

**The Effect of the READ 180 Reading Intervention Program on the Reading Proficiency of Sixth Grade Students in Three Suburban Missouri Middle Schools**

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## **Abstract**

The setting for this study was a suburban school district (District A) located southeast of Kansas City, Missouri. The population was sixth grade students in District A participating in the READ 180 Reading Intervention Program during the 2009 – 10 school year. The primary purpose of the study was to analyze the reading improvement of sixth grade students as measured by the SRI and MAP Communication Arts Test after participation in the READ 180 Reading Intervention Program for one or two semesters. The second purpose was to determine whether the number of semester enrolled in READ 180 and selected demographics (i.e. gender, minority status, and socioeconomic status) significantly impacted the reading growth of students in the READ 180 Reading Intervention Program. The dependent variables were growth, as measured by the Scholastic Reading Inventory (SRI) and growth as measured by the Missouri Assessment Program's (MAP) Sixth Grade Communication Arts Test. The independent variables were the number of semesters enrolled in the READ 180 Reading Intervention Program, gender, ethnicity, and socioeconomic status.

The results of the study provided evidence that students enrolled in READ 180 experienced significant growth as measured by the SRI. The growth of minority students participating in READ 180 was significantly lower than non-minority students. There was a marginally significant difference in growth between students enrolled for one semester in READ 180 as compared to those who participated for two semesters. The results did not provide evidence that READ 180 had an effect on the yearly growth of students participating in the program as measured by the 6<sup>th</sup> Grade MAP Communication

Arts Test. The effect of READ 180 was also not moderated by gender or socioeconomic status.

Recommendations for further research include using a longitudinal research design to increase the length of the study beyond one school year. A second recommendation is to add a qualitative component to create a mixed methods research design. A third recommendation is to include additional school districts to expand the generalizability of the study.

## **Dedication**

This dissertation is dedicated to every student who struggles with reading. I am focused on finding ways to help children who have not obtained the necessary skills to become literate members of our society. I strongly believe reading to be a key factor that leads to success in life. Studies such as this should take place regularly to ensure that effective strategies and interventions are identified and implemented to empower those who are so often left without the support they deserve.

## **Acknowledgments**

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## **Chapter One**

### **Introduction**

School systems in the United States are charged with the tremendous task of helping students develop skills to become productive members of society. The ability to read proficiently is a skill that is vital to the success of all students both in school and in life (Scola, 2002). Proficient readers are students who read on or above grade level and who possess and use a large repertoire of reading strategies (Robb, 2000). The ability to read proficiently ultimately affects the life of students as they transition into the workforce. As technology continues to advance, the need for a flexible workforce that can adapt to global demands becomes paramount; this flexibility requires a workforce that can quickly learn new skills, which, in large part, depends on the ability to read and understand technical writing (Friedman, 2004).

Students who struggle with reading encounter significant challenges as they progress toward adulthood and become a part of the workforce. Struggling readers are “students who read at least two years below grade level” (Regional Educational Laboratory for the Central Region, 2008, p. 2). These students often lack the strategies that engage them with print and that enable them to solve the problems textual reading can present (Robb, 2000). Hernandez (2011) confirmed a link between third grade reading levels and high school dropout rates. In a longitudinal study involving 4,000 students, Hernandez found third grade students who were not proficient readers were four times more likely to drop out than their peers who were reading on grade level. The challenges for struggling readers do not stop with persistence to graduation. Whitehurst (2003) reported that the number of middle school students who

are not reading proficiently can be used to help determine the amount of prison space needed in the future; therefore, core reading skills must be developed in order to prevent struggling readers from dropping out of school and to lower their chances of being incarcerated.

Early literacy experiences establish the core skills identified as being important for reading success. Literacy is defined as an individual's ability to use printed information to function in society, to achieve goals, and to develop knowledge and potential (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993). Early literacy skills are those skills that help a child understand the printed word: "what it is, how it works, and why it is used" (Gunn, Simmons, & Kameenui, 1995, p. 5). The most important skills children can have to bolster academic success when they enter school are established through literary experiences during early childhood (Cunningham & Stanovich, 1997).

Middle class and lower income families throughout the country rely on early childhood programs to establish literacy skills with preschool-aged children. Despite studies showing the benefits of being enrolled in early childhood education, access can be difficult for some families due to the lack of availability of pre-school centers in or near their neighborhoods and due to the lack of family financial resources (National Education Access Network, 2006). As a result, the majority of core reading instruction occurs in elementary school. Unfortunately, each year more students are leaving elementary schools without the ability to read proficiently (IES National Center for Educational Statistics, 2001). According to the KIDS COUNT Report, published by the Annie E. Casey Foundation (2009), a philanthropic organization established to help vulnerable children and families across the country succeed, 68% of 4<sup>th</sup> grade public school students

in the United States scored below a proficient reading level in 2009. The KIDS Count Report included assessment data from the 2009 National Assessment of Educational Progress (NAEP) reading test (Annie E. Casey Foundation, 2009). The U.S. Department of Education's Institute of Education Sciences (IES) National Center for Education Statistics is another organization that used NAEP data to analyze student reading proficiency at the national level. In the Nation's Report Card, the IES National Center for Education Statistics (2009) reported the average reading score of fourth grade students on the NAEP in 2009 was unchanged from 2007. Additionally, the IES National Center for Education Statistics reported that 4<sup>th</sup> grade reading scores had remained unchanged in 2011. According to the IES National Center for Education Statistics' (2011) report, only 33% of fourth grade students assessed across the country were identified as proficient readers.

Students who are struggling readers experience increasing difficulty as they progress through their school career. "Failure to read at grade level can lead to grade retention and, in turn, loss of interest and motivation to succeed in school" (Annie E. Casey Foundation, 2009, p. 42). Lewkowicz (2000) confirmed that the majority of students who leave the elementary setting without a strong foundation in literacy only continue to fall further behind their classmates when they reach secondary school. Roe (2004) validated this concern by stating,

While significant advances have been made in understanding the skills primary grade children must acquire in order to develop beginning reading skills, the fact remains that many students reach

upper elementary grades and middle school without having obtained the necessary skills and strategies to become successful independent readers. (p. 9)

Hagler and Davis (1990) concluded that struggling readers are likely to repeat grades and eventually drop out of school prior to graduation. Hernandez's (2011) research regarding third grade reading levels as a predictor for whether a student will graduate or not supports the conclusions of Hagler and Davis (1990). Thus, the development of intervention programs and instructional strategies designed to support struggling readers continues to be an area of focus (Quatroche, 1990).

Schools across the country employ various interventions aimed at increasing reading proficiency, and ultimately student achievement in an effort to provide support to struggling readers. Greenleaf and Roller (2002) defined interventions as intensive curriculum and instructional supports aimed at expanding and enriching the reading lives of adolescent students. There are countless reading intervention programs available on the market for school districts to purchase. Due, in part, to the increased focus on raising student achievement identified by the No Child Left Behind Act (NCLB) of 2001, school district officials are investigating literacy interventions that they believe will meet the needs of struggling readers.

The achievement outcomes established by NCLB created a sense of urgency for schools to adopt reading intervention programs to support struggling readers. School districts might have rushed to purchase and implement reading interventions relying solely on findings published by the intervention vendor without considering independent research. In order to identify the appropriate programs, school districts may utilize reports that provide summary information about multiple interventions based on

independent research. An example is the Adolescent Literacy Intervention Programs Chart and Program Review Guide. The guide was created based on Shanahan's (2005) research of presentations, policy statements, and reports of existing intervention programs. The researcher narrowed the focus of her study by identifying programs designed for use beyond fourth grade. The resulting list of 30 reading interventions includes a description, which identifies the target population, goal, theoretical premise, and main components of each program. Even with the narrowed list available from Shanahan's (2005) work, school districts are in need of additional information regarding program effectiveness, which is a component missing from the Adolescent Literacy Intervention Programs Chart and Program Review Guide. The variety of programs challenges school districts to select the proper intervention. Due in part to the financial condition of school systems across the nation, the complexity of selecting the most effective intervention is compounded when the cost of programs is taken into consideration.

State government officials across the United States have anticipated the need to make education cuts to state budgets when over \$100 billion in federal stimulus funds from the federal government expires during fiscal year 2012 (Cavanagh & Hollingsworth, 2012). The stimulus funds were originally appropriated to help lessen the impact of state budget shortfalls due to declining tax revenues which has been a national trend since 2008 (Oliff, Williams, & Johnson, 2010). A secondary budget concern for public schools across the country stems from a decrease in local funding. Most public schools receive a significant portion of revenue from local property taxes based on property values which have declined recently because of the housing crisis beginning in 2008 (Oliff, Williams,

& Johnson, 2010). The reduction of federal, state, and local funds have caused school districts to evaluate all programs to determine the effectiveness and efficiency of each. Reading intervention programs receive more scrutiny versus other school programs as they are expensive to initiate and maintain. Fiscally responsible school districts are obligated to analyze reading intervention programs to determine if they are having the desired effect on student reading levels and student achievement (Johnson & Moser, 2002).

School systems across the United States are searching for effective intervention programs to support struggling readers. The identification of effective interventions is difficult due to the numerous programs available for use and the limited funds available to districts. Various reading intervention programs have been created to help struggling readers improve their reading proficiency; however, school leaders need information regarding the effectiveness of reading intervention programs in order to ensure they are giving students what they need to become successful readers.

### **Statement of the Problem**

The READ 180 Reading Intervention Program is an intensive reading intervention program that helps educators confront the problem of adolescent illiteracy through the use of technology, print, and professional development for teachers. The program was designed to help students through the use of differentiated instruction, adaptive and instructional software, high interest literature, and direct instruction in reading, writing, and vocabulary skills (Scholastic, Inc., 1996). The program's publisher, Scholastic, Inc. (2011) described READ 180 as a program proven to meet the needs of struggling readers whose reading achievement is below the proficient level. Students who are reading



below the proficient level are not reading on grade level and often do not possess and use a large repertoire of reading strategies (Robb, 2000). The READ 180 Reading Intervention Program was developed specifically to support students who are not proficient readers.

The development of the READ 180 Reading Intervention Program was based on research conducted by Ted Hasselbring and members of the Cognition and Technology Group from Vanderbilt University in 1985. The research was grounded in the broad framework of constructivist theory which asserts that people learn through their experiences and environment (Woods, 2007). Hasselbring's research sought to determine the effect of technology when used as a tool to expand the positive reading experiences of struggling students (Hasselbring & Goin, 1988). In 1994, Hasselbring joined forces with Janet Allen of the University of Florida to develop a pilot reading intervention program called the Orange County Literacy Project that utilized technology to improve student reading proficiency (Scholastic, Inc., 2011). Florida's Orange County School System implemented the Orange County Literacy Project from 1991 to 1999 with more than 10,000 students. Taylor, Hasselbring, and Williams (2001) found that students involved in the Orange County Literacy Project improved their reading comprehension, self-esteem, and classroom behavior.

Scholastic, Inc. became involved with the Orange County Literacy Project in 1997. An instructional model involving teacher-led instruction and independent reading was added to the technology component of the program based on Scholastic, Inc.'s expertise in direct instruction in reading comprehension, word analysis, phonics, spelling, and writing (Mayer, Alexander, De Vivo, Aguhob, & Davidson, 2009). Because of

Scholastic, Inc.'s involvement, the Orange County Literacy Project was refined to become what is now known as the READ 180 Reading Intervention Program.

Scholastic, Inc. is currently the publisher of READ 180. Research conducted by the publisher or their affiliates, illustrates students participating in the READ 180 Reading Intervention Program make progress, often substantial, in learning to improve their reading (Scholastic, Inc., 2009). Based on this information and similar studies that are discussed in chapter two, school districts across the country, like District A, a suburban school district southeast of Kansas City, Missouri, have implemented the READ 180 Reading Intervention Program in order to positively affect the reading proficiency of struggling readers (Scholastic, Inc., 2009).

In 2002, a large percentage of middle school students in District A were reading below grade level. District A's deputy superintendent was concerned that struggling readers at the middle school level were negatively impacting the district's student achievement scores as measured by the Missouri Assessment Program's (MAP) Communication Arts Test (District A, 2006). The MAP Communication Arts Test is the system used to assess students' proficiencies as represented by state standards and grade level expectations (CTB McGraw-Hill, 2008). The low achievement scores were not unique to middle school students. Students at the elementary level in District A also failed to meet state proficiency standards as measured by the MAP Communication Arts Test. In 2002, the district implemented a balanced literacy model as a reading intervention to support struggling readers at the elementary level (District A, 2005). The balanced literacy model is defined as a decision-making approach through which the teacher makes choices each day about the best way to help each child become a better

reader and writer (Mermelstein, 2006). The balanced literacy model consists of three components: reading, writing, and word work. During the course of a day, literacy teachers conduct a reading workshop, writing workshop, and word work lesson (City of New York Department of Education, 2003). The reading workshop component requires teachers to read aloud to students and to read with students. Students also read in flexible groups and independently during the reading workshop component (City of New York Department of Education, 2003). Students in flexible groups transition in and out of groups according to specific learning goals (Gibeault, 2008). The writing workshop component mirrors the reading workshop, but incorporates writing activities. The word work component of the balanced literacy model includes phonemic awareness, phonics, and word study activities (City of New York Department of Education, 2003). Students spend up to sixty minutes in each component of the balanced literacy model (City of New York Department of Education, 2003). The balanced literacy model allows time for students to work together, which provides support through scaffolding activities guided by the teacher (Mermelstein, 2006).

