 6th grade TN reading scores for students who received reading instruction in either an elementary or middle school in 2005-06 for the participating school system? Are differences manifested over time for these students in 2006-07 in 7th grade and 2007-08 in 8th grade?
2. Do students scoring in the lower third on TN scores in 5th grade manifest differences in 6th grade TN scores in 2005-06 based upon their having received reading instruction in either an elementary or middle school in the participating school system? Are differences for the lower third students manifested over time in 2006-07 in 7th grade and 2007-08 in 8th grade?
3. Do students scoring in the upper third on TN in 5th grade manifest differences in 6th grade TN scores in 2005-2006 based upon their having received reading instruction in either an elementary or middle school in the participating school system? Are differences for the upper third of students manifested over time in 2006-07 in 7th grade and 2007-08 in 8th grade?
4. Were there instructional or programmatic differences in how reading was taught and emphasized in the elementary and middle school in the participating school system during 6th grade in 2005-06?

Design of the Study

This study was a mixed-methods design. Quantitative and qualitative methodology were used in order to provide more meaningful results. This design allowed the researcher to first extract information from the analyses of student performance data

which was then explored through principal interviews. This design provides a more comprehensive way to enhance findings which inform each other in the analysis (Onwuegbuzie, Burke, & Collins, 2009). In Hanson, Clark, Petska, Creswell & Creswell (2005), mixed methods is defined as a collection of both quantitative and qualitative data, where both types of data are collected at the same time, integrating the data in the research process. The mixed methods design enhanced this study by enriching the findings regarding 6th grade reading programs and the effect of setting on reading performance.

The study examined the effects of the school setting (elementary or middle school) in which a student completed 6th grade, on the 6th grade TN reading scores for three groups: the entire population sample of students, students scoring in the upper third, and students scoring in the lower third of the TN reading test. The study compared group scores between settings from 5th to 6th grade (the entire sample group only), from 6th to 7th grade, and from 7th to 8th grade.

The independent variable was the setting, which was a nominal variable. Nine groups were created: 1) all students who completed 6th grade in an elementary school (the elementary group), 2) all students who completed 6th grade in a middle school (the middle school group), 3) students scoring in the lower third in the elementary group, 4) students scoring lower third in the middle school group, 5) students scoring in the upper third in the elementary group, 6) students scoring in the upper third in the middle school group, 7) the entire population sample (the element of setting removed), 8) the combined group of lower third students, and 9) the combined group of upper third students. The TN scores were scaled to an NCE score, an interval level dependent variable.

The study was also descriptive in that it described the general requirements and policies in place for 6th grade reading. Furthermore, it explored the organization and structure of 6th grade reading programs based on telephone interviews with a random sampling of elementary and middle schools in the participating school system.

Dependent Measures

The dependent measure in the analyses was the TN reading test NCE scores. The TN is administered in 16 states in the United States as well as in all schools in the participating school system, to include Europe, Asia, and stateside schools (CTB McGraw-Hill, 2009). The test items provide detailed diagnostic information on students' basic and applied skills in several subject areas. The test is administered every spring in grades 3 through 11 in the participating school system.

The TN is a standardized, nationally norm referenced test which measures achievement in language arts, spelling, vocabulary, reading, science, social studies, and math. Students are provided with a National Percentile score for each subject area, showing the percentage of students across the United States who took the test they scored above. For example, if a student scored at the 65th percentile in reading, he or she scored equal to or above 65 percent of his or her peers in reading who took the TN test. All students are also provided with a normal curve equivalent score (NCE) in all subject areas administered on the TN. The NCEs are normalized equal interval scores with a range from 1 to 99 which coincides with the National Percentile scale at 1, 50, and 99. The reading section tests students in oral comprehension, basic understanding, analyzing test, evaluating and understanding meaning, reading and writing strategies, and introduction to print (<http://www.ctb.com>). Students are allowed one hour to complete the

reading section of the TN test in 6th through 8th grades (Teacher's Guide, TerraNova, 2009).

Sample

Selection of Students

All students who attended school in the participating school system in 5th through 8th grades for the school years 2004 through 2008 were selected as participants in the study. The students did not have to attend the same school within this system, but must have attended 5th through 8th grades within the school system. A total of 889 students met this criterion and were selected as participants in the study. Extant student data were obtained from the participating school system headquarters in Arlington, VA, on all eligible students. The data files provided individual TN NCE reading scores and the school the student attended in grades five through eight. Students attended a total of 48 schools in this system. Twenty-eight were schools in which 6th grade was part of an elementary school and 20 were middle schools that had a 6th grade. There were 276 students who had attended 6th grade in an elementary school and 613 students who had attended 6th grade in a middle school.

Selection of Principals

The sample of participants for the telephone interview was selected from the elementary and middle schools. From a total of 48 schools, 25 elementary and middle schools were randomly selected. Ten were elementary and 15 were middle schools. The names of the principals of these schools were obtained. The request for participation in the study was sent electronically to the principal of each school in early June, 2010, via the school system's email. A copy of the IRB approval form, a consent form for

participation, and a copy of the interview questions were also sent to each potential participant via email. Fourteen participants responded they were too busy to participate and a second request was sent in August, 2010, after the start of the 2010-2011 school year. Three principals responded seeking clarification, such as whether they needed to retrieve data from 2005-2006, or they responded by stating they did not recollect sufficient information to participate in the study. A total of nine principals agreed to be interviewed for the study. Four were elementary principals and five were middle school principals.

Procedures

The data was received from the participating school system headquarters in an Excel spreadsheet format. The 2004-2005 5th grade NCE scores for the TN reading test were provided to the researcher along with the 6th, 7th, and 8th grade NCE scores. Using the data files obtained from the school system headquarters, the schools were coded as 1 for elementary and 2 for middle school setting. Students were first grouped according to setting in which they had been enrolled in 6th grade. Then, 5th grade TN NCE reading scores from 2004-2005 for each of the students were used to place them in one of three groups: upper third (NCE scores between 67 and 99), middle (NCE scores between 33 and 66), and lower third (NCE scores between 1 and 32). Of the 276 students who had attended 6th grade in an elementary school, 12 were placed in the lower third group and 109 in the upper third group. The remaining 165 students who placed in the middle group were not included in this study as a separate group for analysis.

A total of 613 students attended 6th grade in a middle school, 26 students were in the lower third and 269 were in the upper third. The remaining 318 students placed in the middle third and were not used as part of this study.

The students whose scores fell in the middle third were not used for further analysis as the focus of this study was the reading performance of the two extreme groups, the upper and lower third, and their reading achievement through middle school. The focus was also on reviewing the reading strategies and interventions for struggling readers. Average students' performance in a study by Bottge, Rueda, Kwon, Grant and LaRoque (2009) showed no significant differences when compared with the high and low achieving students when problem solving performance was tracked, thus the decision was made to not conduct an analysis of the average third of students. No other articles were found where the academic or reading performance of the average student was researched. The articles reviewed concerned low achieving or high achieving students. The high and low achieving groups did show significant differences in performance in the Bogge, et al study. I was particularly interested in examining the reading performance for the students at either extreme and whether there were differences in reading progress based on the setting where 6th grade reading instruction occurred.

Data Analyses

The statistical package SPSS Version 18.0 from *the Statistics for Behavioral Sciences* book (Nolan & Heinzen, 2007) was used for all quantitative analyses. One-way repeated measures ANOVAs were conducted to examine differences within groups and between groups over time. An alpha level of .05 was used to determine significance in all tests conducted.

The study assessed whether the independent variable had an effect on the reading scores of the participants. Therefore, the *F* statistic was used to test one nominal independent variable, the setting, with the dependent variable, the TN NCE reading scores from grades five through eight. The first analysis determined whether there were differences in scores based on the setting for 6th grade; the 2nd analysis determined any differences in the scores over time within groups from 6th to 8th grades. The 3rd analysis determined whether differences occurred between settings for the lower third in 6th grade. The 4th test determined whether differences occurred within groups over time. The 5th test determined any differences in scores for the upper third between settings for 6th grade. The 6th test determined whether differences occurred within groups.

Any significant differences that occurred were followed up by performing post hoc tests. An alpha level of .05 was used to determine the chance of making a Type II error. The alpha level of .05 represents the probability that a Type II error was made in less than 5% of the population.