District A does not use the balanced literacy model at the middle school level. A traditional basal reader approach is used for reading instruction instead. The basal reader approach refers to reading instruction based on predetermined vocabulary, worksheets, workbooks, and texts. Using a manual as a guide, teachers systematically teach a progression of skills and assess student progress with unit tests (Castellano, 1994). The traditional basal reader involves direct instruction from the teacher, as well as individual student work. Students spend 50 minutes a day receiving instruction and completing activities as part of the traditional basal reader approach (District A, 2006). Students

reading below grade level are not provided individualized support in a consistent manner across all schools at the middle level. District A began to explore intervention programs designed to help middle school students who were reading below grade level increase their reading skills and improve their performance on the MAP Communication Arts Test. School District A adopted the READ 180 Reading Intervention Program in the fall of 2004 for this purpose (District A, 2006).

In 2004, the Individuals with Disabilities Education Improvement Act (IDEIA) was reauthorized, which encouraged states and school districts to use Response to Intervention (RtI) models to help prevent reading difficulties and to identify students with learning disabilities (Gersten, Compton, Connor, Dimino, Santoro, Linan-Thompson, & Tilly, 2008). Scholastic, Inc. (2007) defined RtI as:

a multi-tiered intervention model used by schools to offer increasingly intensive interventions to those students who are not making adequate progress in the core curriculum (Tier I). Interventions in Tiers II and III may be intensified by increasing instructional time, decreasing group size, using materials matched to students' instructional levels, modifying modes of presentation, and providing regular feedback. (p. 3)

Gersten, et al. (2008) provided further clarification for the three tiers of the RtI model as it relates to reading. Reading instruction at Tier I is provided to all students and incorporates a universal screening component (Gersten, et al., 2008). In order to identify struggling readers, universal screening at Tier I involves assessment of all students at least once a year (Gersten, et al., 2008). Reading interventions are offered as a component of Tier II. The reading interventions are provided to students identified as

struggling readers based on their universal screening measures (Gersten, et al., 2008). “Tier 2 students receive supplemental, small group reading instruction aimed at building foundational reading skills” (p. 4). The third tier of the RtI model incorporates reading interventions for students who show little or no progress after their experience with Tier II interventions. Whereas interventions at Tier II typically occur for “20-40 minutes three to five times per week,” it has been recommended that Tier III interventions occur daily for up to 75 minutes at a time, 5 days per week with increased time and frequency (Gersten, et al., 2008, p. 6).

District A implemented the READ 180 Reading Intervention Program in 2004 as a pilot at one middle school in an effort to incorporate the RtI model into the district. At the time, the district operated two middle schools. For the purposes of this study, the schools are referred to as Middle School 1 and Middle School 2. The initial pilot of READ 180 was conducted at Middle School 1 and concluded at the end of the 2004-05 school year (District A, 2006). The READ 180 Reading Intervention Program was approved for use at Middle School 2 in 2005 without clear evidence of the program’s effect on student achievement as measured by the MAP Communication Arts Test. In 2008, the district added a third middle school, here referred to as Middle School 3, to relieve overcrowded conditions in Middle School 1 and Middle School 2. READ 180 was approved for use at Middle School 3 in 2008. District A uses the READ 180 Reading Intervention Program as a Tier III intervention for sixth through eighth grade students at every middle school in the district (District A, 2006). According to the district’s communication arts instructional coach, an average of 500 students participate in READ 180 programs at the middle school level each school year (District A, 2006).

Despite the implementation of the READ 180 Reading Intervention Program, District A's student achievement at the middle school level, as measured by the MAP Communication Arts Test, remained a concern. In 2006, 59.1% of sixth grade students scored at the Basic and Below Basic level which are the two lowest achievement levels of the MAP Communication Arts Test (Missouri Department of Elementary and Secondary Education, 2010). The sixth grade reading achievement as measured by the MAP Sixth Grade Communication Arts test did not improve over the next four years. As shown in Table 1, 47% or more of the sixth grade students in each of District A's three middle schools scored at the Basic and Below Basic levels of the MAP Communication Arts Test in 2010.

Table 1

*District A MAP Communication Arts Scores Basic and Below Basic 2008-2010*

Year	2008	2009	2010
Middle School 1	56.5%	54.7%	59.3%
Middle School 2	54.2%	65.7%	58.0%
Middle School 3	N/A	55.5%	47.6%

*Note.* Adapted from *Missouri Department of Elementary and Secondary Education School Data and Statistics*. The "N/A" signifies scores were unavailable for Middle School 3 because it did not exist prior to 2009.

The reading proficiency and corresponding student achievement of sixth grade students is of particular interest because of the differences between the elementary and middle school levels in District A. As identified previously, the balanced literacy approach has been used to guide reading instruction at the elementary level in District A.

In contrast, reading instruction at the middle school level has been based on a traditional basal reader approach until 2004.

Another difference between the elementary and middle schools in District A is student schedules. In District A, sixth grade is the first year of middle school. Students who are moving from fifth grade at the elementary level to sixth grade at the middle school level face a significant change in the school schedule they have become accustomed to for the first six years of their school career. In elementary school, students are assigned one teacher who provides instruction in the core academic areas of communication arts, mathematics, science, and social studies. Elementary teachers are provided many opportunities to become familiar with the unique learning styles of each of their students and can adjust instruction accordingly (District A, 2006). However, middle school students are assigned multiple instructors who teach specific courses. A typical middle school student's schedule in District A consists of one reading, mathematics, science, and social studies course. The typical middle school student schedule also includes a foreign language and two elective courses. Elective courses include exploratory classes such as family and consumer science, physical education, and various music courses.

Teachers at the middle school level are required to teach six separate class periods per day. Class sizes at the middle school level in District A average 28 students per class period; whereas, the average elementary class size is 24 students (District A, 2006). Middle school teachers in District A are responsible for teaching an average of 168 students each day while simultaneously trying to meet the unique academic needs of individuals (District A, 2006).

Reading is often one of the areas of concern for students transitioning to the middle school level. Students who struggled with reading in elementary school do not improve their reading skills in middle school. The Nation's Report Card, published by the IES National Center for Education Statistics (2009), presented data that 69% of fourth graders in the United States were reading below the proficient reading level in 2005. Four years later, the reading proficiency of this same cohort was assessed. Sixty-eight percent of these now eighth grade students were reading below the proficient reading level in 2009 (IES National Center for Education Statistics, 2009).

The reading proficiency trends identified by the IES National Center for Education Statistics are reflected in District A's reading achievement at the middle school level. These reading deficits negatively affect other content areas at the middle school level if they continue without being addressed (Afflerbach, Pearson, & Paris, 2008). District A adopted the READ 180 Reading Intervention Program in order to help struggling readers at the middle school level. The district has not analyzed data regarding the program's influence on student achievement as measured by the MAP Communication Arts Test. Research is necessary to examine the effect of the READ 180 Reading Intervention Program on the reading proficiency and related academic achievement of students at the middle school level in District A.

### **Background and Conceptual Framework**

District A is located in a suburban community, which borders the southeast side of Kansas City, Missouri, the second largest metropolitan area in the state. In 2010, the total enrollment in District A was 8,614 students. Information regarding the district's ethnicity for the past five years is indicated in Table 2. The student population became



more diverse over this period. The number of students who qualified for free or reduced meal rates has doubled in the last ten years. Currently, 41% of the students in District A qualify for free or reduced meal rates (Missouri Department of Elementary and Secondary Education, 2011a). District A has found it necessary to offer increased instructional support to meet the needs of its changing population.

Table 2

*District A Ethnicity Data 2006-2010*

Year	2006	2007	2008	2009	2010
Asian	1.5%	1.9%	1.9%	1.9%	2.0%
Black	39.6%	41.1%	42.8%	45.0%	46.9%
Hispanic	5.30%	6.10%	6.70%	7.30%	7.60%
Indian	0.50%	0.50%	0.40%	0.40%	0.40%
White	53.1%	50.4%	48.1%	45.4%	43.2%

*Note.* Adapted from *Missouri Department of Elementary and Secondary Education Missouri Comprehensive Data System (2011a)*.

As indicated in Table 3, District A's middle schools have failed since 2008 to meet Adequate Yearly Progress (AYP) as required by the Missouri Department of Elementary and Secondary Education (MO DESE) and NCLB. The AYP target increases every year. Schools that do not meet the AYP target do not have the required percentage of students scoring Proficient or Advanced, which are the two highest achievement levels, on the MAP Communication Arts Test in a given year. For example, in 2008, each school was required to have at least 51.0% of its students score at the Proficient or Advanced level on the MAP Communication Arts Test. Middle School 1 and Middle

School 2 failed to meet the 2008 AYP target. With the exception of Middle School 3 in 2010, the number of students scoring at the Proficient or Advanced level on the MAP Communication Arts Test in District A remained under 46% since 2008. Therefore, the gap between the increasing AYP target and student scores has widened each year.

Table 3

*District A Middle School AYP Data 2008-2010*

Year	2008	2009	2010
Missouri AYP Target	51.0%	59.2%	67.4%
Middle School 1	45.8%	45.2%	43.4%
Middle School 2	43.4%	35.2%	41.2%
Middle School 3	N/A	45.9%	54.2%

*Note.* From Missouri Department of Elementary and Secondary Education School Data and Statistics (2010). The “N/A” signifies scores were unavailable for Middle School 3 because it did not exist prior to 2009.

District A collects limited data to determine the effectiveness of READ 180. One set of data the district collects is the reading growth of students in a given year as evidenced by their achievement on the Scholastic Reading Inventory (SRI), which is administered in the fall, winter, and spring. The SRI is described by Scholastic, Inc. (2011) as a research-based, computer adaptive assessment for K-12 students that measures reading comprehension and provides reports for teachers and administrators using Lexile measures. Lexile measures indicate the level at which students can read with 75 percent comprehension (Scholastic, Inc., 2011). Lexile measures range on a scale from 200 to 1700 and are indicated by a number followed by the letter L (Scholastic, Inc., 2011).

In the spring of the 2004-05 school year, District A created a “READ 180 Data Report” providing a summary of sixth through twelfth grade student data for the administration and Board of Education to review (District A, 2005). It was reported that 42% of the students participating in READ 180 during the 2004-05 school year experienced between .50 and 4.0 years of reading growth as measured by the SRI. The report also included data regarding the grades of students participating in the READ 180 program. The report indicates the percentage of students failing their reading course during the 2004-05 school year ranged from a low of 9% to a high of 24% across all middle schools. Additionally, the district identified the number of students exited from the READ 180 program because they were no longer reading two or more years below grade level as measured by the SRI. During the 2004-05 school year, 568 students were enrolled in READ 180 in grades 6-12. Of these students, 109 exited the program by the end of the year. The collection of this information led to the continued use of the READ 180 program across the district (District A, 2006). The district does not disaggregate SRI data to examine the performance of various demographics, such as gender, minority status, or socio-economic status. In addition, District A does not analyze MAP Communication Arts Test data to determine whether READ 180 helps to improve the achievement of students participating in the program.

### **Significance of the Study**

The focus on students who struggle with reading is often limited to primary grades and early reading experiences; however, the concern should intensify as students move to the middle school level. Despite significant advances in understanding the essential reading skills children in primary grades must acquire to become proficient

readers, the fact remains that many students transition to middle school without the skills and strategies to read successfully (Roe, 2004). Nelson (2008) reported, as struggling readers progress through elementary school to middle school, the discrepancy between the ability of proficient readers and struggling readers may become more apparent. The vocabulary and comprehension skills of proficient readers increase as they grow and progress in school. Conversely, struggling readers do not experience reading growth at the same rate as their peers who read proficiently, which results in larger achievement gaps in reading as they move to higher grade levels in school (Stanovich, 1986).

The READ 180 Reading Intervention Program is widely regarded as an effective means for helping middle school students improve their reading proficiency. Research sponsored by Scholastic, Inc., which is discussed in more detail in chapter two, has shown READ 180 to be effective for struggling readers at the middle school level (Palmer, 2003; Goin, Hasselbring, & McAfee, 2004; White, Williams, & Haslem, 2005). Although various studies maintain that students participating in READ 180 show growth, the studies do not provide strong evidence for causal conclusions of the program's effectiveness (Institute of Education Sciences, 2010). Independent research without influence from major stakeholders affiliated with the READ 180 program is necessary in order to obtain evidence regarding READ 180's impact on reading growth.

School districts, like District A, have placed their confidence in the READ 180 program's ability to drastically improve reading proficiency based on Scholastic, Inc.'s claim that it is an "effective adolescent literacy intervention" (Scholastic, Inc., 2009, p. 5). This confidence, however, has been acquired at a high cost to District A's budget. The materials required to implement the READ 180 Reading Intervention Program

include teacher guides, resource books, software manuals, reports guides, SRI placement tests, software, and supplemental materials (Scholastic, Inc., 2004a). In 2004, District A's expenditures totaled over \$350,000 to purchase the required materials and equip 14 classrooms with the READ 180 program across the district (District A, 2006). The district followed Scholastic, Inc.'s recommendations for classroom set up with worktables conducive to small group instruction, reading stations with comfortable seating arrangements, and computer workstations consisting of 4-5 computers with a headset for each student (Scholastic, Inc., 2004b).

In addition to purchasing the required equipment and materials for READ 180, the district incurs costs associated with teacher training and resource updates on an annual basis. READ 180 teachers are paid by the district to participate annually in summer training (District A, 2006). The district also pays a yearly licensing fee in order to access the READ 180 management and student software. Since school districts such as District A are charged with being fiscally responsible with the tax dollars they are provided, it is imperative that district leaders have evidence to determine whether programs such as the READ 180 Reading Intervention Program are worth the financial investment. The current research was designed to determine if District A's purchase of the READ 180 program helped them realize reading proficiency and student achievement gains.

### **Purpose Statement**

The primary purpose of this study was to analyze the level of reading improvement of sixth grade students on the SRI and MAP Communication Arts Test after participation in the READ 180 Reading Intervention Program for one or two semesters.

A secondary purpose of the study was to determine whether selected demographics (i.e. gender, minority status, and socioeconomic status) significantly affected the reading improvement of students in the READ 180 Reading Intervention Program.

### **Delimitations**

Lunenburg and Irby (2008) define delimitations as boundaries on the purpose and scope of the study set by the researcher. This study was delimited to District A, a suburban community, which borders the southeast side of Kansas City, Missouri. Study participants were limited to 85 sixth grade students enrolled in the READ 180 program during the fall and spring semester of the 2009 – 2010 school year. Two assessments, the SRI and MAP Communication Arts Test, were used to assess the reading proficiency of the students in the study. The SRI was administered at three separate times during the study period. The MAP Communication Arts Test was administered once before and once during the period of the study. The ability to generalize the study findings beyond District A may be affected by these delimitations.

### **Assumptions**

Assumptions describe what the researcher takes for granted in the study (Roberts, 2004). This study has several assumptions. The first assumption is that the sample selected for the study in the 2009-10 school year was representative of the total population of sixth grade students in District A. A second assumption in the study is the Scholastic Reading Inventory (SRI) serves as a reliable assessment to evaluate the reading ability of middle school students. Another assumption is the Missouri Assessment Program (MAP) Sixth Grade Communication Arts Tests are reliable indicators of academic achievement. In addition, an assumption has been made that the

students in the sample put forth their best effort on the SRI and MAP Communication Arts Test. An additional assumption of the study is teachers involved in the READ 180 Reading Intervention Program had comparable skills in communication and classroom management. The final assumption is the READ 180 teachers in District A implemented the program with fidelity by following the guidelines provided by the publisher.

### **Research Questions**

Research questions serve as the “directional beam for the study” (Lunenburg & Irby, 2008, p. 126). Ten research questions guided this study to investigate the effect of READ 180 on the reading proficiency of sixth grade students in District A. In addition to providing direction, the research questions helped to identify the variables of interest in the study. The following research questions were addressed in the study.

1. To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory?
2. To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Missouri Assessment Program’s Sixth Grade Communication Arts Test?
3. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by gender?
4. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the

Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by gender?

5. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by socioeconomic status?
6. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by socioeconomic status?
7. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by minority status?
8. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by minority status?
9. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by the length of time in the program?
10. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by the length of time in the program?



## **Overview of Methodology**

A quantitative research design was used in this study. The two dependent variables were growth as measured by the Scholastic Reading Inventory (SRI) and growth as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test. The independent variables of the study were length of time students were in the READ 180 Reading Intervention Program, gender, socioeconomic status, and minority status of students. Archival data from 85 sixth grade students reading two or more years below grade level as measured by the SRI was analyzed for the study. A one-sample *t* test and a *Z* test of 2 proportions were used to determine the effect of the READ 180 Reading Intervention Program on the achievement of students participating in the program. Multiple Analysis of Variance (ANOVAs) were used to test the interaction effect of test time and the independent variables of the study.

## **Organization of the Study**

This research report is divided into five chapters. Chapter one discusses the rationale for the study, the purpose of the study, research questions, and definition of key terms used throughout the study. Chapter two presents a review of the related literature regarding reading instruction. It includes a detailed description of the core components of reading instruction and reading intervention programs. Chapter three identifies the research design and methodology of the study. A description of the study's instrumentation, data collection methods, and statistical analysis procedures are discussed. An analysis of the data collected during the study and the related findings are discussed in chapter four. A summary of the study, conclusions, and recommendations for future studies are provided in chapter five.

## **Chapter Two**

### **Review of Literature**

The purpose of this study was to analyze the reading improvement of sixth grade students participating in the READ 180 Reading Intervention Program and to determine if selected demographics significantly affected the reading proficiency of these students.

This chapter presents a review of the research and literature surrounding READ 180 with a particular focus on adolescents at the middle school level who are struggling readers. The literature review begins by discussing the No Child Left Behind Act (NCLB) of 2001. Next, the establishment and findings of the National Reading Panel are addressed in detail. Finally, the literature review concludes with an exploration of the READ 180 Reading Intervention Program including the theoretical framework and related research.

Several databases were used to identify current research and literature related to reading, reading instruction, struggling readers, and reading intervention programs. Electronic databases, such as ERIC and ProQuest, were used to locate peer-reviewed studies and dissertation abstracts addressing adolescent reading. Readings from books and professional journals provided a foundation for examining instruction and reading intervention programs. The Scholastic, Inc. READ 180 website, and related sub-content, was used as a primary source to review information specific to the program and explore research relating to the influence of READ 180 on struggling readers.

#### **A National Crisis**

According to the U.S. Department of Education (2005) student reading scores on the National Assessment of Educational Progress (NAEP) have not increased significantly for the past two decades. The lack of reading improvement is a concern due

to the number of federal initiatives that have been established in order to have an impact on reading achievement across the country. The federal focus on reading can be traced back to the establishment of the Elementary and Secondary Education Act (ESEA). In 1965, President Lyndon B. Johnson signed into law the ESEA which allocated additional resources to schools across the United States in order to support compensatory education through the newly created Title I program (Pearson, 2002). Harris and Hodges (1995) defined Title I as “the federally funded compensatory education program in the United States, intended to serve children of lower socioeconomic backgrounds who may be at risk of school failure, particularly in the elementary grades” (p. 257).

As a complement to the ESEA, the Commissioner of Education, James Allen established the Right to Read program in 1969 (Pearson, 2002). Commissioner Allen’s goal was to assure that every child in the United States would learn to read proficiently by the end of the decade (Pearson, 2002). The Commissioner’s call to action helped to propel changes in reading instruction and support for struggling readers. One of the most influential changes to reading instruction came from the results of the National Reading Panel.

### **National Reading Panel**

The growing concern over reading achievement across the nation increased significantly with the publication of the *A Nation At Risk Report* (The National Commission on Excellence in Education, 1983). The climate during this time was described by Shanahan (2006) in his publication, *The National Reading Panel Report: Practical Advice for Teachers*, as follows:

It is the 1990s and dark shadows lie across the land of reading education. *Time* and other news magazines begin referring to “reading wars,” war being an apt

metaphor for the bitter debates over how to teach reading were raging in the nation. When this war of words...became so intense that it disrupted schooling and threatened to undermine confidence in public education, something unprecedented took place. For the first time in history, the federal government...required that a group of scientists, teachers, administrators, and teacher educators determine what research had to say about reading. (p. 1)

The requirement to analyze reading research came directly from the United States Congress in 1997. The Director of the National Institute of Child Health and Human Development (NICHD) was required by congress to convene a national panel to review the current research base and literature regarding reading (National Institute of Child Health and Human Services, 2000). The panel would later become known as the National Reading Panel (NRP), and was comprised of fourteen individuals who were selected from over 300 applicants (International Reading Association, 2002). The group was made up of a diverse collection of participants from various sectors of education including scientists engaged in reading research, psychologists, a pediatrician, a teacher, administrators, a principal, and a parent.

The NRP quickly began its work by developing a methodology to undertake comprehensive, formal, evidence-based analyses of the experimental and quasi-experimental research literature focused on teaching children to read (Center for Development and Learning, 2010). The NRP narrowed down over 100,000 reading studies by identifying topics that were generated from five regional public hearings held across the country in 1998 (National Institute of Child Health and Human Services, 2000). The NRP chose eight topics to explore, including phonemic awareness, phonics,

oral reading fluency, vocabulary development, and comprehension strategies (Shanahan, 2006).

The guiding question used by the NRP to analyze the importance of phonemic awareness asked whether direct instruction in phonemic awareness improves reading (National Institute of Child Health and Human Services, 2000). The panel defined phonemic awareness as a child's ability to focus on and manipulate phonemes in spoken words (Woods, 2007). Phonemes are the smallest units of sound in language (National Institute of Child Health and Human Services, 2000). The results of the panel's research showed that explicit phonemic awareness instruction helps students learn to read. The NRP found that phonemic awareness instruction "produced positive effects on both word reading and pseudoword reading, indicating that it helps children decode novel words as well as remember how to read familiar words" (National Institute of Child Health and Human Services, 2000).

The NRP also identified phonics as an area of focus for their study. Phonics is the act of linking sounds to letter symbols and combining them to make words (Woods, 2007). Phonics instruction is not a new area of focus in literacy research. Flesch (1955) argued that if teachers would help students to make meaning of letters instead of whole words, they could learn to read. Pearson (1996) suggested that students must understand the basis of oral and written language and how the two work together through the representation of the English language in order to become proficient readers. The NRP conducted a meta-analysis of 38 studies that helped to provide evidence on the effects of phonics instruction. Based on this research, the NRP recommended that reading

instruction should include the systematic implementation of phonics strategies (International Reading Association, 2002).

The NRP attempted to determine whether guided oral reading instruction improved fluency and reading comprehension (Center for Development and Learning, 2010). The panel analyzed 26 studies that examined the impact of guided oral reading on students and the practicality of various guided oral reading procedures. The NRP concluded that guided oral reading has a significant positive impact on word recognition, reading fluency, and comprehension when provided with feedback (International Reading Association, 2002). Guided oral reading instruction was shown to have a positive effect on good readers and struggling readers (National Institute of Child Health and Human Services, 2000). Conversely, the NRP was unable to determine whether the use of individual silent reading resulted in reading fluency improvements (Woods, 2007). However, the panel recommended that silent reading be used as part of reading instruction despite the lack of strong supporting evidence.

The correlation of vocabulary instruction on reading achievement was another area of focus for the NRP. In order to carry out scientific reviews, 47 studies focused on vocabulary and text comprehension instruction were analyzed (National Institute of Child Health and Human Services, 2000). Reviews of the research indicated that vocabulary instruction helped to improve student reading achievement (Shanahan, 2006).

Comprehension can be defined as the capacity of an individual to perceive and understand the meanings communicated by text (Wilhelm, 2011). In order to determine if teaching students comprehension strategies would improve their reading, the NRP analyzed 203 studies. Based on these studies, the panel found several specific

comprehension instruction strategies that appeared to be effective. The strategies included comprehension self-monitoring, cooperative learning, graphic and semantic organizers, questions about story structure, teacher questioning and self-questioning, and summarization (National Institute of Child Health and Human Services, 2000). The panel also concluded that comprehension instruction can help students to learn and use comprehension strategies that benefit them during reading (National Institute of Child Health and Human Services, 2000).

The conclusions from the National Reading Panel's report clearly provide strong support for phonemic awareness, phonics, fluency, vocabulary, and comprehension instruction. This influential report had a profound effect on national educational policy. The National Reading Panel's findings influenced programs aimed at increasing the reading proficiency of struggling readers. Many of the most popular reading intervention programs in use today incorporate the five key elements identified in the report. The key findings of the NRP were used to guide the creation and establishment of the No Child Left Behind Act of 2001 (U.S. Department of Education, 2012b).

### **No Child Left Behind**

In order to respond to the conclusions of the National Reading Panel's report and the continued scrutiny of public education, the federal government launched an unprecedented effort in educational reform called the No Child Left Behind Act (NCLB) of 2001 (Woods, 2007). President George W. Bush, after signing NCLB into law, declared:

Today begins a new era, a new time for public education in our country. Our schools will have higher expectations – we believe every child can learn. From

this day forward, all students will have a better chance to learn, to excel, and to live out their dreams. (Committee on Education & the Workforce, 2002, p. 1)

NCLB marked the beginning of an era of accountability, local control, and federal funding to support programs proven by research to be effective (Jorgensen & Hoffmann, 2003). As part of NCLB, states were required to build assessment systems to track the achievement of all students against a common set of high instructional standards (U.S. Department of Education, 2012b).

In accordance with NCLB, each state in the United States was required to assess third- through eighth-grade students in reading and mathematics on an annual basis. Test results identifying student achievement for each school and district were required to be published in a public domain so that schools across the nation could be compared (U.S. Department of Education, 2012b). NCLB also created the proficiency standard called Adequate Yearly Progress (AYP). AYP holds schools and districts accountable for the improvement of all children, but particularly those who are minority or from low socioeconomic households (Jorgensen & Hoffmann, 2003). Schools and districts failing to meet AYP are subjected to corrective action including loss of funds, student transfers, and providing mandated tutoring.

In March 2010, President Barack Obama reauthorized NCLB. The reauthorization extended the framework of NCLB to include the promotion and recognition of innovative programming aimed at supporting school success (U.S. Department of Education, 2012a). States also were provided increased local control through a competitive funding process to improve the achievement of all students.



A major focus of NCLB is to eliminate the achievement gap between student groups (Jorgensen & Hoffmann, 2003). Achievement gaps are created when one student group performs significantly higher than another student group on standardized assessments (IES National Center for Education Statistics, 2011). One of the most common achievement gaps studied is the difference in the reading ability between male and female students.

A variety of research has demonstrated that boys underperform girls on standardized measures of reading achievement. In fact, a large international study, the International Association for the Evaluation of Educational Achievement or IEA, found in all 32 countries studied, boys significantly underperformed relative to girls on all the literacy skills tested, with the sole exception of workplace literacy (Elley, 1992). Utilizing the results of the IEA, Purves (1992) found that “gender by itself or in combination with certain home variables was the most powerful predictor of performance, particularly with academic tasks” (p. 201). International student achievement data is comparable to data from the United States which also shows a gap between the performance of boys and girls (Newkirk, 2000).

In the United States, the Educational Testing Service reported that boys in the eighth grade are six times farther behind girls in reading achievement (Cole, 1997). In a publication titled *Trends in Educational Equity of Girls and Women*, Coley (2001) explored gender differences in education. He concluded that girls and boys start school with similar experiences, but girls quickly begin to outperform boys in reading and writing (Coley, 2001). Rutter, Caspi, Fergusson, Horwood, Goodman, and Maughan

(2004) concluded that boys were more likely to be diagnosed as reading disabled than girls.