To answer Research Question 1, a repeated-measures ANOVA was used with setting for 6th grade as the independent variable and the 6th grade TN scores as the dependent variable. The analysis was performed between the groups from 5th to 6th, 6th to 7th and 7th to 8th grade using the TN reading scores to determine differences in performance over grade levels. This was the only group whose scores were analyzed from 5th to 6th grade. A second repeated-measures ANOVA was conducted for within group effects from 5th to 8th grades.

Prior to analysis, the data were screened and assessed to determine whether it met the assumptions for analysis. In order to determine whether there were significant

differences between the variance of individual differences, Mauchly's Test of Sphericity was run. If the test statistic is significant ($p < .05$), then the condition of sphericity has not been met. Sphericity assumes that the relationship between pairs of experimental conditions is similar. The data for different conditions come from the same sample group, causing the data from these different conditions to be related. The results from this study indicated the relationship between the elementary and the middle school groups were not similar; thus, the assumption of sphericity was violated. To correct for the violation of this assumption, the Greenhouse-Geisser test statistic was conducted for the analyses to correct for the increased probability of Type II error.

In order to answer Research Questions 2 and 3 to determine whether there was a main effect between the setting and a change in scores in 6th grade, and from 6th to 7th and 7th to 8th grade, the data for the subgroups comparisons were analyzed using one-way repeated measures ANOVAs. The hypothesis was the 6th grade students in the lower third receiving reading instruction in an elementary school would show more gains in reading scores in 6th grade and throughout middle school when compared to the lower third students who attended 6th grade in a middle school. The one-way repeated measures ANOVA tested the hypothesis that there would be statistically significant interaction such that setting in the 6th grade would have a differential effect on reading scores over time. Another repeated measures ANOVA tested whether there were differences within groups over time.

Telephone Interviews

In order to answer Research Question 4, an open-ended interview questionnaire was used to conduct the interviews with principals. The questionnaire consisted of 14

open-ended questions pertaining to what type of reading programs were in place in the 6th grade, the amount of time devoted to reading instruction per day, the strategies and texts incorporated in the curriculum, and what other resources were used for instruction. The questionnaire is found in Appendix A. The questions were based on effective strategies for improving reading comprehension among adolescent struggling readers reviewed in Chapter II. This review was conducted to inform the results related to differences in achievement between settings. All participants were provided with a copy of the questions prior to the scheduled interviews to allow them to obtain the information regarding the 6th grade reading program in place in 2005-2006. The interviews were conducted by telephone during September and October, 2010. The participants were placed on the speaker phone in the researcher's office and the responses were typed into the computer as the responses were given. Each transcript was given a number that corresponded with the order of the interview. The interviews varied in length from 15 minutes to 45 minutes. The average interview was 25 minutes in length.

IRB and Confidentiality

University of Maryland IRB approval was obtained before the research began. Student data will remain confidential and no names were attached to the individual data. All data received from the headquarters were assigned a random student number associated with a particular school so that no individual student could be identified. Currently, all scores and data from the TN test are located at the data participating schools. The author collected data for individual students from all schools containing a 6th grade. All students who attended schools in the participating school system for 6th grade were coded for setting and all of the students were included in the study. Students

who received reading instruction in a resource room or were enrolled in *READ 180^{TN}* were not included in the study.

The names of individual participants selected for a telephone interview remained confidential. The names of the schools where the participants were employed also remained confidential. Prior to scheduling the telephone interviews, a consent form was sent via email to the selected participants requesting their permission to participate in the study. Once the consent forms were received, the interviews were scheduled and conducted by the author in a private room to preserve confidentiality. There was no mention of the schools by name in the results section of this study. The references made were to the setting of the school, elementary or middle, when describing the information collected during the interviews.

Summary

This was a comprehensive study of the reading scores for the entire population of students who attended schools in the participating school system from 2004-2008 to determine whether middle grade readers maintained or demonstrated an increase in reading scores based on their last year of reading instruction in 6th grade. Analyses were conducted using a one-way repeated measures ANOVA to determine significant differences. The reading NCE scores from the TN reading test were in this study for comparison purposes.

The telephone interviews were conducted to gather information about the structure and organization of the reading programs in place in the elementary and middle school settings at the 6th grade. The results from the analyses and interviews are discussed in Chapter IV.

CHAPTER IV

Analyses and Findings

This chapter presents the results of the analyses that were conducted to investigate whether the setting in which a student had completed 6th grade and received reading instruction had an effect on his/her TN reading test scores. The results presented in this chapter also include the findings from the interviews conducted with nine principals regarding the organization and structure of 6th grade reading programs in their respective elementary or middle schools.

Analyses for Research Questions Regarding Students' Reading Progress

Extant data were obtained from the headquarters for schools in the participating school system for the years 2004-2008 and used to determine the 6th grade setting for students who attended these schools for grades six through eight. Participants attended school in one of the 48 schools in this school system. Twenty-eight were schools with 6th grade in the elementary school and 20 schools with 6th grade in middle school were included in study. There were 276 participants in the elementary group and 613 students in the middle school group. This study explored three research questions that pertained to the reading progress of students, as measured by TN reading scores.

Research Question 1

For the first research question, a repeated measures ANOVA was conducted to determine whether there were significant differences between the 5th and 6th, 6th and 7th, and 7th and 8th grade TN scores between elementary and middle school groups. A second repeated measures ANOVA was conducted using the entire population, regardless of

setting, to determine whether as a whole group differences were manifested from 5th to 6th, 6th to 7th, and 7th to 8th grades. It was the appropriate statistical technique because there is one nominal independent variable but more than two levels. The dependent variables were the TN reading scores from 5th, 6th, 7th, and 8th grades. The results from the first repeated-measures ANOVA found no significant differences in scores, but the second ANOVA did find significant results for the within groups effect. The results did not reveal where these differences occurred. Therefore, a Tukey Honestly Significant Difference (HSD) Test was also conducted to determine where significant differences found occurred. This test was used as it indicates that adjustments were made for making multiple comparisons. This test determines the differences between means in terms of standard error and is compared to a critical value, in this case $p < .05$.

Results of the ANOVA revealed that there were no significant differences between settings for 5th through 8th grades ($F = 2.77, p > .05$). See Table I. The within-groups results using the entire population of 6th grade students showed significant differences, but not where these differences occurred. See Table II. Follow-up analyses were conducted using the post-hoc Tukey HSD Test to determine where the significant differences occurred. The entire sample population was used and the results displayed were for 5th to 6th grade, 6th to 7th grade, and 7th to 8th grade. All possible analyses for determining significance between grades were conducted. The results demonstrated that the change in mean scores from 5th to 6th grade, 6th to 7th, and 7th to 8th grade was significant ($p < .001$). The mean differences and significance are displayed in Table III.

Table I

Comparison of Scores between Elementary and Middle School Settings for Students

Source	SS	df	MS	F	Sig.
Setting	950.724	2.16	439.37	2.77	.065

Table II

Comparison of Scores for Within-Groups Effect from Grade to Grade

Source	SS	df	MS	F	Sig.
Entire Population	11231.281	2.16	5190.46	31.62	.001*

* $p < .001$

Table III

Comparisons in Scores from Grade to Grade for Within-Groups Effect of Total Population – Tukey HSD

Grade	Mean. Diff.	Std. Error	Sig.
5 th to 6 th	-1.95	.427	.001*
6 th to 7 th	- 1.76	.387	.001*
7 th to 8 th	5.06	.665	.001*

* $p < .001$

Research Question 2

The first part of the second research question asked whether students scoring in the lower third on TN in 5th grade manifest differences in 6th grade TN scores based upon their having received reading instruction in either an elementary or middle school setting. In order to determine if the setting where the lower third students received

reading instruction in 6th grade had a differential impact on scores in reading on the TN scores in 6th grade, and in 7th and 8th grades, a repeated-measures ANOVA was conducted. It was the appropriate statistical technique because the same population was used to compare TN reading scores over time. The independent variable was the setting, a nominal independent variable. The dependent variables were the TN reading scores from 6th, 7th, and 8th grades.

The results found no significant differences between groups. See Table IV. Though the mean score of the 6th grade students in the lower third who were taught reading in the elementary school was 5.43 higher than those students taught in middle school (E=34.74; MS=29.31), the difference was not statistically significant, as displayed in Table 4. However, there were only 38 participants from the entire population of students for the four years of this study, making the participant sample less than the desired sample size (12 in elementary and 26 in middle school), which could have attributed to the lack of significance between means.

The within-subjects results for the lower third indicated there was a significant effect for grade level but did not reveal where the significance occurred. See Table V. Therefore, a Tukey HSD test was conducted to determine at what grade levels significance was found.