Reading research resulting from the National Assessment of Educational Progress (NAEP) also provides important information regarding the literacy gap that exists between adolescent males and females. The NAEP is the largest assessment of student academic performance utilized in the United States (IES National Center for Education Statistics, 2010). NAEP results are used to compare student achievement across all states. NAEP results can also be used to compare student academic progress over time because the assessment does not change from year to year (IES National Center for Education Statistics, 2010).

In 2007, students demonstrated their reading comprehension skills on the NAEP reading assessment. Reading abilities were assessed in the contexts of literary experience, gaining information, and performing a task. A representative sample was created consisting of 350,000 students in fourth and eighth grade from across the nation (IES National Center for Education Statistics, 2007). In 2007, female students scored 10 points higher than male students at grade 8. These gender score gaps were not significantly different from the gaps seen 15 years ago (IES National Center for Education Statistics, 2007). In addition to reporting on the performance of males and females, NAEP also summarizes results for a variety of subgroups of students for each grade level assessed. Subgroup data indicate how groups of students perform in comparison with one another and provides information regarding the progress each group has made over time (Grigg, Daane, Jin, & Campbell, 2003).

The 2009 NAEP identified an additional gap commonly found between the literacy skills of adolescents from minority ethnic groups and their white counterparts. Test results (provided in Table 4) show that despite an overall increase in the reading achievement of Black and Hispanic students, the overall improvement of minority students did not result in the narrowing of the achievement gaps with White students (IES National Center for Education Statistics, 2010).

Table 4

*Average NAEP Scale Scores of 8<sup>th</sup> Grade Students by Race/Ethnicity: 2009, 2007, 2005, and 2003*

Year	White	Black	Hispanic	Asian or Pacific Islander	American Indian	Unclassified
2009	273	246	249	274	251	267
2007	272	245	247	271	247	265
2005	271	243	246	271	249	266
2003	272	244	245	270	246	266

*Note:* From *The National Center for Educational Statistics (2010)*

The literacy gap between minority students and White students shown in the 2009 NAEP reading results is not a new phenomenon. The NAEP Reading Report Card for 2002 indicated that Blacks and Hispanics score well below their White peers. As Table 5 indicates, in 2002 at eighth grade, two to three times as many Blacks score below basic than do Whites. The comparison of Hispanics to Whites is nearly the same. At the other end of the scale, two to three times as many Whites score at proficient or above than do Blacks and Hispanics (Grigg, et al., 2003).

Table 5

*NAEP Student Data by Race/Ethnicity and Reading Achievement Level 2002*

Grade 8	% below basic	% at basic	% at or above proficient
White	16	43	41
Black	45	42	13
Hispanic	43	42	15

*Note.* From *The Nation's Report Card Reading 2002* (Grigg, Daane, Jin, & Campbell, 2003, p. 55)

Another literacy achievement gap has been identified in the review of literature regarding adolescent reading achievement. The difference between the academic performance of poor students and wealthier students is another common achievement gap (McCall, Hauser, Cronin, Kingsbury, & Houser, 2006). Since 1998, the average reading score for students who were eligible for free or reduced price school lunch has been consistently lower than students who are not eligible for subsidized assistance (IES National Center for Education Statistics, 2010). Table 6 provides a summary of the average scale scores of eighth grade students who took the NAEP reading assessment from 2003 to 2009. The average scale scores for eighth graders who qualify for the free and reduced school lunch program have been consistently lower than students who are not eligible for the free and reduced lunch program for the past decade (IES National Center for Education Statistics, 2010).

The NAEP is not the only assessment utilized throughout the United States that identifies a literacy gap between economically disadvantaged students and their more affluent peers. The Northwest Evaluation Association (NWEA) reported a study in 2006 that examined the achievement gap of students from a wide variety of school districts

across the United States. The NWEA study examined the achievement gap between students in low-poverty schools and those in high-poverty schools. The study measured student achievement and student growth along a continuous, cross-grade measurement scale (McCall, et al., 2006). The study found that an achievement gap exists between students in low-poverty schools and those in high-poverty schools for all grades and subjects studied. This achievement gap indicates that groups of students in high poverty schools continue to underperform in comparison to students in low-poverty schools over time (McCall, et al., 2006).

Table 6

*Average NAEP Scale Scores of 8<sup>th</sup> Grade Students by Eligibility for Free and Reduced Lunch: 2009, 2007, 2005, and 2003*

Year	Eligible	Not Eligible	Information Not Available
2009	249	273	280
2007	247	271	277
2005	247	270	275
2003	247	271	272

*Note: From The National Center for Educational Statistics (2010)*

Educators across the country are often asked for their opinions on how to close the literacy achievement gap amongst adolescent readers. For researchers and educators who study adolescent literacy, questions are now coming more frequently and urgently due to the increased availability of information regarding the reading difficulties of adolescents (Fisher & Ivey, 2006). These questions have created a sense of crisis in adolescent literacy that begs for immediate solutions. The federal government, states

across the nation and local school districts are responding by focusing on ways to improve the reading achievement of adolescent readers.

Adolescence is often portrayed as a period of immaturity, instability, and turbulence. For instance, teacher candidates in pre-service middle school methods courses described early adolescence with terms such as “raging hormones,” “out of control,” and having “lost all ability to reason” (Finders, 1999, p. 253). This one-dimensional view often overshadows the complex developmental stage, known as adolescence, that individuals must go through to reach adulthood. Elliot and Feldman (1990) offered a more holistic definition of adolescence describing it as a distinct stage of life where individuals mature physically and realign themselves. Robinson (1998) defined adolescent students as “a walking set of opposites” (p. 3). Adolescents are independent, yet seeking guidance, support, and love; they are full of confidence, bravado, and spunk, yet shy and tentative inside (Robinson, 1998). It is clear from the literature that adolescents are incredibly complex, which makes it difficult to provide reading support to students going through this stage of life.

Early reading research tended to focus on the young or early learner (Alexander & Fox, 2008). However, research on readers of all ages and ability levels, specifically adolescents, began to develop as the 20<sup>th</sup> century drew to a close. In a position statement titled *Adolescent Literacy*, the International Reading Association (1999) called for additional focus on adolescents because of their need for high levels of literacy to understand the vast amount of information available to them and to prepare them for the future. For the first time in history, adolescent literacy became a major focus of reading research.

Adolescent readers can be quite diverse in their literacy abilities. Murphy and Alexander (2002) offered a detailed description of adolescent reading stages through six reader profiles. These six reader profiles are the highly competent readers, seriously challenged readers, effortful processors, knowledge reliant readers, non-strategic processors, and resistant readers (Alexander P. , 2005). The six reader profiles represent a continuum consisting of varying levels of reading success or difficulty as opposed to labeling students as good or poor readers. Murphy and Alexander (2002) consider highly competent readers to be at the successful end of the reading continuum, while the seriously challenged readers are on the unsuccessful end. Highly competent readers have a strong interest in reading, and are typically successful with the majority of reading tasks. Effortful processors are engaged during the reading process, but must use considerable effort in order to understand what they read. Knowledge-reliant readers rely solely on background knowledge to read successfully. Non-strategic processors do not possess adequate strategies for reading and struggle as a result. Resistant readers are not willing to engage in reading, despite having the ability to do so. Challenged readers lack fundamental reading skills necessary for reading success (Murphy & Alexander, 2002).

In order to better understand adolescent readers, Ivey (1999) spent five months observing three sixth graders representing three levels of reading ability and engagement. She found that these middle school students were complex and multi-dimensional as readers. Ivey found that the students she studied were interested in a wide range of reading material based on their personal interest. The students' disposition toward reading depended on their instructional environment (Ivey, 1999). Ivey's (1999) research demonstrates the importance of avoiding generalizations regarding adolescent readers.

Based on his observation of at-risk secondary school students, O'Brien (2001) also warned against the generalization of adolescents as readers. The researcher found that struggling adolescent readers can be multifaceted when faced with literary tasks of skillfully using various forms of media. Johannessen and McCann (2009) confirmed the need to view adolescent literacy outside of strict confines. From their perspective, literacy is not a static level of language achievement that separates literate from illiterate. Instead, literacy refers to a lifelong continuum of experiences with the processing, interpretation, and production of texts of all sorts.

The misunderstanding of adolescent readers and their abilities has led researchers to inaccurately identify the cause of reading problems when they occur. A popular theory of the mid-20<sup>th</sup> century was that physiological and neurological problems were the major cause of reading complications amongst older students (McCormick & Braithwaite, 2008). Body management activities such as walking on balance beams and tossing bean bags were recommended as interventions to alleviate reading difficulties amongst adolescents (McCormick & Braithwaite, 2008). The theory that reading problems were linked to physical and neurological dysfunctions was determined to be inaccurate as additional studies focused on adolescent readers were conducted (McCormick & Braithwaite, 2008).

As the body of knowledge regarding adolescent readers continued to grow, the identification of effective instructional strategies to support struggling readers became more accurate. Reading began to be viewed as a developmental skill acquired through sequential instruction. This view helped to establish a focus on reading and reading intervention at the secondary level (Smith, 2002). Researchers began to focus on the



identification of effective reading interventions for adolescent readers which spurred the development of various intervention programs (Biancarosa & Snow, 2004).

The number of reading intervention programs available to struggling readers is extensive. As early as 1999, researchers such as Dr. John Schater of the Milken Family Foundation, attempted to provide a list of intervention programs believed to have a positive effect on the reading achievement of students. Schater (1999) identified 36 different reading intervention programs schools could use in an effort to increase reading achievement. Schater's (1999) report provided a description of the professional development requirements, and cost for each program. However, the researcher's list lacked specific information regarding program components. The list also lacked detailed data regarding the effectiveness of each program.

The Institute for Education Sciences (IES) has attempted to expand on the work of researchers like Schater (1999) in an effort to provide educators with a comprehensive identification and evaluation of reading intervention programs. The IES is a subsidiary of the National Center for Education Statistics (NCES), the primary federal entity for collecting and analyzing data related to education (IES National Center for Education Statistics, 2011). In effort to address the nation's reading achievement concerns, IES has made the development and implementation of instruction and intervention programs in literacy a major focus (Shanahan, 2005). As a result, the IES has created a resource, called the *What Works Clearinghouse*, used by educators across the country to identify reading intervention strategies and programs to utilize in their schools. In order to provide information needed by decision makers, the *What Works Clearinghouse* uses scientifically valid criteria to identify and publishes summary reports on intervention

programs that have proven to be effective with students (U.S. Department of Education, 2011).

The *What Works Clearinghouse* provides accessibility to its various reports by utilizing an online query system. This system, allows users to select various combinations of outcome domains, grade levels, special populations, program effectiveness, delivery methods, and program types, in order to identify the interventions that best match the needs of the researcher (Institute of Education Sciences, 2011). When used to find reading interventions specifically found to be effective with middle school students through the use of various delivery methods, the *What Works Clearinghouse* identifies five programs. The first four programs identified are Peer-Assisted Learning Strategies, Success Maker, Fast ForWord, and the Cooperative Integrated Reading and Composition intervention. The fifth program identified by the *What Works Clearinghouse* is the READ 180 Reading Intervention Program. “READ 180 is a reading program designed for students in grades 3-12 whose reading achievement is below the proficient level” (Institute of Education Sciences, 2010, p. 1). Scholastic, Inc. (2011) considers the program to be a successful intervention for struggling readers.

### **READ 180.**

Multiple theoretical literacy models have influenced adolescent literacy theory, most of which emerged from the cognitive revolution era of the 1960s (Woods, 2007). Graves (2004) described five themes that emerged from the cognitive revolution: sociocultural theory, schema theory, interactive reading model, reader response theory, and constructivism. The theoretical framework for READ 180 is rooted in the constructivist and behaviorist theories (Woods, 2007).

Constructivism is the belief that learners create understanding through interaction and the context of the interactions (Draper, 2002). The emphasis of the constructivist theory is on the experience of the learner and the role of the learner's environment in the learning process. Multiple constructivist beliefs exist that differ greatly when considering human social interaction versus individual construction of knowledge (Phillips, 1995). The READ 180 Reading Intervention Model is based on situated cognition theory, which was spawned from constructivism (Woods, 2007). Situated cognition theory focuses on the process and context of learning (Phillips, 1995). An example of situated cognition can be found in anchored instruction. Anchored instruction occurs when students are placed in problem-solving environments and use guided experiences to build new knowledge (Woods, 2007).

The development of the READ 180 Reading Intervention Program started with the work of an interdisciplinary team of researchers, the Cognition and Technology group, at Vanderbilt University. The initial work of the Cognition and Technology group, led by Dr. Ted Hasselbring, focused on identifying the link between situated cognition and anchored reading instruction through the use of videos and other technology with students (Moore, Reith, & Ebeling, 1993). Situated cognition is based on the belief that information becomes knowledge in the context of authentic learning (Woods, 2007). The Technology and Cognition group identified lack of decoding skills, poor comprehension, inability to process academic language and content and low motivation as key factors preventing struggling readers from having authentic learning experiences (Davidson & Miller, 2002).

Using the key factors found to affect struggling readers, the Vanderbilt group developed a reading intervention program prototype. The researchers used situated cognition theory as the framework to support the development of the prototype (Moore, Reith, & Ebeling, 1993). A pilot of the prototype, known as the Peabody Learning Lab, was implemented during the 1994–1995 school year. The pilot involved over 10,000 students in Orange County, Florida public schools (Scholastic, Inc., 2011). Improvements in reading were observed the initial year and continued over the next three years of the pilot. Scholastic, Inc. entered into collaboration with Orange County Schools and Vanderbilt University in 1997, developing the model for the READ 180 Reading Intervention Program as it is currently known.

The READ 180 program includes several components when fully implemented. The framework is built upon a 90-minute instructional model. The model is broken down into small rotations incorporating 20 minutes of whole-class direct instruction, a small-group rotation period of 60 minutes, and 10 minutes of whole class wrap-up (Brown, 2006). The components of READ 180 instructional model are founded on the theoretical construct known as the Mental Discipline Theory which can be traced to the early philosophers Plato and Aristotle (Tracey, 2006). The Mental Discipline Theory assumes that the mind is a muscle, and like muscles of the body, it can be improved through exercise in the form of practice and repetition (Education Online, 2009). Each component of READ 180 instructional model allows students to build learning through constant rehearsal and drill.

During the whole-group instruction components of READ 180, the students receive direct instruction, which is supported by the resources available through the

teacher guide, compact discs, audio books, and paperback books (Scholastic, Inc., 2004a). Direct instruction, also known as explicit teaching, involves the teacher presenting material in small steps, checking for understanding, and ensuring successful participation of all students (Rosenshine, 1986). Direct instruction is well grounded in the construct developed by Pavlov and Skinner called the Behaviorist Theory, which focuses on positive reinforcement to influence learning (Conway, 1997).

The 60-minute small group period requires students to move through three 20-minute stations: small-group direct instruction with the teacher, individual work using READ 180 adaptive software, and reading and writing skills practice using leveled readers and audiobooks (Brown, 2006). The various group configurations utilized during the small group period are founded on theoretical constructs developed by John Dewey. Dewey believed that the use of small groups helped to facilitate authentic learning because the groups are created based on the academic needs of the students (Simpson, 2006).

READ 180's adaptive computer software is designed to support students by developing their phonemic awareness, decoding skills, and familiarity with content-area text. During their time on the computer, students are exposed to controlled text supported by the use of video (Brown, 2006). The use of video technology is directly linked to READ 180's foundation in situated cognition theory. The content-rich videos are used to provide background knowledge to help students build mental models that help improve their reading comprehension (Scholastic, Inc., 2004b). Students are also required to read leveled passages that include targeted sound-spelling patterns, high frequency words, and content area vocabulary multiple times (National Institute of Child Health and Human

Services, 2000). While reading on the computer, students may select highlighted words in order to hear the definition, pronunciation, and context clues (Davidson & Miller, 2002).

According to Scholastic, Inc. (2006), READ 180 utilizes the five elements of reading identified by the NRP: phonemic awareness, phonics, fluency, vocabulary, and comprehension. READ 180 incorporates phonemic awareness into the program by providing individualized training based on the assessed needs of individual students. The development of phonemic awareness skills occurs with explicit instruction in letter sound relationships in words and patterns (Scholastic, Inc., 2006). Phonics lessons are incorporated into READ 180 lessons by incorporating audio and visual instruction and models that provide decoding tips and word recognition strategies (Scholastic, Inc., 2006). Reading fluency activities incorporated into READ 180 include repeated reading of text with varying levels of audio support and speed. Students are exposed to fluent readers by teacher read-aloud activities and audio books (Scholastic, Inc., 2006). READ 180 helps students increase their vocabulary skills by providing definitions, context sentences, and pronunciation support throughout lessons on the computer. Students also are exposed to vocabulary during teacher read-alouds and related discussions in small groups. Comprehension skills and strategies are explicitly and systematically taught to students as they complete activities on the computer and during small group instruction (Scholastic, Inc., 2006). The comprehension strategies taught during READ 180 are strongly influenced by Schema Theory. Most often associated with Bartlett (1932), Schema Theory explains that students are able to comprehend text when they link new learning with existing knowledge (Bartlett, 1932). As students progress through the

READ 180 program, they are exposed to lengthier and increasingly difficult text that is directly related to previous learning experiences.

The READ 180 Reading Intervention Program has been the focus of multiple research studies. The vast majority of those studies are used by Scholastic, Inc. as evidence of the program's effectiveness. Scholastic, Inc. publishes the studies that support its program in the form of summary reports and professional white papers. These research studies are conducted by educational organizations throughout the United States (Scholastic, Inc., 2005). READ 180 research also covers a wide range of age and grade levels. For purposes of this study, the literature review is focused on studies involving upper elementary and middle school students.

Interactive, Inc. (2002), a third party research company, partnered with Scholastic, Inc. to conduct a study involving the Council of Great City Schools. The council is comprised of school districts in Dallas, Boston, and Houston. Each district agreed to select two middle schools in which to study the effect of READ 180 on student reading achievement. Each middle school was required to create a treatment group by identifying a total of 120 sixth and seventh grade students reading below grade level to participate in READ 180. Control groups also were established in each middle school. The researchers found the growth rate of students in the treatment group (+22.94) and the control group (+17.24) as measured by the Stanford Achievement Test (SAT-9) (Interactive, Inc., 2002).

Pearson and White (2004) analyzed reading achievement data from middle schools in the Fairfax County Public Schools, located in Fairfax, Virginia. Pre- and post-test scores from the SRI were compared after READ 180 was implemented in 11 of the

school district's middle schools during the 2002–2003 school year. The sample group included 548 seventh and eighth grade students participating in the reading intervention. The average change in the reading achievement of participants as measured by the SRI and reported as a Lexile measure was 97 L, with a confidence interval of 13.2 L and a standard deviation of 111.3 L (Pearson and White, 2004). A Lexile measure is a number indicating reading ability followed by an “L,” which stands for Lexile (Scholastic, Inc., 2008, p. 5). The Lexile measure has roots in the theory known as the zone of proximal development. Developed by Vygotsky (1978), the zone of proximal development defined the stage at which children could complete tasks without help or assistance from others. Lexile measures help to identify levels at which students can successfully read independently (Scholastic, Inc., 2008).

Admon (2005) analyzed the pre- and post-test SRI scores of 573 seventh and eighth grade students in the St. Paul School District. These students participated in the READ 180 program during the 2003-2004 school year. Admon (2005) found that students participating in READ 180 performed significantly better ( $p < 0.01$ ) on the SRI after READ 180 instruction. The researcher also found this growth to be consistent despite grade level and gender (Admon, 2005).

Haslam, White, and Klinge (2006) conducted a study of the READ 180 program in the Austin Independent School District, located in Austin, Texas. Seventh- and eighth-grade students who were reading below grade level were selected for participation in READ 180 during the 2004–2005 school year. The reading proficiency of READ 180 participants was matched and compared to a control group. READ 180 participants scored higher on the Texas Assessment of Knowledge and Skills (TAKS) Reading Test



than they had the previous year. These students also outperformed the control group as measured by the TAKS reading test. The average score of students in the treatment group increased by 6.6 Normal Curve Equivalent (NCE) scores on the TAKS. The average score of the control group increased 4.7 NCEs. The researchers found the difference in the gains of the two groups to be statistically significant (Haslam, White, & Klinge, 2006).

In an effort to support fifth and seventh grade students who were underperforming on state assessments, the Sevier County Public School in East Tennessee implemented READ 180 during the 2004–2005 school year. Nave (2007) analyzed the achievement of 110 students participating in READ 180 and compared it to 50 students in a control group. Achievement was measured by the students' performance on the Tennessee Comprehensive Assessment Program (TCAP). Fifth grade students participating in READ 180 gained an average of 24.1 points on the TCAP. In comparison, students in the control group lost an average of 2 points. Seventh grade students in the treatment group gained an average of 23.9 points on the TCAP. Seventh grade students in the control group lost an average of 8.3 points (Nave, 2007).

### **Summary**

The literature review provided an overview of NCLB and the impact of the law on reading instruction and interventions. The five key elements of reading instruction identified by the NRP were discussed in detail, as well as the role the report played in the establishment of NCLB. The achievement gaps between male and female students, minority and non-minority students, and low socioeconomic and middle to high socioeconomic students were confirmed. Next, adolescent readers along with their

various reading stages were defined. Finally, the literature review discussed the essential elements of reading intervention programs. Research related to the READ 180 Reading Intervention Program was shared. The majority of the research reviewed found the intervention program had a positive effect on student reading achievement. However, several of the studies were sponsored by Scholastic, Inc., the publisher of the program. Chapter three provides the research design, population and sample, hypotheses, limitations, data collection procedures, and statistical analysis of the study.

## **Chapter Three**

### **Methods**

The current study examined the effect of the READ 180 Reading Intervention program on the reading proficiency of sixth grade students reading two or more years below grade level. Chapter three describes in detail the research design of the study by addressing the population, sample, sampling procedures, instrumentation, and data collection procedures. A description of the analysis methods used to test the hypotheses of the study is also included. The chapter concludes with a statement of the study's limitations.

### **Research Design**

A quantitative research design was used to conduct the current study. The first dependent variable was growth, as measured by the Scholastic Reading Inventory (SRI); the second dependent variable was growth as measured by the Missouri Assessment Program's (MAP) Sixth Grade Communication Arts Test. The research design also included several independent variables. The independent variables were the number of semesters students were enrolled in the READ 180 Reading Intervention Program, the gender, minority status, and socioeconomic status. The number of semesters students were enrolled in the READ 180 Reading Intervention Program was categorized into one or two semesters. For the purposes of this study, African-American, Hispanic, and Asian students were identified as minority and White students were identified as non-minority. Socioeconomic status was separated into two student groups. One of the groups consisted of students who qualified for free or reduced meals. The second group included the students who did not qualify for free and reduced meals. A one-sample *t* test

and a Z test for two proportions were used to determine the effect of the READ 180 Reading Intervention Program on the achievement of students participating in the program. Multiple ANOVAs were used to test the interaction effect of test time and the independent variables of the study.

### **Population and Sample**

The target population for the current study was students in a suburban Missouri school district reading two or more years below grade level as measured by the SRI at the end of fifth grade. Students in the sample were in sixth grade. The sample consisted of 85 students who were enrolled in the READ 180 Reading Intervention Program during the 2009-2010 school year. The students were enrolled at one of the district's three middle schools: Middle School 1, Middle School 2, and Middle School 3. Seventy of the students were enrolled in the program for the entire school year which consisted of two semesters. Fifteen of the students exited the program after the first semester because they demonstrated sufficient improvement as measured by the SRI.

### **Sampling Procedures**

Purposive sampling was used to identify the participants for the study. Purposive sampling involves selecting a sample based on the researcher's experience or knowledge of the group to be sampled (Lunnenburg & Irby, 2008). The researcher had work experience in the district selected for the study and as a result was knowledgeable of the instrumentation used to measure student reading ability. In order to be included in the study, students were classified as sixth graders who were reading at least two years below grade level as measured by the SRI at the end of fifth grade in May 2009.

## **Instrumentation**

The instrumentation utilized in this study consisted of two major assessment tools. The first tool was the SRI. Scholastic, Inc. (2002a) described the SRI as an assessment tool for first through twelfth grades designed to measure student reading proficiency based on texts of varying difficulty levels. The SRI is available in a print format and an interactive software format. The item format of the print version of SRI is identical to the item format and content of the interactive software program version (Scholastic, Inc., 2002a). For the purposes of the district, participants were assessed using the interactive software program. Study participants were assessed three times during the 2009 – 2010 school year with the first SRI assessment given in September; the second assessment window occurred in December. Participants took the final SRI assessment in May.

The SRI requires students to answer comprehension questions from a bank of over 5,000 multiple-choice items. The items are based solely on non-fiction and fictional reading passages from children's literature, as well as excerpts from periodicals, newspapers, magazines, young adult, and classic literature (Thomas, 2005). The multiple-choice questions are presented as embedded completion items. This question format requires students to read a passage and select an option that best completes a sentence (Scholastic, Inc., 2007). In order to complete the sentence, students must recall facts, identify the main idea of the passage, and make inferences by forming connections between sentences in the passage. While the SRI does not have a time restriction, students typically take 20-30 minutes to complete the test (Scholastic, Inc., 2007). Results from the SRI are reported in both norm-referenced and criterion-referenced scores. Norm-referencing involves the comparison of individual student performance

with the performance of peers (Pimsleur, 1975). In contrast, criterion-referencing indicates how a student's performance is related to an absolute (or known) standard (Pimsleur, 1975).

Results from the SRI are reported as percentile ranks, grade equivalency scores, normal curve equivalent scores, and Lexile scores (Caggiano, 2007). Percentile ranks, a form of norm-referencing, indicate the percentage of cases falling at or below a given score (Steinberg, 2008). Grade equivalency scores, also a form of norm-referencing, describe students' scores in terms of a grade level and month the student is functioning (Kennesaw State University, 2011). Normal curve equivalent scores are a form of norm-referencing used to make comparisons between different tests and for determining an average score for a group of students (STAR Reading, 2009). Lexile scores use criterion-referencing to indicate a student's reading ability based on a metric scale (MetaMetrics, 2009).

After 15 years of research funded by the National Institute of Health and Human Development, the independent education company, MetaMetrics, developed Lexile scores (Scholastic, Inc., 2002b). Lexile scores provide a common scale for matching reader ability and text difficulty. The Lexile scores fall on a scale that can range from below 200L for beginning readers to above 1700L for advanced readers (Caggiano, 2007). A Lexile score represents a location on the scale where a student comprehends at least 75% of what is read independently (Scholastic, Inc., 2008). A Lexile score is represented by a number followed by an "L" which stands for Lexile (Scholastic, Inc., 2008, p. 5). The Lexile range for participants in this study was 200L to 700L. A typical sixth grade reader has a Lexile Range of 665L to 1000L (Scholastic, Inc., 2008).