Table IV

Tests of Between-Subjects Effects for Lower Third Students

Source	SS	df	MS	F	Sig.
Setting	246.613	1.622	152.046	1.498	.233

Table V

Tests of Within-Subjects Effects for Lower Third Students

Source	SS	df	MS	F	Sig.
Within-Subjects	4780.473	1.622	2947.336	28.977	.001*

* $p < .001$

The Tukey HSD test was conducted to determine where differences occurred and the results are displayed in Table VI. The results of this test found there were no significant differences between the mean scores for the lower third from 6th to 7th grade, but there were significant differences from 7th to 8th grade.

Table VI

Comparisons for Total Lower Third Group by Grade

Source	Mean Difference	SE	Sig.
6 th to 7 th	1.763	1.545	.261
6 th to 8 th	12.763	2.381	.001*
7 th to 8 th	14.526	2.268	.001*

As the sample size was very small for the lower third, individual differences on the TN reading scores were visually examined for all students in both groups. Of the 12 participants in the elementary group whose 5th grade scores fell into the lower third, eight sufficiently increased their NCE reading score from 5th to 6th grade to place them in the middle third in 6th grade. The four remaining students' scores remained in the lower third from 5th to 6th and 6th to 7th grades. The TN scores for three of the eight students fell back

into the lower third by 7th grade. By 8th grade all 12 of these students who scored in the lowest third increased their performance on the TN reading test enough to place them into the middle third. See Table VII.

Table VII

Number of Students from the Lower Third By Setting Who Increased Scores to Place In the Middle Third by Grade

Source	5 th - 6 th Grade	6 th -7 th Grade	7 th -8 th Grade	Total
Elementary	8	0	4	12
Middle	11	1	10	22

There were similar findings for the 26 participants from the middle school group who scored in the lowest third in 5th grade. Of these students, 11 increased reading scores on the TN test to score in the middle third in 6th grade and one additional student moved into the middle third in 7th grade. By 8th grade, 22 of the 26 students had TN scores in reading that were in the middle third. Out of the 38 total students who scored in the lower third in 5th grade, 34 were scoring in the middle third by 8th grade.

Research Question 3

The first part of Research Question 3 examined whether students scoring in the upper third on TN reading in 5th grade manifested differences in 6th grade TN scores based upon whether they received reading instruction in either an elementary or middle school. In order to determine if the setting where the upper third students received reading instruction in 6th grade had a differential impact on scores in reading on the TN test in 6th grade, a repeated-measures ANOVA was conducted. It was the appropriate

statistical technique because the same population was used to compare TN reading scores over time. The independent variable was the setting, a nominal independent variable with two levels, the elementary and middle school setting. The dependent variables were the TN reading scores from 6th, 7th, and 8th grades. The results showed no significant difference between settings. See Table VIII.

Table VIII

Tests of Between-Subjects Effects for Upper Third Students

Source	SS	df	MS	F	Sig.
Between Subjects	139.128	1.608	86.496	.595	.517

The second part of the question examined differences among the upper third of students as a total group from 6th to 7th and 7th to 8th grade. A repeated-measures ANOVA was conducted to determine whether there was an impact on TN reading scores from 6th to 7th and 7th to 8th grade for the upper third. This ANOVA was the appropriate test as there was one nominal independent variable, the setting, and more than two levels. The dependent variables were the TN reading scores for 6th, 7th, and 8th grades.

There were a total of 378 participants in the upper third; 109 from the elementary school and 269 from the middle school. The results from the repeated measures ANOVA found there were significant differences in TN reading scores across grades, but the results did not demonstrate between what grades the significance occurred. See Table IX.

Table IX

Results of Within-Subjects Effects for Collective Upper Third by Grade

Source	SS	df	MS	F	Sig.
Above Avg. Group	1020.736	1.608	634.590	4.363	.020*

* $p < .05$

A Tukey HSD test was conducted to determine between which grade levels significant differences occurred. Since the results found no significant differences between 6th and 7th and 7th and 8th grade, the 6th to 8th grade scores were examined for the total above average group. See Table X. A significant difference was found in scores between 6th and 8th grades, with the scores dropping 2.86 points. Overall, the above average group's mean scores fell from 6th to 7th grade, and again from 7th to 8th grade. The upper third group was the only group that did not rebound from 7th to 8th grade and improve their mean scores on the TN in 8th grade.

Table X

Pairwise Comparisons for Upper Third by Grade

Source	Mean Diff.	SE	Sig.
6 th to 7 th	-1.098	.563	.052
6 th to 8 th	-2.862	.853	.001*
7 th to 8 th	-1.765	.900	.051

* $p < .001$

A follow-up visual examination of the individual scores showed that of the 109 participants in the upper third in an elementary school, the scores of 30 students fell into the middle third in 6th grade; an additional 9 fell into this category in 7th grade, and six more fell out of the upper third in 8th grade. One of the six students had a score that fell into the lower third. Thus, a total of 44 (40%) of the students in the elementary setting whose scores were in the upper third in 5th grade had dropped below that range by 8th grade. See Table XI.

Table XI

Number of Students Who Fell from the Upper third to the Middle Third from Total Upper Third by Grade

Source	5 th - 6 th	6 th -7 th	7 th -8 th	Total
Elementary	30	9	6*	45
Middle	81	18	25**	124

* 1 Student fell into the lower third group

** Three students fell into the lower third group

Of the 269 participants in the middle school setting group with scores in the upper third of the distribution in 5th grade, 81 scored in the middle third in 6th grade; an additional 18 fell into the middle third in 7th grade; and 25 more scores fell in 8th grade, three to the lower third. See Table 11. Thus, a total of 124 (45%) of the students whose scores fell in the upper third in 5th grade had decreased performance in reading by 8th grade.

While students in the upper third showed significant changes over time, the changes had a negative effect on reading achievement. The group's mean scores dropped

from 70.17 in 6th grade to 69.07 in 7th, and to 67.31 in 8th, for a total drop in middle school of 2.86 points. At no time during middle school did this group of students' scores rebound and improve. This group of students completed 8th grade with mean TN reading scores falling at the lowest end of the upper third of the distribution. The scale score of 67 is the cutoff point for the above average group on the TN, and as stated, the mean in 8th grade for the group was 67.31.

Principal Interviews

Research Question 4 sought to identify any instructional or programmatic differences in how reading was taught and emphasized in 6th grade during 2005-06 in elementary and middle schools. General characteristics of the programs were determined based on the results of telephone interviews with nine principals from elementary and middle schools. The reading strategies used in instruction in each setting were also described as well as what textbook and resources were part of the reading curriculum.

The interviews were telephonically conducted in September and October, 2010. The participants were placed on the speaker phone in the researcher's office and the responses were typed into the computer as the responses were given. Each transcript was given a number that corresponded with the order of the interview. The interviews varied in length from 15 minutes to 45 minutes. A total of nine principals were interviewed in the study. All of the principals held a master's degree, and one principal at the middle school level had a doctorate in education. All had been principals for at least five years in one of the schools that serve a large number of children with parents serving in the military, and two had more than 15 years in the school system. Two had degrees in special education, and the other six were certified in general education, with certifications

in both elementary and secondary education. All nine had been classroom teachers, with experience ranging from eight to 22 years. Three had taught reading in the general education classroom with a range between one and 13 years.

Although the requirement in this school system is for all 6th grade schools to offer a reading program, reading was not offered as a stand-alone class in one middle school where a principal was interviewed. The schools with reading classes met between 225 and 400 minutes per week. In the elementary setting reading classes met on a daily basis, and at the middle school setting a block schedule was in place and students attended reading class every other day. At the elementary level, the schools used a textbook series which was supplemented with various novels and other materials provided by the publisher of the textbook. These materials included classroom sets of novels, guided reading materials, workbooks, spelling lists, and toolkits for teaching reading strategies.

At the middle school level, two schools did not have designated textbooks for reading class, and two middle schools used the same textbook series as the elementary schools. In two of the middle schools, the reading teachers were given liberties to teach the reading class with materials and books of their own choosing. Teachers were expected to teach the various reading strategies that were researched based and shown to improve reading comprehension for adolescents, but were not provided any materials by the school district. The principals of these two middle schools also reported that very few observations were conducted to determine whether the reading programs implemented by the individual teachers were meeting the school district's reading standards for sixth grade.