Students are expected to increase their Lexile Range by 70L over the course of a school year (Scholastic, Inc., 2008).

The second instrument used to collect data in the study was the MAP Communication Arts Test. The MAP Communication Arts Test requires three to five hours of test administration. Students respond to selected-response items, constructed-response items, and performance events. Selected-response items present students with a question that is followed by up to five response options, while constructed-response items on the MAP Communication Arts Test require students to generate a response by showing their work and how they arrived at their answer (CTB McGraw-Hill, 2009). The performance events included in the MAP Communication Arts Test consist of writing prompts that students are expected to complete (CTB McGraw-Hill, 2009). According to CTB-McGraw-Hill (2009), the MAP Communication Arts Test addresses the following communication arts content standards:

1. Speaking and writing Standard English;
2. Reading and evaluating fiction, poetry, and drama;
3. Reading and evaluating nonfiction works and material;
4. Writing formally;
5. Comprehending and evaluating the content and artistic aspects of oral and visual presentations;
6. Participating in formal and informal presentations and discussions of issues and ideas;
7. Identifying and evaluating relationships between language and culture. (p. 2)

The MAP Fifth Grade Communication Arts Test was administered to all students in the study sample during their fifth grade year in April 2009. The MAP Sixth Grade Communication Arts Test was administered to the same group of students (cohort) during their sixth grade year in April 2010.

A student's performance on the MAP Communication Arts test is reported in one of four levels of achievement: below basic, basic, proficient, or advanced (CTB McGraw-Hill, 2009). The numbers of correct responses given by a student on the MAP Communication Arts Test are used to derive a MAP Scale Score. The scale score describes student achievement on a continuum that spans grades 3-8. The scale scores for participants in this study ranged in value from 450 to 910. Scale scores are used to determine a student's achievement level. In 2010, sixth grade students who were placed at the below basic achievement level had MAP scale scores that ranged from 505 - 630. Scale scores in the basic achievement level were 631 - 675. The proficient achievement level required sixth graders to have MAP scale scores of 676 - 703. MAP scale scores ranging from 704 – 855 resulted in sixth grade students being placed at the advanced level.

### **Measurement.**

The SRI and MAP Communication Arts Test are appropriate measures of student achievement in communication arts for multiple reasons. The SRI overcomes the disadvantage of other types of scores because test results are reported in scale scores (Lexiles) allowing for comparison of reading ability between different test administrations (Scholastic, Inc., 2007). The dependent variable, growth as measured by the SRI, was calculated by subtracting the September 2009 Lexile scores from the May



2010 Lexile scores of sixth grade students participating in the READ 180 Reading Intervention Program during the 2009-10 school year. The results were then compared to the growth students are expected to experience annually, which according to Scholastic, Inc. (2008) is 70L. The MAP Communication Arts Test includes a multiple-choice component referred to as the Terra Nova section. This norm-referenced section of the MAP Communication Arts test serves as an anchor to link student performance on the 2009 MAP administration to other administrations (CTB McGraw-Hill, 2009). Results from the Terra Nova section can be used to compare student achievement from different assessment periods. The second dependent variable of the study, growth as measured by the 6<sup>th</sup> Grade MAP Communication Arts Test, was measured by creating a yearly growth target for each student in the sample. The yearly growth target was created by subtracting each student's 5<sup>th</sup> Grade MAP Communication Arts Test scale score from 696, the scale score required for students to achieve proficiency by the 8<sup>th</sup> grade (Missouri Department of Elementary and Secondary Education, 2011b). The result was then divided by three, which is the number of years the student had to become proficient by 8<sup>th</sup> grade, resulting in a yearly growth target for each student. The difference between each student's 5<sup>th</sup> and 6<sup>th</sup> Grade MAP Communication Arts scale score was then compared to the yearly growth target to determine if the student made or exceeded expected growth or did not make expected growth.

### **Reliability and Validity.**

The normative information for the SRI is based on a sample of 512,244 students from a medium-large state in 1996 (Scholastic Inc., 2002a). In studies, the sample was shown to have similar means and standard deviations to the nation as a whole based on

demographic variables and score distributions. This similarity makes the sample suitable for approximating national norms (Scholastic, Inc., 2002b). The standard error is a measurement of an estimate's reliability (Steinberg, 2008). According to Morsy, Kieffer, and Snow (2010), the SRI has good reliability across reading levels because the standard error of measure ranges between 55 and 83 Lexile points. Lexile scores between 500 and 900 (approximately third to sixth grade level) on the sixth grade test were found to be the most reliable, suggesting that the SRI provides the most reliable information for sixth grade students who are reading near or below grade level (Morsy, et al., 2010).

Three types of validity were evaluated for the SRI: content validity, criterion-related validity, and construct validity. "The content validity of a test refers to the adequacy with which relevant content has been sampled and represented in the test" (Scholastic, Inc., 2007, p. 75). Scholastic, Inc. (2007) built content validity into the SRI by ensuring that the texts sampled were authentic, developmentally appropriate, and relevant. Criterion-related validity indicates how well a test predicts an individual's behavior in a specific situation (Scholastic, Inc., 2007). Because READ 180 is a reading intervention program, students who participate in the program are expected to show reading improvement as measured by the SRI (Scholastic Inc., 2007). Based on multiple studies in schools across the country, no statistically significant differences in the magnitude of pretest-posttest changes in reading ability were found to be associated with other characteristics (e.g. gender and race) of READ 180 participants (Scholastic, Inc., 2007). The construct validity of a test is the extent to which a test measures a theoretical construct such as reading comprehension (Scholastic, Inc., 2007). Multiple studies were conducted to determine the construct validity of the SRI. For one study in a large urban

school district, Scholastic, Inc. collected SRI data from all students in the second through the tenth grade. Scholastic, Inc. (2007) reported:

The data was examined to estimate growth in reading ability using a quadratic regression equation. Students with at least seven SRI scores were included in the analyses (45,495 students out of a possible 172,412). The resulting quadratic regression slope was slightly more than 0.50L/day (about 100L of growth between fall and spring). The median R-squared coefficient was between .800 and .849, which indicates that correlation between reading ability and time is approximately 0.91. (p. 87)

In accordance with the testing standards developed by the American Educational Research Association, American Psychological Association, and the National Council on Measurement in Education, CTB McGraw-Hill (2009) has calculated the reliability of each MAP test by determining the reliability of raw scores. The reliability of raw scores on the MAP Communication Arts Test were evaluated using Cronbach's coefficient alpha, which is a ratio of the variance of true test scores to those of observed test scores with possible values ranging from 0 to 1 (CTB McGraw-Hill, 2009). The closer the reliability coefficient is to 1, the more consistent the scores are to a perfectly consistent test (CTB McGraw-Hill, 2009). The reliability coefficients for the MAP Communication Arts Test are included in Table 7. All of these coefficients for the MAP Communication Arts Tests are 0.90 or greater indicating strong evidence for reliability (CTB McGraw-Hill, 2009).

CTB McGraw-Hill (2009) calculated the validity of each MAP Communication Arts Test by using divergent validity. "Divergent validity is a subtype of construct

validity that can be assessed by the extent to which measures of constructs that theoretically should not be related to each other are, in fact, observed as not related to each other” (CTB McGraw-Hill, 2009, p. 144). Correlations were computed by comparing the scale scores for the 65,716 students who took both the MAP Math Test and MAP Communication Arts Test in 2009 (CTB McGraw-Hill, 2009). The correlation coefficients ranged from 0.75 to 0.78. The correlation coefficients suggest that individual student scores for Communication Arts and Mathematics are moderately to highly related (CTB McGraw-Hill, 2009). Also, CTB McGraw-Hill examines how individual test items relate to each other and to the test as a whole (CTB McGraw-Hill, 2009). The various analyses conducted by CTB McGraw-Hill (2009) to determine the validity of item- and score-patterns of the MAP showed that each assessment is measuring the traits it is intended to measure and does not measure unrelated constructs.

Table 7

*Reliability in MAP Communication Arts Test (n = number)*

Grade	Number of Items	Cronbach's Alpha
3	57	0.90
4	55	0.92
5	55	0.92
6	55	0.90
7	61	0.92
8	61	0.91

*Note. CTB/McGraw-Hill Missouri Assessment Program Grade-Level Assessments Technical Report 2009.*

The SRI and MAP Communication Arts Test have been found to have good reliability and validity. Student scores from the SRI and MAP Communication Arts Test are reliable indicators of student achievement; therefore, both measures are appropriate for the current study.

### **Data Collection Procedures**

Prior to conducting the study, the researcher sought approval from District A by contacting the district's deputy superintendent. The researcher met with the deputy superintendent in the spring of 2011 to explain the research project and identify the specific student data sought for the study. The deputy superintendent granted permission in May 2011 (see Appendix A). A request was submitted to the Baker University Institutional Review Board (IRB) on February 28, 2012 (see Appendix B). The IRB committee approved the research on March 5, 2012 (see Appendix C). After approval was received from Baker University, the researcher contacted District A to collect the data necessary for the study. Archival data was requested for each student identified for the study. Student demographic data such as gender, ethnicity, and socioeconomic status, was provided to the researcher from District A's Core Data Department. A computer technologist re-coded the archival data in order to protect student privacy. Student names were not provided.

Results from each SRI assessment identified for the study were retrieved from each student's READ 180 progress records, which are maintained by each school's respective READ 180 teacher. The district's middle school reading specialist collected the SRI assessment results for students identified in the study by contacting each READ 180 teacher at each middle school. Once all information was gathered, the reading

specialist merged the data into an Excel spreadsheet. The data was then given to the researcher for use in the study.

Archived MAP Communication Arts Test data was retrieved from District A's data warehouse for use in this research. Specifically, MAP scale scores for the 2009 and 2010 assessment periods were collected for each study participant. The MAP scale scores were provided to the researcher by a computer technologist in District A's Core Data Department. The data was provided in an Excel spreadsheet and sent electronically to the researcher. The MAP scale scores and SRI assessment results of study participants were combined into one spreadsheet by the researcher.

### **Data Analysis and Hypothesis Testing**

Quantitative research methods were used to examine the reading achievement, as measured by the SRI and the MAP Communication Arts Test, of sixth grade students to determine the effect of the READ 180 Reading Intervention Program. Data from an Excel spreadsheet was imported into IBM SPSS Statistics 20.0 Faculty Pack for Windows.

The following research questions, hypotheses, and hypothesis tests were used to guide the data analysis for this study:

Research question one: To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory?

Null hypothesis one: The READ 180 Reading Intervention Program has no effect on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory at the .05 level of significance.

A one sample *t* test was used to address research question one. The one-sample *t* test was used to compare the mean growth of the study sample with the known mean of the larger population as measured by the SRI (Steinberg, 2008). The *t* test was used to test against a null value of 70L, which is the expected growth of a typical sixth grade student in a school year (Scholastic, Inc., 2008). The calculation of growth scores is explained further in chapter four. The dependent variable was growth as measured by the SRI.

Research question two: To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test?

Null hypothesis two: The READ 180 Reading Intervention Program has no effect on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test at the .05 level of significance.

A *Z* test for two proportions was conducted to address research question two. The *Z* test for two proportions was selected to test for a difference between the proportion of students who met or exceeded their yearly growth target and the proportion of students who did not meet their yearly growth target between fifth and sixth grade. The yearly growth target was calculated for every student to determine if they were on track toward achieving proficiency on the MAP Communication Arts Test by the eighth grade. The yearly growth calculation was explained earlier in this chapter.

Research question three: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by gender?

Null hypothesis three: The effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory is not moderated by gender at the .05 level of significance.

A two-factor analysis of variance (ANOVA) was conducted to address research question three. The two categorical variables used to group the students' scores were test time (pre- and post-test) and gender (male and female). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for gender, and the two-way interaction effect (test time x gender). The interaction effect for test time by gender was used to address research question three. The dependent variable was student achievement as measured by the Scholastic Reading Inventory.

Research question four: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by gender?

Null hypothesis four: The effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured the Missouri Assessment Program's Sixth Grade Communication Arts Test is not moderated by gender at the .05 level of significance.

A second two-factor analysis of variance (ANOVA) was conducted to address research question four. The two categorical variables used to group the students' scores



was test time (pre- and post-test) and gender (male and female). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for gender, and the two-way interaction effect (test time x gender). The interaction effect for test time by gender was used to address research question four. The dependent variable was student achievement as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test.

Research question five: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by socioeconomic status?

Null hypothesis five: The effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured the Scholastic Reading Inventory is not moderated by socioeconomic status at the .05 level of significance.

A third two-factor analysis of variance (ANOVA) was conducted to address research question five. The two categorical variables used to group the students' scores was test time (pre- and post-test) and socioeconomic status (free and reduced lunch and non-free and reduced). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for socioeconomic status, and the two-way interaction effect (test time x socioeconomic status). The interaction effect for test time by socioeconomic status was used to address research question five. The dependent variable was student achievement as measured by the Scholastic Reading Inventory.

Research question six: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as

measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by socioeconomic status?

Null hypothesis six: The effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test is not moderated by socioeconomic status at the .05 level of significance.

A fourth two-factor analysis of variance (ANOVA) was conducted to address research question six. The two categorical variables used to group the students' scores was test time (pre- and post-test) and socioeconomic status (free and reduced lunch and non-free and reduced lunch). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for socioeconomic status, and the two-way interaction effect (test time x socioeconomic status). The interaction effect for test time by socioeconomic status was used to address research question six. The dependent variable was student achievement as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test.

Research question seven: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by minority status?

Null hypothesis seven: The effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Scholastic Reading Inventory is not moderated by minority status at the .05 level of significance.