The reading class focused on various strategies for reading classroom sets of fiction and nonfiction books. Students also read books from the Scholastic series of guided readings. Two of the middle school principals reported that they believed there was embedded instruction in the classroom by the core teachers on how to comprehend expository texts. The elementary principals all reported that the reading in sixth grade focused on fiction and not on textbook or nonfiction readings. None of the elementary principals reported that specific reading strategies were used to improve reading comprehension using the textbooks at the school.

Elementary school principal responses. The principals from the elementary setting were well-informed and related detailed information regarding the reading class as well as the extra-curricular activities offered by the school evenings or after school. Comments included “we had grade level exchanges for peer tutoring twice per week,” and “monthly conferences were held with the students to monitor their reading and to set goals based on the data written in their own contracts.” Another participant stated teachers were trained in language arts professional development conferences on how to teach reading and interact with the textbook. The participants from the elementary setting also reported that phonics instruction occurred as needed with students, competitions were held within classrooms for books read, and parental support for reading outside of school was a large part of the reading program.

The principals from the elementary setting volunteered substantially more information in response to the interview questions, providing additional information and sharing their success stories in reading. In general, the elementary principals were confident students improved in reading comprehension to include improvement on the

TN reading test. The elementary principals also felt students were motivated by the many supplemental activities outside of the school day to promote reading as an at-home activity.

The interviews also sought to gather information on the strategies used in reading instruction, how much time per day was devoted to reading instruction, and how instruction in reading nonfiction and expository texts was included in reading instruction. Principals were asked which strategies listed on the questionnaire were taught in the 6th grade reading class. The strategies identified as effective for improving reading comprehension in Chapter II of this study concerned the use of various mnemonic devices for word attack skills, vocabulary acquisition, prediction, and self-regulation. Table XII shows the frequency in which these strategies were used in each setting. In the elementary setting, the Peer Assisted Learning Strategies (PALS) and Discover the Context, Isolate the Prefix, Separate the Suffix, Say the Stem, Examine the Stem, Check with Someone and Try the Dictionary (DISSECT) strategies were taught in three of the four schools. All four elementary principals stated that the general strategies of tutoring and word identification were taught in the reading class. They all stated they were confident the strategies used in their respective schools were very similar to the specific strategies listed on the questionnaire. For example, the Concept Oriented Reading Instruction (CORI) strategy was unfamiliar to the elementary principals and they were unsure what concept oriented reading instruction could be taught, but they believed instruction was given in reading that was topic based. The Think While and After Reading (TWA) and Self Regulated Strategy Development (SRSD) strategies were used in only one elementary school and the principal stated that students kept journals where

they recorded their goals for and in achievement in reading. The Predict, Locate, Add and Note (PLAN) strategy was used in two elementary. Other characteristics examined were the use of textbooks and the amount of time devoted to reading each day.

Table XII

Frequency of Strategy Use in 6th Grade Reading Program

Strategy	Elementary Setting (n=4)	Middle School Setting (n=5)
PALS	3	4
DISSECT	3	4
CORI	0	3
TWA	1	4
SRSD	1	3
PLAN	2	4

Middle school principal responses. When responding to questions regarding the teaching of reading strategies, all four middle school principals based their answers on assumptions, stating they were sure these strategies were being taught, whether specifically or embedded in the instruction. Table 12 shows four principals believed PALS, DISSECT, TWA and PALS were taught in reading class and three principals felt CORI and SRSD were taught. When asked specific questions about the actual reading strategies utilized in their middle school setting, the middle school principals generally tended to offer comments that conveyed less direct knowledge about what actually was being taught in the classrooms under their supervision. The responses included “I’m sure this was taught,” or “they were probably utilized in class and embedded into the curriculum. The participants gave assurances the strategies must have been taught and

were probably a part of the program, yet the middle school principals as a group gave the reading teachers the liberty to teach the program as they wished with no specific requirements for the class. Principals also provided information regarding supplemental school activities that promoted reading outside of the school environment. The most common reading strategies taught in both elementary and middle school settings were peer tutoring and word identification strategies.

Summary

This study examined the effect of instructional setting on reading comprehension. The TN reading scores for students attending schools in the participating school system who were instructed in reading in either an elementary or middle school during 6th grade (2005-06) were compared at the end of 6th grade and in 7th (2006-07) and 8th (2007-08) grades. The differential impact of setting on students in the lower and upper third (based on 5th grade TN scores) was also examined. A random sample of principals in both middle and elementary school settings was interviewed by telephone to determine if there were instructional or programmatic differences in either setting. The findings in this study found no significant differences in TN reading scores based on where a student had attended 6th grade.

There were, however, significant differences from grade to grade when the entire group's reading scores were compared. The scores of the entire group dropped from 5th to 7th grades, but then increased between 7th and 8th grades. The elementary group's score decreases were somewhat less than those of the middle school group, but scores of students in both groups recovered by 8th grade.

Regarding the effect of setting on the reading performance of the lower third, no significant differences were found. The mean score for the lower third of students increased 13 points from 7th to 8th grade. Visual examination of the data revealed the average TN score for the elementary group increased almost 20 points compared to an average increase of 11 for the middle school group between 7th to 8th grades. However, these differences were not significant based on where they had been enrolled in 6th grade. Significant differences were found when the total group's mean scores were compared from year to year.

The results of the analyses of scores for the upper third also showed no significant effect on TN reading scores based on the setting. The significant differences found in the within groups of decreasing scores by 8th grade was surprising.

Interviews with principals revealed there were differences in how reading instruction was delivered and how many minutes per week were devoted to reading instruction in elementary vs. middle schools. Elementary principals were more confident about the structure of the reading program and were certain specific reading strategies were taught. The middle school principals were unsure and made assumptions about how reading instruction was delivered in middle school. Teachers were given less guidance and directives on how to teach reading, and the principals assumed strategies were taught, although they were unfamiliar with the specific strategies listed in the questionnaire. The implications of all of the results are discussed in Chapter V.

CHAPTER V

Discussion

The purpose of this study was to determine the effect of the setting where students received reading instruction in 6th grade on their reading achievement. Students who were continuously enrolled from 2004-2008 in the participating school system in 5th through 8th grade were the subjects of the study. The TN NCE reading performance scores for students who were enrolled in 6th grade in an elementary school were compared to students who were enrolled in middle school during 6th grade. The scores were compared at the end of 6th, 7th, and 8th grades. Students within each of the setting groups were then divided into the upper and lower thirds based on their 5th grade TN NCE scores. These scores were analyzed over time from 6th through 8th grades to determine if there were changes in the within group mean scores. Significant differences in mean NCE scores between the two settings were not found across the three grades. There were significant differences in mean scores within groups, however, for the entire group of students, the students in the lower third of the distribution and those in the upper third, but the performance patterns for these two groups differed.

The study also documented, through interviews with a sample of elementary and middle school principals from schools that serve a large number of children with parents in the military, which reading programs were offered in their schools during the 2005-2006 school year. This chapter includes a summary of the major findings, a discussion of these findings, and implications of these results.

Performance on the Terra Nova Reading Tests

The chief findings of my study related to the effects of 6th grade setting on reading performance in 6th, 7th and 8th grades. The hypothesis of this study was that students who had received reading instruction in an elementary setting would show more gains in reading achievement from 5th to 6th grade, and that these gains would maintain from 6th to 7th and 7th to 8th grades. This hypothesis was based on an underlying assumption based on the reading scores for middle grade students who attended schools in the participating school system by some of the administrators (Sandra Embler, personal communication, September 2008). It was also based on the research articles reviewed in this study. For example, an article on explicit instruction of comprehension strategies was found to be effective in improving 6th grade students' reading comprehension skills (Hagaman & Reid, 2008). Radcliffe et al. (2008) recommended continued instruction in reading through middle school. Their concern was most students did not show any increase in overall achievement in reading during middle school as measured by the National Assessment of Educational Progress (NAEP) and thus needed more instruction. Finally, Mason (2004) reported middle school students' comprehension problems were influenced in part by lack of strategy instruction during the middle school years. Therefore, it was hypothesized students who attended an elementary school in 6th grade might be more likely to receive instruction in reading skills, specifically the more advanced skills of comprehension than the students who were in middle schools and that this would be reflected in increased achievement in reading in 6th -8th grades.

The findings of this study did not support this hypothesis. Although the mean scores for the total group of participants increased from 7th to 8th grade, there were no

significant differences based on setting. Further, neither the students in the lower third of the distribution nor upper third showed any significant difference in mean scores based on setting. Examination of the within group scores for the overall group and the lower and upper thirds did show significant differences. However, the possibility the test itself may not have been a valid measure needs to be discussed.

Validity of the Terra Nova Scores

Another possible factor related to the changes in scores over the middle school grades as well as the failure of setting to make a difference on the TN reading scores of students could be the test itself. That is, the scores may not be comparable across school years. If test scores are to be comparable from year to year, the test must use a vertical scale which summarizes the achievement of students (Lissitz & Huynh, 2003). This means regardless of any changes that may occur in the test from year to year, the scores reported are on the same scale. According to Lissitz and Huynh (2003), the TN test is one of the achievement tests that purport to use a vertical scale, allowing for meaningful tracking of students across grades.

The Terra Nova Reading Test covers the same four sub-skills from 5th to 8th grade. The sub-skills are: 1) basic understanding, 2) analyze text, 3) evaluate/extend meaning, and 4) reading and writing strategies. The differences in the test from year to year are in the amount of questions from each sub-skill. In 5th grade there are four questions under basic understanding that relate to vocabulary, and in 6th grade are three questions related to vocabulary. The comparisons from year to year in reading scores from the TN test were valid comparisons because the same sub-skills were tested each year. According to the TerraNova Teacher's Guide (CTB/McGraw-Hill, 2009), students

who perform at the same mean score from year to year demonstrate one year of growth. For example, a student who achieved an NCE score of 66 in 6th grade, 7th grade, and 8th grade demonstrated one year of growth in each year.

The National Center on Educational Outcomes (NCEO) (2000) conducted a study with three test publishing companies to determine the kind of information and guidance publishers provided to clients regarding the administration, scoring, and interpretation of out-of-level tests. The publisher of the TN test was one of the participants in the study. The results showed the TN publisher had difficulty determining the amount of error associated with the equating process and believed the equating error would be greater than the standard error of measurement. The discrepancies between the results of this study and the Lissitz et al. (2003) study indicate the vertical equating may not be valid in the TN and could be a possible reason for why the results of my study did not show growth in reading comprehension from year to year.

Changes in Performance between Settings

Despite the lack of significant findings between the elementary and middle school setting, the scores of students showed changes across grades for the total group and the two subgroups examined. There was a different pattern in performance for the upper third, however. The mean NCE score decreased each year for this group, with an end result in 8th grade of a mean NCE score lower than the 6th grade score. The other two groups increased performance from 7th to 8th grade, demonstrating an increase in overall achievement from 6th to 8th grade.

Decreased Scores between 6th and 7th Grades

Scores for the total group of students showed a drop between 6th and 7th grades. There are several possibilities for this. One major factor is the standards and curriculum placed in middle schools. The standards in reading and language arts are aligned from 5th to 6th grade, where students review previously learned skills from 5th grade while acquiring new skills through the standards-based instruction in 6th grade. For instance, most of the principals interviewed indicated that *Literacy Place* (Scholastic, Inc., 1996) was still used as the textbook in all 6th grade reading classes. However, there are different reading standards for 7th grade and the students may not have received adequate instruction prior to the TN test in 7th grade in order to perform well on the TN test (Sandra Embler, personal communication, December 2010).

This change in curriculum between elementary and middle school has also been noted in the literature. The increasing difficulty of reading materials in middle school causes many students to falter in reading after elementary school (National Middle School Association, 2003). Reading comprehension is a serious problem for students in middle school as it becomes an important aspect of most curricular areas (Underwood & Pearson, 2004). As the content of the curriculum becomes more difficult, the content of the TN at the middle school level becomes more difficult and the items are testing the ability of students to comprehend more difficult passages. Therefore, if students do not receive specific instruction in the more in-depth skills tested, this could cause a decline in overall scores (Maria Buchwald, personal communication, December 2010).

A final reason for the drop in scores could be attributed to the elementary group of 6th grade students who experienced moving from an elementary to a middle school

setting. In middle school, where students move from teacher to teacher several times per day as opposed to having one teacher all day, these students may have difficulties organizing their binders, keeping track of all the different places to go each period, and lack the experience to manage their time and homework schedule appropriately. This does not account for the drop in scores for the students who began middle school in sixth grade, however.

Increased Scores between 7th and 8th Grades

There was also a significant increase in mean score for the entire population from 7th to 8th grade. The students had a mean score of 59.38 in 6th grade, a mean score of 57.80 in 7th grade, and a mean score in reading in 8th grade of 62.58, an increase of 4.78 points from 7th to 8th grade. Statistically these results were significant at $<.001$ ($p=<.001$). There is no indication why this amount of growth occurred. There are some possible reasons suggested by the participating school system administrators. For instance, the TN test is administered every March throughout the participating school system. This provides students with more than seven months' instruction in the core areas prior to test administration. It is also possible students performed better in 8th grade due to natural maturation and acquisition of test-taking skills. In addition, the curriculum becomes more rigorous over middle school grades and students are expected to put forth greater effort in order to prepare for high school which might translate to more focus on doing well on the test (James Turney, personal communication, October 2010).

The large gain could also be attributed to students reading more informational and academic texts during middle school, providing students the opportunity to acquire the requisite skills for comprehension throughout middle school. Many reading strategies are

embedded in the core curriculum, especially in social studies and science classes. On the other hand, reading is not taught in 7th or 8th grade as a stand-alone class, with the exception of *READ 180*TM for students who score below the 35th percentile on the TN reading test. So students would not necessarily be receiving instruction in specific reading skills. Yet, schools may have had several interventions in place in order to help students increase reading performance. Schools may have provided extra help after school, during lunch, through mentoring programs, and peer tutoring for students who required extra help in subjects. Schools offer several different types of programs and extra-curricular opportunities for students to receive extra help in subject areas where they are experiencing difficulty, with reading a particular area emphasized by schools. Additionally, in the transition from 7th to 8th grade, all students remained in the same setting. Students may have adjusted to the middle school concept and schedule, experiencing fewer problems with adjusting to different teachers and classes on a daily basis.

Changes in Performance of Students in the Upper Third

Overall, the scores of students who had scored in the upper third of the TN distribution in 5th grade, declined over time. Further, four of the 378 participants had scores that dropped significantly enough to place them in the lower third group by 8th grade. One possibility is the decline in achievement for these students in the upper third could reflect lack of effort and intrinsic motivation. It could also be attributed personal issues, health, or problems a student may have encountered on the day of testing.

Another factor that could have influenced the pattern of lower achievement for the upper third is the lack of programming and opportunities for gifted students. The

school system examined in this study is required to have programs and courses in place for low achieving students to include reading recovery programs, *READ 180*TM, mentoring, tutoring, after school academic support clubs, special education programs, learning strategies, and study skill classes. On the other hand, these schools are not required to have specific programs for gifted students. If they exist, they vary from school to school, with some schools offering no targeted courses exclusively for gifted students. Many schools incorporate rigor and challenging tasks within the general classroom, differentiating instruction to provide challenging opportunities not only for gifted students, but for any student who accepts the challenge (Janet Priddy, personal communication, December, 2010).

Students are identified as gifted through examination of their Terra Nova scores, teacher and parent ratings, and school grades. There are opportunities for stimulating higher order thinking and learning through National History Day projects, Brain Bowl competitions, Odyssey of the Mind and Geography Bees, but this may not meet the needs of the gifted and above average students. Recently, some of these opportunities have been pulled from the middle schools and are only now offered to students in high school, thus giving even less opportunity to the above average students in middle school to stimulate their learning (Janet Priddy, personal communication, December, 2010).

Changes in Performance of Students in the Lower Third

All but four of the 38 students who had scored in the lower third of the TN distribution in 5th grade achieved scores that placed them in the middle third of the TN scale by 8th grade. This might be attributed to the fact that middle schools in the participating school system focused more on raising achievement for the lower

performing students rather than providing challenging and rigorous curriculum for the high achieving students. Schools may perceive the high performing students as independent and self-motivated, thereby allowing schools to concentrate on the lower achieving students' progress. Typically, lower achieving students need more motivation to read, and school personnel create programs designed to integrate self-motivation into the curriculum (Guthrie, Wigfield, & VonSecker, 2000). However, the performance of students in the lower third cannot be over interpreted due to the small sample size, which does not allow for generalization of results.

Results of the Interviews

Principal Interviews

Although there were no significant differences between the setting where 6th grade reading instruction occurred, the interviews with elementary and middle school principals reflected some similarities as well as differences in how reading instruction was delivered in each setting. Chapter II of this study reviewed several studies that tested strategies to improve reading comprehension. These studies focused on vocabulary acquisition, motivation, word attack skills, self-regulation strategies, paraphrasing, and prediction strategies. The participants in these studies were adolescent readers in 5th through 9th grades. Most participants were struggling readers who needed interventions to improve reading comprehension. The results of these studies showed improvement in comprehension for most of the participants.