A fifth two-factor analysis of variance (ANOVA) was conducted to address research question seven. The two categorical variables used to group the students' scores was test time (pre- and post-test) and minority status (minority and non-minority). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for minority status, and the two-way interaction effect (test time x minority status). The interaction effect for test time by minority status was used to address research question seven. The dependent variable was student achievement as measured by the Scholastic Reading Inventory.

Research question eight: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by minority status?

Null hypothesis eight: The effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test is not moderated by minority status at the .05 level of significance.

A sixth two-factor analysis of variance (ANOVA) was conducted to address research question eight. The two categorical variables used to group the students' scores was test time (pre- and post-test) and minority status (minority and non-minority). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for minority status, and the two-way interaction effect (test time x minority status). The interaction effect for test time by minority status was used to address

research question eight. The dependent variable was student achievement as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test.

Research question nine: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by length of time in the program?

Null hypothesis nine: There is no difference based upon length of time in the program in the effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Scholastic Reading Inventory at the .05 level of significance.

A seventh two-factor analysis of variance (ANOVA) was conducted to address research question nine. The two categorical variables used to group the students' scores was test time (pre- and post-test) and length of time in the program (one semester and two semesters). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for length of time in the program, and the two-way interaction effect (test time x length of time in the program). The interaction effect for test time by length of time in the program was used to address research question nine. The dependent variable was student achievement as measured by the Scholastic Reading Inventory.

Research question ten: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by the length of time in the program?

Null hypothesis ten: There is no difference based upon length of time in the program in the effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test at the .05 level of significance.

An eighth two-factor analysis of variance (ANOVA) was conducted to address research question ten. The two categorical variables used to group the students' scores was test time (pre- and post-test) and length of time in the program (one semester and two semesters). The two-factor ANOVA can be used to test three hypotheses: the main effect for test time, the main effect for length of time in the program, and the two-way interaction effect (test time x length of time in the program). The interaction effect for test time by length of time in the program was used to address research question ten. The dependent variable was student achievement as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test.

### **Limitations**

Limitations are particular features of a study that may negatively affect the results and the ability to generalize (Roberts, 2004). Limitations are described by Lunenburg and Irby (2008) as factors not under the control of the researcher. The accuracy of records and the measurability of the MAP Communication Arts Test and SRI are factors that are out of the control of the researcher. An additional limitation is the varying teaching abilities of the READ 180 Reading Intervention Program teachers. Although every teacher received training on program implementation, the individual skills and

experience of each teacher may have influenced the impact of the program on the overall reading achievement of students.

### **Summary**

The purpose of this chapter was to present the various components of the study's methodology. The research design, population and sample, sampling procedures, instrumentation, data collection and analysis, hypothesis testing, and limitations were discussed in detail. Chapter four presents the findings based on each of the research questions of the study.

## **Chapter Four**

### **Results**

The purpose of this research was to analyze the level of reading improvement of sixth grade students on the SRI and MAP Communication Arts Test after participation in the READ 180 Reading Intervention Program for one or two semesters. The research further determined whether selected demographics (i.e. gender, minority status, and socioeconomic status) significantly impacted the reading improvement of students in the READ 180 Reading Intervention Program. Chapter four presents the results of the data analysis for Middle School 1, Middle School 2, and Middle School 3 from District A during the 2009-10 school year. Descriptive statistics were used in the study. A one-sample *t* test, a *Z* test for 2 proportions, and multiple ANOVAs were utilized to test the research hypotheses of the study.

#### **Descriptive Statistics**

The population for the study was sixth grade students in District A. The sample was eighty-five students who were enrolled in the READ 180 Reading Intervention Program during the 2009-2010 school year. The students were enrolled at one of the district's three middle schools: Middle School 1, Middle School 2, and Middle School 3. The IBM SPSS Statistics 20.0 Faculty Pack for Windows was used to analyze the data for the current study. Seventy of the students were enrolled in the program for the entire school year which consists of two semesters. Fifteen of the students exited the program after the first semester due to demonstrating sufficient reading growth. The sample included 33 female and 52 male students, 61 minority and 24 non-minority students, and

59 students who qualified for free or reduced lunch and 26 students who did not qualify for free or reduced lunch.

Whereas, the descriptive statistics give specific information about the study sample, the following section identifies the results of the ten hypotheses developed to guide the research related to the variables of the study.

### **Hypothesis Testing**

The results of the hypothesis testing in relation to the ten research questions presented in the study are discussed in this section. Each research question is provided, followed by the hypothesis for the research question. The method used to test each hypothesis is described along with the results of each test.

Research question one: To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory?

Null hypothesis one: The READ 180 Reading Intervention Program has no effect on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory at the .05 level of significance.

A one sample  $t$  test was used to address null hypothesis one. The dependent variable was growth as measured by the Scholastic Reading Inventory. Growth scores were calculated by subtracting the September 2009 from the May 2010 Lexile scores of students participating in READ 180. The scores were then compared to the 70L students participating in READ are expected to grow in a year according to Scholastic, Inc. (2008). Null hypothesis one was rejected because the results of the  $t$  test provided evidence that students enrolled in READ 180 experienced growth that was significantly



higher than 70L as measured by the SRI ( $t = 8.398$ ,  $df = 80$ ,  $p = .000$ ). Table 8 includes the results of the  $t$  test, including sample size, mean, and standard deviation (SD).

Table 8

*Reading Growth for READ 180 Students*

Measure	N	Mean	SD
SRI Growth	81	177.2963	114.98494

Research question two: To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test?

Null hypothesis two: The READ 180 Reading Intervention Program has no effect on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's 6<sup>th</sup> Grade Communication Arts Test at the .05 level of significance.

A Z test for 2 proportions was conducted to address null hypothesis two. The dependent variable was the proportion of students who met or exceeded their yearly growth target toward proficiency on the Missouri Assessment Program's Communication Arts Test between 5<sup>th</sup> and 6<sup>th</sup> grade (CTB McGraw-Hill, 2009). A yearly growth target was calculated for each student in the sample to determine the yearly growth required to achieve at or above the proficiency level on the MAP Communication Arts Test by eighth grade. In 2011, the proficiency target for the 8th Grade MAP Communication Arts Test required a scale score of 696 or higher. The 5<sup>th</sup> grade MAP Communication Arts Test scale score for each student was subtracted from the 8<sup>th</sup> grade proficiency target. The

results were then divided by three, which was the number of years students had until they reached eighth grade. The result provided a yearly growth target for each student. The students' yearly growth targets were compared to the change in their MAP Communication Arts scale score from 5<sup>th</sup> to 6<sup>th</sup> grade. The proportion of students who met or exceeded their yearly growth target was compared to the proportion of student who did not meet their yearly growth target. The *Z* test for 2 proportions indicated a statistically significant difference between the proportions ( $Z = -8.98, p = .000$ ). However, the proportion of students who met or exceeded their yearly growth target (0.133) was significantly lower than the proportion of students who did not meet their yearly growth target (0.867). The results of the *Z* test for 2 proportions do not provide evidence that READ 180 had a positive effect on the achievement growth for a large proportion of students participating in the program.

Research question three: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by gender?

Null hypothesis three: The effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory is not moderated by gender at the .05 level of significance.

A two-factor (test time x gender) ANOVA was conducted to address null hypothesis three. The results of the test of the interaction effect between test time and gender did not provide evidence of a significant difference in growth between male and female students participating in READ 180 ( $F = .019, df = 1, p = .890$ ). Table 9 includes the results of the first ANOVA.

Table 9

*Reading Growth for READ 180 Students by Gender (SRI)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	1	1211759.766	181.054	.000
Test Time x Gender	1	128.310	.019	.890
Error	79	6692.824		

Research question four: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by gender?

Null hypothesis four: The effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test is not moderated by gender at the .05 level of significance.

Table 10

*Reading Growth for READ 180 Students by Gender (MAP)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	1	942.400	1.754	.190
Test Time x Gender	1	315.874	.588	.446
Error	74	537.427		

A second two-factor (test time x gender) ANOVA was conducted to address null hypotheses four. The results of the test of the interaction effect between test time and gender did not provide evidence of a significant difference in growth between male and female students participating in READ 180 ( $F = .588, df = 1, p = .446$ ). Table 10 includes the results of the second ANOVA.

Research question five: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by socio-economic status?

Null hypothesis five: The effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured the Scholastic Reading Inventory is not moderated by socio-economic status at the .05 level of significance.

Table 11

*Reading Growth for READ 180 Students by Socio-economic Status (SRI)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	1	615140.421	92.170	.000
Test Time x Socio-economic Status	2	4144.319	.621	.540
Error	78	6674.010		

A third two-factor (test time x socio-economic status) ANOVA was conducted to address null hypothesis five. The results of the test of the interaction effect between test time and socio-economic status did not provide evidence of a significant difference in growth between students participating in READ 180 who qualify for free and reduced

lunch and students who do not qualify for free and reduced lunch ( $F = .621, df = 2, p = .540$ ). Table 11 includes the results of the third ANOVA.

Research question six: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by socio-economic status?

Null hypothesis six: The effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test is not moderated by socio-economic status at the .05 level of significance.

A fourth two-factor (test time x socio-economic status) ANOVA was conducted to address null hypothesis six. The results of the test of the interaction effect between test time and socio-economic status does not provide evidence of a significant difference in growth between students participating in READ 180 who qualify for free and reduced lunch and students who do not qualify for free and reduced lunch ( $F = 1.616, df = 2, p = .206$ ). Table 12 includes the results of the fourth ANOVA.

Table 12

*Reading Growth for READ 180 Students by Socio-economic Status (MAP)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	1	210.978	.401	.528
Test Time x Socio-economic Status	2	849.671	1.616	.206
Error	73	525.837		

Research question seven: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by minority status?

Null hypothesis seven: The effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Scholastic Reading Inventory is not moderated by minority status at the .05 level of significance.

A fifth two-factor (test time x minority status) ANOVA was conducted to address null hypothesis seven. The results of the test of the interaction effect between test time and minority status provides evidence for a significant difference in growth between minority students participating in READ 180 and students who were non-minority ( $F = 8.303$ ,  $df = 1$ ,  $p = .005$ ). Table 13 includes the results of the fifth ANOVA.

Table 13

*Reading Growth for READ 180 Students by Minority Status (SRI)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	1	1272917.714	210.130	.000
Test Time x Minority Status	1	50297.714	8.303	.005
Error	79	6057.769		

A follow-up Tukey's HSD provided evidence that minority students participating in READ 180 experienced significant growth (153.75). Non-minority students participating in READ 180 also experienced significant growth (230.04). The SRI scores of minority students participating in READ 180 and non-minority students participating

in the program were not significantly different in August 2009. However, the SRI scores of minority students participating in READ 180 and non-minority students participating in the program were significantly different (64.62) in May 2010. Non-minority students participating in READ 180 had greater growth than minority students participating in the program. Table 14 contains data related to the two test times including the means, standard deviations, and sample sizes for minority and non-minority students participating in READ 180. This provides evidence to reject null hypothesis seven.

Table 14

*Tukey's HSD Reading Growth by Minority Status (SRI)*

SRI Administration	Status	<i>M</i>	<i>SD</i>	N
August 2009	Minority	502.7857	158.89158	56
	Non-minority	491.1200	155.63240	25
May 2010	Minority	656.5357	175.09779	56
	Non-minority	721.1600	175.15819	25

Research question eight: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by minority status?

Null hypothesis eight: The effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Missouri Assessment Program's Sixth Grade

Communication Arts Test is not moderated by minority status at the .05 level of significance.

A sixth two-factor (test time x minority status) ANOVA was conducted to address null hypothesis eight. The results of the test of the interaction effect between test time and minority status does not provide evidence of a significant difference in growth between minority students participating in READ 180 and non-minority students participating in the program ( $F = .025$ ,  $df = 1$ ,  $p = .876$ ). Table 15 includes the results of the sixth ANOVA.

Table 15

*Reading Growth for READ 180 Students by Minority Status (MAP)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	1	720.707	1.331	.252
Test Time x Minority Status	1	13.339	.025	.876
Error	74	541.515		

Research question nine: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by length of time in the program?

Null hypothesis nine: There is no difference based upon length of time in the program in the effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Scholastic Reading Inventory at the .05 level of significance.



A seventh two-factor (test time x length of time in the program) ANOVA was conducted to address null hypothesis nine. The results of the test of the interaction effect between test time and length of time in the program provides evidence of a marginally significant difference in growth between students participating in READ 180 for one semester and students who participate in the program for two semesters ( $F = 2.758$ ,  $df = 2$ ,  $p = .066$ ). Table 16 includes the results of the seventh ANOVA.

Table 16

*Reading Growth for READ 180 Students by Length of Time in the Program (SRI)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	2	385940.636	77.576	.000
Test Time x Length of time in the program	2	13721.574	2.758	.066
Error	158	4974.972		

Research question ten: To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by the length of time in the program?

Null hypothesis ten: There is no difference based upon length of time in the program in the effect of the READ 180 Reading Intervention Program on sixth grade middle school students participating in the READ 180 Reading Intervention Program as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test at the .05 level of significance.

An eighth two-factor (test time x length of time in the program) ANOVA was conducted to address null hypothesis ten. The results of the test of the interaction effect between test time and length of time in the program does not provide evidence of a significant difference in growth between students participating in READ 180 for one semester and students who participate in the program for two semesters ( $F = .570$ ,  $df = 1$ ,  $p = .453$ ). Table 17 includes the results of the eighth ANOVA.