The principals interviewed in this study were asked which of the strategies were used in 6th grade reading in 2005-2006, and most of the strategies were included in reading instruction, regardless of setting (Table 12). In seven out of nine cases, the PALS

and DISSECT strategies were taught in 6th grade reading classes. The TWA strategy was taught in five schools, the SRSD in four, and the PLAN strategy in six. The CORI strategy was the least taught reading strategy, occurring in only three middle schools. In seven of the nine schools, Literacy Place (Scholastic, Inc., 1996) was used as the textbook in reading class. One middle school had no textbook and in a school with two reading teachers, one used Literacy Place and the other reading teacher did not use a textbook. The elementary principals reported reading teachers had a more structured setting for reading and focused on teaching reading concepts and strategies, whereas the middle school reading teachers had more freedom to teach reading using a program they created. Although the differences were not significant, in all experimental groups the mean reading scores were higher than the middle school groups' scores. Could this be attributed to the consistency students experienced remaining in the elementary setting and the structured setting that occurs in elementary school? The students in a 6th grade middle school changed classes several times per day and much of the reading instruction was embedded in the core curriculum or combined into the language arts block of instructional time.

The results from the interviews also found elementary school principals felt the reading instruction was a central focus in school and several extra-curricular and community activities revolved around a focus on reading. Most of the elementary school principals reported that competitions in reading were held between classes, students, and school-wide. This emphasis on reading books for pleasure as well as receiving awards for the amount of books read motivated students and increased overall reading achievement according to the principals interviewed. The middle school principals did not indicate

reading was emphasized as a central focus for students, nor were competitions held within the school for students.

Implications for Policy and Research

There are a number of implications for policy and research that can be derived from this study. This study revealed the majority of middle school students who attended schools in the participating school system from 2004-2008 belonged either middle or upper third students. Less than 3% of the students belonged to the lower third of students as measured by the national norms for the TN. The majority of students in the participating school system scored higher than the national norms, placing them in the middle or upper third groups. Although the overall NCE scores demonstrate growth for students, the examination of a cohort of students who remained in these schools found there are specific areas in instruction and curriculum that should be addressed. The percentage of upper third students whose scores declined is significant, and administrators in the participating school system should examine how to reincorporate challenging curriculum into the schedule for gifted and high achieving middle school students. The loss in performance by over 40% of the participants that occurred throughout middle school in the upper third is alarming, and the expectation is students should maintain or show at least one year of growth as they move from grade to grade.

The results also implicate that formal reading instruction should continue for all students throughout middle school. Reading instruction stops after 6th grade, and all groups demonstrated a decrease in reading scores from 6th to 7th grade. Although *READ 180™* is offered in 7th and 8th grade, it is a very small and select group of students who are enrolled in this reading program. All students in middle school can benefit from

additional reading instruction in 7th and 8th grade if the emphasis is on strategies to better comprehend informational and academic material. At the very least reading instruction should continue in 7th grade for all students. Further research is needed to determine whether there are other factors influencing the performance of 7th grade students' TN reading scores other than the type of reading instruction received in 6th grade or the setting where this instruction occurred.

The results from the upper third indicate the participating school system administration should examine the programming in place for gifted and high achieving students. Over the past few years, the specific programs offered for this group of students have decreased, and some schools do not have a gifted and talented teacher at the middle school level. The results imply students who remain for four years or more within the participating school system do not demonstrate substantial increases in reading performance if they were competent readers by 5th grade. This could be a serious issue for students as they progress through high school and prepare for college. Though there are AP courses offered throughout this school system, other options for challenging and rigorous courses should be examined.

Further research investigating the achievement of the upper third of students as 9th grade students would shed more light on their performance over time. These students entered high school at about the same ability/achievement level as they attained in 5th grade. It would contribute to this field of research to examine the 9th grade scores to determine whether students recovered from the decline in scores during middle school or whether the scores continued to drop. It would also contribute to the research if the

scores for the other core subject areas of math, science, language arts, and social studies were analyzed to determine if a decrease in performance occurred across the curriculum.

Limitations

There were some limitations to this study. The study focused on setting, assuming there were organizational and programmatic differences between how reading was taught in elementary and middle school classrooms. The study did not explore the manner in which instruction was delivered, method of delivery of instruction, or factors that could influence any differences in scores beyond setting. This study did not explore problems students might have adjusting to a changing schedule, socialization problems due to having different students in classes, or differences in how reading instruction was given between settings. These factors may have affected motivation, interest in school, and the ability to pay attention in class. It was assumed there could be distractions in a middle school setting where students change classes frequently throughout the school day, and the attention span in class could have been shorter as a result, however, these factors were not specifically investigated in this study.

There were very few students who scored in the lower third, according to the national norms on the Terra Nova test in both settings. Neither the elementary nor the middle group contained 30 or more participants, although the entire population of students in this study consisted of 889 students. There were 12 students in the lower third elementary group and 26 students in the lower third middle school group. From the entire population of students who attended the schools examined for the four years used in this study, most of the students fell within the middle or upper thirds.

Summary

The findings in this study suggest the setting where students receive reading instruction in 6th grade does not have a significant impact on their reading achievement as measured by the TN reading scores. However, all mean NCE reading scores were higher at every grade examined in the elementary setting. As the sample size for the lower third was not ideal (38 total participants), statistically significant differences were not found, but the difference in scores in 8th grade was eight points (ES=49.33, MS 41.23). For the upper third, the elementary mean score was 2.53 points higher in 8th grade than the middle school mean (ES=69.11, MS=66.58).

There are uncertainties regarding the reasons why students' scores decline through 7th grade, and then recover from 7th to 8th grade with the exception of the upper third students. One possibility is the gap in standards-based teaching from 6th to 7th grade, and another possibility could be the lack of a reading program for students in 7th grade. Students are entering and in puberty during middle school, where emotional, physiological and social issues may emerge as more important to students than the academic portion of school.

It is evident students in middle school face many challenges, and it is the responsibility of the schools to ensure the curriculum offered meets the needs of all students. Schools should not target a particular group and place the emphasis for increased performance solely with one group. The results of this study suggest students can benefit from continued reading instruction and acquisition of comprehension skills that will provide them with the ability to increase reading performance in high school.

There were issues that could not be addressed in this study to include the branch of service where students' parents were employed, the amount and length of deployments facing families, and individual differences between schools based on the military population and type of work schedules active duty members had. Further research in these areas may contribute to the results found by this study. This research could also assist administrators in the participating school system examined in this study in their decision-making regarding the curriculum and instruction offered to students in middle school.

Appendices

Appendix A

Principal Interview Questions

1. How many total years have you been a principal? _____
2. How many years have you been a principal in DoDDS-E? _____
3. How many total years did you teach in a classroom? _____
4. How many years did you teach in a classroom in a DoDDS-E school?

5. How many years, if any, did you teach special education? _____
6. How many years, if any, did you teach reading? _____
7. Are you certified to teach reading? _____ Yes _____ No
8. What is your highest degree held? _____ Doctorate _____ Masters
_____ Bachelor's Degree
9. For school year 2004-2005, was there a specific course in reading offered for sixth grade students at the school where you were employed?
_____ Yes _____ No. If no, skip to question 14.
If yes, how much time per week was reading scheduled? _____
hours.
10. What types of reading programs are used in DoDDS-E elementary and middle school settings to teach reading skills? Please explain.
11. How was the reading program structured? Please check all that apply:
_____ a. Specific program: Name: _____
_____ b. Textbook: Name: _____

_____ c. Supplemental materials: Name _____

_____ d. Other, please specify: _____

12. What reading comprehension strategies were included as part of the reading program offered? Please check all that apply:

_____ a. phonological skill building

_____ b. vocabulary acquisition

_____ c. motivational strategies

_____ d. comprehension skills

_____ 1. word attack strategies

_____ 2. dissecting words

_____ 3. self-directed strategy instruction

_____ 4. peer assisted learning strategies?

e. Other (please specify) _____

13. Did you provide instruction specifically focused on comprehending textbooks?

14. If no reading class was offered, how was reading instruction incorporated into the curriculum? Please explain.

Appendix B. Methodological Critique Matrix

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
Study #1 Calhoon (2005)	Reading difficulties undermine mastery of language, vocabulary growth, skill in writing and general knowledge of the world. Remedial reading programs have been researched and do not close the reading gap, normalize reading skills of students with reading difficulties. The purpose was to examine effects of a peer-mediated instructional approach on teaching phonological skills, reading comprehension for middle school students with RD.	Treatment group, control group, (A vs no A) - 38 students. Pre, posttests administered 2 weeks before and after 31-week intervention. Experimental design/quantitative	LST and PALS intervention, verbal rehearsal, positive feedback, frequent verbal and written interaction between tutor and tutee, reciprocity in roles	Reading skill acquisition of middle school students with reading disabilities	32-6 th , 7 th and 8 th grade students from 4 special education self-contained language arts rooms from 2 middle schools in SW district	Four teachers from self-contained classrooms, students RD. Treatment and contrast groups. Treatment group received PALS/LST intervention, contrast group no peer-mediated reading activities. The WJ-III assessment for reading achievement. Teachers trained in treatment groups in 1 day workshop, taught routine for LST to all students. Contrast program Saxon Phonics Intervention taught to all students in classes; scripted lessons.	ANOVA on WJ-III pretests, posttests, mean & SD comparisons for these scores	No significant differences between two treatment groups on pretests. Significant differences between groups, LST/PALS out-performed contrast condition. No significant difference between conditions for fluency. Significant growth for word ID, word attack, passage comprehension.

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
Study#2 Dole, et. al (1996)	Activating prior knowledge difficult before reading. Struggling readers have problems integrating their existing knowledge with new information. The purpose of the study was to test the hypothesis that a student-centered strategy to activate prior knowledge will help students when reading texts independently.	3 groups: story content, strategy instruction or basal instruction group. Strategy instruction taught 5 weeks in 1st 50 minutes each day. 6 tests. Baseline data collected on comprehension on days 1 and 2 of study.	3 treatments of story content, strategy instruction and basal instruction	Low achieving students with little motivation for reading to understand texts	67 5 th and 6 th grade students determined to be at risk for reading problems. Students fell into the lower 50 th percentile for reading.	Instructional tests taken from basal reading programs were used for all treatment groups. All students had exposure to the basal materials and the quality of the literature selections was determined to be good. 4 th , 5 th and 6 th grade level basals were used and 24 narrative selections were chosen from these readers. Six tests were developed-2 used at the start of the study, 2 immediately after and two 7 weeks after the study ended.	Groups were re-examined once new SAT scores arrived, and significant differences were found. ANCOVA was used to remove ability differences in subsequent analyses. The SAT scores served as a covariate. A mixed factorial design was used to analyze the data.	Students performed significantly better in the strategy instruction group and on independent-read texts. Teacher modeling, coaching and fading techniques were used
Study#3 Guthrie, et. al (2000)	Poor readers often lack motivation to try to read, especially expository materials or textbooks. Intrinsic motivation declines during elementary school. Study examined effects of	Treatment and control groups with 3 rd and 5 th graders participating from self-contained	support, collaboration, learning goals, real-world interaction to stimulate interest in reading	Increase situational interests; increase reading comprehension	41 5 th graders for treatment group; 47 5 th graders for control group. 28 3 rd graders in	Control group classes were selected based on comparable students, teachers and school CORI taught in 4	Motivation for Reading questionnaire used to measure aspects of reading motivation	CORI group demonstrated strong, positive association with student curiosity with effect size

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
	motivation when receiving concept-oriented reading instruction versus traditional instruction. Focus on intrinsic motivation. Can classroom intervention influence students' intrinsic reading motivation?	classroom. Quasi experimental with CORI intervention group. Control group received traditional reading instruction with basal reader.			treatment group and 36 in control group.	phases-observe and personalize, search and retrieve, comprehend and integrate, and communicate to others. Taught 16-18 weeks in fall and spring. Hands-on activities performed. Traditional instruction followed normal pattern of teacher using a guide and sequence of content and activities in McGraw-Hill basal program.	showing 11 factors to assess. Factor analysis with varimax rotation used. This also used for assessing extrinsic motivation. ANOVA determined and intraclass correlation. Means and SD displayed in tables.	1.94. CORI and traditional students not different in involvement In strategy use CORI students were significantly higher. 5 th graders confirmed hypothesis they had lower motivation. CORI focused on enhancing learning or mastery goals. Support mastery of orientation with intrinsic motivation.
Study#4 Hagaman & Reid (2008)	There is a disparity among students with reading difficulties and those who are successful readers. Reading problems are the most frequent reason for kids to be referred for special education services. Students should be taught methods to improve their comprehension skills.	Multiple baseline across participants, multiple probes during baseline; single subject design	SRSD instruction After SRSD the paraphrasing strategy RAP was taught using the SRSD model	Participants' progress in comprehension using SRSD; percentage of text recalled; main idea and details of passages/selections recalled	3 6 th grade students from elementary school enrolled in reading enrichment program in Midwest	Individual instruction in SRSD model to each participant. Teachers practiced with intervention prior to implementation. Detailed lesson plans developed for each activity.	Probes were scored for % of text recalled, checklist used from QRI-3, reading inventory. Students were recorded and	Performance of recall increased immediately after treatment began, effects maintained across two week follow up. 2 of 3 showed dramatic

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
	This study investigated the use of self-regulated strategy developed (SRSD) with RAP paraphrasing strategy as way to increase comprehension.					Teacher observed for treatment fidelity. During baseline participants read 3 selections from social studies text. After baseline treatment given until criterion level for independent reading reached. After this maintenance probes given 2 weeks after end of independent performance.	recall rated. Also % of main ideas and details tested.	increases in % of main ideas recalled. Effects on dependent measures were immediate and significant for all participants.
Study#5 Lenz & Hughes (1990)	Students with learning disabilities often have difficulties in reading and this is especially true for students who are required to read and understand materials that are written above their grade level reading ability. Word identification in a skill these students often lack. The study investigated the effects of training adolescents with LD in a word identification	Multiple baseline across subjects design	Using the DISSECT strategy for word ID, a 7 step process	Reducing reading errors and increasing word identification differentially, to improve reading comprehension	12 7 th , 8 th and 9 th grade students in Florida, classified as LD	Intervention took place in 3 LA classes for students with LD. Teachers trained in strategy for 3 hours as overview; 6 hours of specific training. Students were taught strategy in 8-step sequence. Measures used	% of comprehension questions answered correctly. Frequency of errors analyzed. Mean comprehension scores shown.	When taught in intervention at grade level, decrease in errors occurred. All subjects met mastery after 9 attempts. Strategy reduced oral reading errors, improved comprehension and

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
	strategy called DISSECT for reducing errors in reading and increasing word identification while reading.					were three oral reading assessments and two reading comprehension measures.		performance. Not all subjects demonstrated substantial increase in comprehension. Most improved but one did not at all. Gains were inconsistent
Study#6 Lingo, et. al (2006)	Students with reading deficits and challenging behaviors lack success academically and socially. Often are excluded from instruction. These students also experience punitive actions and negative experiences and instruction is limited, with tasks easier than for other students. The purpose of this study was to assess the effectiveness of the Corrective Reading program on reading fluency and behavior during reading-related instruction.	Multiple probe design across students Periodic baseline measures administered	Use of Corrective Reading program	Oral reading fluency; reading errors, reading achievement Students with LD and challenging behaviors Social behaviors	7 middle school students from two special education classes; received reading instruction within resource room; had reading objectives on IEP; 7 general education students were comparison group	Sessions for treatment were held during reading and LA classes for about 45 minutes almost daily over a 3-month period. Resource room used for intervention sessions, general education rooms used for behavioral observations. The Corrective Reading program was used and passages from Reading Mastery program. Baseline data collected on oral reading fluency	Procedural and inter-observer reliability were coded and calculated; effects of intervention summarized for fluency; t test for pre and posttest reading achievement; mean number of correct words per minute read; errors calculated; standard	Significant difference between pretest scores and posttest scores in reading fluency; social behaviors had mixed results, some increased as others decreased; 6 of 7 participants indicated the intervention helped improve reading ability; all participants' means exceeded cwpm baseline

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
						and grade-level passages, social behavior. All began baseline at same time but were given periodic reading probes. If criteria were not met the intervention was repeated.	scores and grade equivalents calculated	means. Transfer of fluency gains also demonstrated; 6 of 7 increased reading ability based on WJ reading mastery test. No relationship was established between improved oral reading fluency and reduction of inappropriate behavior
Study#7 Mason (2004)	The achievement gap between struggling readers and successful readers has increased, and for below-average readers, their performance has decreased since 1992. Students lack reading strategies to comprehend texts. Study examined the effects of multiple self-regulated strategies on reading comprehension of	Treatment and control groups. Pre and posttest administered, 5 week intervention s. After study student interview conducted	Tutoring program, control condition was traditional instruction with whole-class instruction, teacher questioning, oral reading, silent reading, worksheets.	Expository reading comprehension for struggling readers;	Four groups of 4 students in 5 th grade; decoding at 3 rd -grade level; subtest scores in reading between 10-40 th percentiles on CTBS; randomly	15 reading passages, 8 science and 7 social studies topics used for assessment, instruction, student practice. Both conditions read same passages. Testing passages randomly assigned for	8 quantitative measures were obtained from oral and written responses to examine comprehension performance. Self-efficacy and	Significant main effect for oral reading comprehension, large effect size obtained for TWA compared with RQ. TWA determined to be more positive at posttest and

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
	expository texts with struggling readers, including the Self-Regulated Strategy Development intervention.				assigned to two treatment conditions, the TWA and RQ	pretest, posttest, maintenance. Oral and written measures obtained prior to and following instruction	intrinsic motivation data were also collected via survey. T tests were completed for each measure	maintenance stages. TWA strategy helps student's ability to remember key information and learn to summarize. No generalizability to written retell when oral retell improved. No changes in self-efficacy or intrinsic motivation after treatments
Study#8 Mastro- perri, et. al (2001)	Students who struggle with reading have been studied and it has been reported that these students who participate in peer mediation programs benefit by demonstrating improved achievement in reading and other areas. This study investigated a peer tutoring reading comprehension program in a middle school setting with students identified as	Qual-quant methods to assess effects of project in 4 domains-social, affective, procedural, academic	Tutoring program, control condition was traditional instruction with whole-class instruction, teacher questioning, oral reading, silent reading, worksheets.	Improvement in use of reading comprehension strategies	2 middle school special education teachers; 24 middle school students with mild disabilities enrolled in 7 th grade English	2 conditions in the study with two groups, one receiving tutoring and the other group traditional instruction during English class. Reading materials were identical in both conditions. Prior to implementation	Pre- and posttests for reading comprehension developed and used/criterion referenced. Open-ended test items. 16 item interview developed to assess views	No differences on comprehension in the pretest stage. On posttest tutoring condition students scored 81.8% correct versus 63.3% for control students. This supports

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
	having learning disabilities and assessed the effects of the intervention across all participants.					of intervention, students given standardized reading tests and students paired #1 (highest scorer on test) with #13, #2 with #14, etc. Program instruction daily during 50 minute class for 5 weeks. Sessions were videotaped and logs maintained by teachers. Traditional condition students were given whole-class instruction, teacher questioning, oral reading, etc.	on tutoring. Qualitative data sources of teacher interviews, teacher journals, observational records, field notes, student products, videotape records used. Analysis of teacher interviews and entries showed positive support for tutoring, student interactions and enthusiasm, learning and use of comprehension strategies.	results of student interview. Students noted tutoring was fun but reading was still at times difficult. Overall attitudes were very positive. Limitations are that the sample size was small, intervention only lasted five weeks and only criterion-references comprehension measures were collected.
Study#9 Onachukwu, et. al	Research as shown that reading comprehension is acquired developmentally through traditional	Single-subject multiple-baseline-	Use of story map including setting, time, characters, theme, episode,	% correct on reading comprehension questions and %	3 male students with SLD, 8 th grade	Students taught in reading room at middle school and during	% of reading comprehension on questions answered	The higher the accuracy was for identification of story

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
(2007)	instruction, but students with learning disabilities often have challenges in comprehending text, acquiring these skills more slowly than their peers. They also have poor classroom preparedness skills and fail to monitor their own reading comprehension. This study examined the effects of using story-mapping to improve and facilitate reading comprehension of students with specific learning disabilities in middle school.	across-participants design	solution, outcome, reaction	correct for identification of story grammar elements correct	from SE region of US	intervention phase were taught in mini-library. 23 stories from literature text used. Comprehension questions taken from Formal Assessment Workbook.	correctly from pre to post test shown. Maintenance phase also displayed. Mean score used for table. Relationship between correct identification of story grammar elements-percent correct on comprehension questions established.	grammar elements, higher % on comprehension tests. Comprehension improved significantly during intervention and during maintenance remained higher than pretest percentage.
Study#10 Radcliffe, et. al (2008)	Students often have a fast start in elementary with reading but in early adolescence often falter. Middle school students need continued and systematic instruction in reading. Reading in the content areas is challenging for many students. The purpose of this study	Nonequivalent-groups, pretest-posttest design with multiple pre-and post assessments	PLAN strategy; increase in comprehension of science texts	Perceptions of PLAN use, performance on comprehension assessments	Science teacher, 50-6 th grade students in Texas	3 phases, a preparation, implementation, and adaptation phase. One science class received PLAN strategy, one received traditional instruction without PLAN	Reading comprehension on tests and a reading strategy check list used before and after PLAN intervention. Teacher	Reading instruction was integrated with curriculum with use of PLAN. Reading comprehension scores increased when statistically

Study	Rationale/Purpose/Research Questions	Design	Independent Variables	Dependent Variables	Sample/Participants	Methods/Procedures	Analyses	Results
	was to examine the effects of introducing a study-reading strategy called PLAN into a middle school science classroom.						completed questionnaire prior to learning strategy and then at end of 5-month study. Field notes and digital videotaping was recorded.	analyzed

Appendix C

Informed Consent Form for Principals Participating in Study

Title of Project	An Investigation of Middle School Reading Performance Based on The 6 th Grade Reading Instruction Setting
Purpose	This is a research project being conducted by Kelly Benning under the supervision of Dr. Margaret McLaughlin at the University of Maryland, College Park. We are inviting you to participate in this research because you were a principal in either an elementary school or middle school which had a sixth grade in 2005-2006. The purpose of this research is to examine the characteristics of the reading programs for 6 th grade in each setting, what resources and materials were used for teaching, and how much time per day was devoted to teaching reading.
Procedures	The procedures involve telephone interviews. Prior to the day of the interview, you will be provided the questions regarding the sixth grade reading program in place at the school you administered in 2005-2006. You may prepare your answers. You will be asked questions regarding the reading program, who taught the course, how many minutes per day the class met, what reading strategies were implemented in class and what resources and materials were available for use. On the day of the interview, you will be asked to respond to the questions as they appear on the questionnaire and your answers will be transcribed.
Confidentiality	The interviewer will conduct the telephone interview from a private room. All transcribed interviews will have a unique code placed on them and only Ms. Benning will have access to the list of codes and names. All information obtained from the interview will be kept stored in a locked filing cabinet. The information obtained from the interviews will be used to describe the general characteristics of sixth grade reading programs. Information that is reported will not be linked to you or to your school.
Risks	There are no known risks for your participation in this study.
Benefits	This research is not designed to help you personally. However, possible benefits from this study include greater knowledge of the impact of various reading strategies and programs offered in 6 th grade. The results may support continuing reading programs throughout middle school or may support a specific type of reading program which may allow administrators to make informed decisions about curricula. The results may also be used by the Department of Defense Dependent School leaders to make policies regarding reading instruction.
Do I have to be in this research? May I stop participating at	Your participation in this study is completely voluntary. You may choose to withdraw from the study at any time.

Initials _____ Page 1 of 2

any time?	
What if I have questions?	<p>This research is being conducted by Kelly Benning and Dr. Margaret McLaughlin in the EDUC-College of Education at the University of Maryland, College Park. If you have any questions about the research study itself, please contact Dr. Margaret McLaughlin, 3119 Benjamin Bldg., University of Maryland, College Park, MD 20742, 301-405-2337. If you have questions about your rights as a research subject, please contact: Institutional Review Board Office, University of Maryland, College Park, MD 20742; email: irb@deans.umd.edu; telephone: 301-405-0678.</p> <p>This research has been reviewed according to the University of Maryland College Park IRB procedures for research involving human subjects.</p>
Statement of Age of Subject and Consent	<p>Your signature indicates that: You are at least 18 years of age; The research has been explained to you; Your questions have been fully answered; and You freely and voluntarily choose to participate in this research project.</p>
Signature and date	<p>Name _____</p> <p>Signature _____</p> <p>Date _____</p>



Initials _____ Page 2 of 2

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