Table 17

*Reading Growth for READ 180 Students by Length of Time in the Program (MAP)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Test Time	1	1068.278	1.987	.163
Test Time x Length of time in the program	1	306.199	.570	.453
Error	74	537.558		

### Summary

This chapter utilized descriptive statistics to describe the size, gender, socio-economic status, minority status, and the length of time in READ 180, for the study sample. The results of the current study's hypothesis testing were also presented in this chapter. The results of a one sample *t* test provided evidence of significant growth for students participating in the READ 180 Reading Intervention Program as measured by the SRI. The results of a two-factor ANOVA provided evidence for a significant difference in growth between minority students participating in READ 180 and students who were non-minority. A second two-factor ANOVA provided evidence of a marginally significant difference in growth between students participating in READ 180

for one semester and students who participate in the program for two semesters. Chapter five describes the findings related to the literature, implications for action, conclusions, and recommendations for future research.

## **Chapter Five**

### **Interpretation and Recommendations**

Adolescents who struggle with reading need effective intervention programs to help them improve their reading skills. School districts, such as District A, have used the READ 180 Reading Intervention Program to support struggling readers at the middle school level. Evaluation is imperative to determine whether reading intervention programs, such as READ 180, increase students' reading skills resulting in increased student achievement. Chapter one of this study presented the purpose, conceptual framework, background and significance of the study. A review of the related literature regarding reading instruction and interventions was provided in chapter two. Chapter three identified the research design, methodology, instrumentation, data collection methods, and statistical analysis procedures of the study. An analysis of the data collected during the study and the related findings were discussed in chapter four. This chapter includes a summary of the study by providing an overview of the problem, the purpose statement, research questions, methodology, major findings and findings related to the literature. Recommendations for future research and concluding remarks bring the chapter to a close.

#### **Study Summary**

The study was conducted in a suburban school district (District A) located southwest of Kansas City, Missouri. The study sample was comprised of sixth grade students in District A participating in the READ 180 Reading Intervention Program during the 2009 – 10 school year. The primary purpose of the study was to analyze the level of reading growth students experienced after participation in the READ 180 Reading Intervention Program. The second purpose was to determine whether selected

demographics (i.e. gender, minority status, socioeconomic status, and length of time students were in the program) significantly impacted the reading improvement of students in the READ 180 Reading Intervention Program.

The results of the study provided evidence that students enrolled in READ 180 experienced significant growth as measured by the SRI. The growth of minority students participating in READ 180 was significantly lower than non-minority students. There was a marginal significance in the difference of growth for students enrolled for one semester in READ 180 as compared to students who participated for two semesters. The results did not provide evidence that READ 180 had a positive effect on the yearly growth of students participating in the program as measured by the 6<sup>th</sup> Grade MAP Communication Arts Test. The effect of READ 180 was not moderated by gender or socio-economic status.

### **Overview of the Problem.**

As a result of NCLB, greater emphasis has been placed on the academic achievement of all students. Providing support for students who struggle with reading has become a focus of school districts across the country. Multiple reading interventions have been developed and used to help struggling readers improve academically. One program, READ 180, is commonly used to support struggling readers. District A, a suburban school district southeast of Kansas City, Missouri, implemented the READ 180 Reading Intervention Program at the middle school level during the 2009 – 10 school year. Research regarding the effectiveness of the READ 180 Reading Intervention Program exists; however, the research is often conducted by those affiliated with the program's publisher, Scholastic, Inc. In addition, little research exists regarding READ

180's effect on the achievement of students on the MAP Communication Arts Test, the standardized assessment tool used by the state of Missouri to measure compliance with NCLB standards.

**Purpose Statement and Research Questions.**

The primary purpose of this study was to analyze the level of reading improvement of sixth grade students as measured by the SRI and MAP Communication Arts Test after participation in the READ 180 Reading Intervention Program for one or two semesters. A secondary purpose was to determine whether selected demographics (i.e. gender, minority status, and socioeconomic status) significantly impacted the reading improvement of students in the READ 180 Reading Intervention Program.

The following research questions were used to guide the study.

1. To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory?
2. To what extent does the READ 180 Reading Intervention Program affect the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test?
3. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by gender?
4. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the

Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by gender?

5. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by socioeconomic status?
6. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by socio-economic status?
7. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by minority status?
8. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by minority status?
9. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Scholastic Reading Inventory moderated by length of time in the program?
10. To what extent is the effect of the READ 180 Reading Intervention Program on the achievement of sixth grade middle school students as measured by the Missouri Assessment Program's Sixth Grade Communication Arts Test moderated by the length of time in the program?

### **Review of the Methodology.**

This quantitative research study involved three middle schools in District A. The researcher utilized student data from sixth grade students enrolled in the READ 180 Reading Intervention Program during the 2009 – 10 school year. There were two dependent variables in the study. The first dependent variable was growth, as measured by the Scholastic Reading Inventory (SRI). The second dependent variable was growth as measured by the Missouri Assessment Program's (MAP) Sixth Grade Communication Arts Test. The independent variables in the study were the number of semesters enrolled in the READ 180 Reading Intervention Program, gender, ethnicity, and socioeconomic status. A one-sample *t* test, a *Z* test for 2 proportions, and multiple ANOVAs were utilized to determine the effect of the READ 180 Reading Intervention Program on the achievement of students participating in the program.

### **Major Findings.**

Findings were mixed based on the assessment tool used to measure student growth. Students enrolled in READ 180 experienced significant growth as measured by the SRI. The mean growth of students enrolled in the program was higher than the annual growth of students not enrolled in READ 180 are expected to experience annually.

The yearly growth of students enrolled in READ 180 as measured by the MAP Communication Arts Test was also investigated by the researcher. Yearly growth was measured by utilizing data from the MAP Communication Arts Test. Students either met or exceeded their yearly growth target or did not meet their yearly growth target. The results of the data analysis do not provide evidence that READ 180 made a positive effect on the yearly growth of students in the program. The proportion of students who met or



exceeded their yearly growth target was significantly lower than the proportion of students who did not meet their yearly growth target.

The test of the interaction effect for test time and the independent variables in the study were examined. The data analysis for the test of the interaction effects for test time and gender did not indicate a significant difference in the growth of male and female students enrolled in READ 180. The results for the test of the interaction effects for test time and socio-economic status were not significant among students who qualified for free and reduced lunch and students who did not qualify for free and reduced lunch.

The test of the interaction effect for test time and minority status revealed a significant difference in growth between minority students and non-minority students participating in READ 180. The SRI scores of minority students and non-minority students were not significantly different in August 2009. The SRI scores of minority students and non-minority students were significantly different when measured in May 2010. The results indicate that non-minority students had greater growth than minority students. In contrast, the 6<sup>th</sup> Grade MAP Communication Arts Test scores of minority students enrolled in READ 180 were not significantly different than non-minority students participating in the program.

A difference in growth as measured by the SRI was found between students participating in READ 180 for one semester and students who participated in the program for two semesters, but the difference was not statistically significant. Students enrolled in READ 180 for one semester experienced more growth than students participating in the program for two semesters. The test of the interaction effect between test time and length of time in the program did not provide evidence of a significant difference in the growth

of students enrolled in READ 180 for one semester and students who participated in the program for two semesters as measured by the 6<sup>th</sup> Grade MAP Communication Arts Test.

### **Findings Related to the Literature**

When connecting the findings of the current study with those reviewed in chapter two some similarities and differences were identified. The findings related to the literature are described in the same order as the research questions and hypothesis testing results were presented in chapter four.

The results of the study have provided evidence that students enrolled in READ 180 experienced significant growth as measured by the SRI. This indicates that enrollment in READ 180 helped study participants to increase their reading skills more than 70L, which is beyond what is expected of students not participating in the program. These results are consistent with Pearson and White's (2004) findings, which indicated that students participating in READ 180 improved their SRI scores by an average of 97L after one year in the program. Also in agreement with the current study were the results of Admon's (2005) study which found that students participating in READ 180 performed significantly better on the SRI after READ 180 instruction.

The results of the current study did not provide evidence that READ 180 had a positive effect on the yearly growth of students participating in the program as measured by the 6<sup>th</sup> Grade MAP Communication Arts Test. This indicates that participation in READ 180 does not result in increased achievement on state-wide standardized tests. These results contrast with the findings of Haslam, White, and Klinge's (2006) study, which found that participation in READ 180 resulted in higher standardized test scores.

Nave (2007) also noted an increase in the achievement of READ 180 students on standardized tests.

The test of the interaction effects for test time and gender did not provide evidence of a significant difference in the growth of male and female students enrolled in READ 180 as measured by SRI and the 6<sup>th</sup> Grade Communication Arts Test. This finding indicates that gender does not affect the reading growth of students participating in the program. The growth of female participants in the study was not significantly different than male participants. The results contradict Purves' (1992) claim that gender was the best predictor of academic performance.

The results of the current study do not indicate that socio-economic status has an effect on the growth of students participating in READ 180 as measured by SRI and the 6<sup>th</sup> Grade MAP Communication Arts Test. The test of the interaction effects for test time and socio-economic status were not significant among students who qualified for free and reduced lunch and students who did not qualify for free and reduced lunch. The results contrast with the findings of McCall, et al. (2006). The researchers found that students in high poverty consistently underperformed academically when compared with students living in low poverty.

A significant difference in growth between minority students and non-minority students participating in READ 180 was found as a result of the study. The growth of minority students participating in READ 180 was significantly different than non-minority students as measured by the SRI in May 2010. The 6<sup>th</sup> Grade MAP Communication Arts Test scores of minority students enrolled in READ 180 were not significantly different than non-minority students participating in the program. While the

current study provides evidence that non-minority students participating in READ 180 are able to make significantly more growth on the SRI than minority students, the program did not significantly affect the standardized test scores of either group of students. The results confirm the achievement gap between minority students and non-minority students found by Grigg, et al. (2003).

The results of the study provided evidence that students enrolled for one semester in READ 180 experienced more growth than those who participated for two semesters, but the difference was not statistically significant. The study found no difference in the standardized test scores of students who participated in READ 180 one semester in comparison to students who participated in the program two semesters. The review of professional literature did not produce comparable studies regarding the effect of READ 180 on students who participated in the program for less than two semesters.

## **Conclusions**

### **Implications for Action.**

As discussed in chapter one, school districts are challenged when selecting reading intervention programs that will have a positive effect on student achievement. The READ 180 Reading Intervention Program is commonly used in districts across the U.S. to support struggling readers. School systems searching for interventions that will provide accelerated reading growth for students who are not reading proficiently have some evidence regarding READ 180's effect on reading growth. The findings of this study and related literature indicate that students participating in READ 180 experienced significant reading growth as measured by the SRI. In addition, the study provided evidence that the effect of READ 180 on reading growth is not moderated by gender or

socio-economic status. Therefore, READ 180 can be used to support male and female students who are struggling with reading regardless of their free and reduced lunch status. School systems should be cautious when attempting to use READ 180 to close the achievement gap between minority and non-minority students. The results of the current study provide evidence that non-minority students participating in READ 180 show greater reading growth than minority students in the program.

Chapter two described the requirements of NCLB and the accountability school systems have regarding the increased student achievement of all students. NCLB standards are measured by the results of state-wide standardized assessments which vary from state to state. School systems searching for reading interventions that will help struggling readers improve their student achievement on standardized tests do not have clear evidence that READ 180 will help improve student scores. The results did not provide evidence that READ 180 had a positive effect on the 6<sup>th</sup> Grade MAP Communication Arts Test used by the state of Missouri to track NCLB compliance. However, the review of related literature provided evidence of the positive impact of the program on standardized tests in other states.

### **Recommendations for Future Research.**

Several recommendations have been developed to help further analyze the effect of READ 180 on the reading proficiency of struggling readers. The first recommendation is to use a longitudinal design to expand the length of the study. The future study should follow the same cohort of students for three years to examine the effect of participation in READ 180 on the student's 8<sup>th</sup> Grade MAP Communication Arts Test. The second recommendation is to add a qualitative component to the current study. A researcher

could use qualitative research to determine the effect of READ 180 on the students' self-confidence and feelings toward school. A qualitative approach would also document teachers' perspectives regarding the effect of the program on overall reading achievement. The third recommendation would be to expand the study to include additional districts that are also using the READ 180 Reading Intervention Program at the middle school level. Including more school districts would help to expand the generalizability of the study. The effect of the degree of implementation of READ 180 could also be examined by including additional school districts in the study.

A priority for future research related to READ 180 should be to examine the program's effect on student achievement as measured by state-wide standardized assessments such as the MAP Communication Arts Test. School systems need clear evidence that demonstrates the effect of READ 180 on the student achievement measures identified to meet the requirements of NCLB. A meta-analysis of studies from across the U.S. should be conducted to determine the effect of READ 180 on student achievement as measured by various state-wide standardized assessments.

### **Concluding Remarks**

The study examined the effect of the READ 180 Reading Intervention Program on the reading growth of students participating in the program as measured by the SRI and 6<sup>th</sup> Grade MAP Communication Arts Test. Data was also analyzed to determine whether gender, minority status, socio-economic status, and length of time in the program had a significant impact on the reading achievement of students participating in READ 180. Study results provided evidence that students participating in READ 180 significantly improved their SRI scores, but not their 6<sup>th</sup> Grade MAP Communication

Arts Test scores. Data analysis also provided evidence that the effect of READ 180 was not moderated by gender or socio-economic status. Non-minority students participating in READ 180 showed significantly more growth on the SRI than minority students participating in the program. In addition, students participating in READ 180 for one semester showed slightly more growth on the SRI than students participating in the program for two semesters.

The ability to read proficiently is a skill that every student deserves to obtain before completing their K-12 school experience. Unfortunately, the reading ability of students across the U.S. remains a concern. The number of students without the skills to read proficiently continues to increase. The challenge of supporting the growing population of struggling readers becomes more difficult as these students transition from primary to secondary school. School systems, such as District A, must continue to identify interventions that will help secondary students to improve their reading skills and academic achievement. The interventions should be carefully selected and closely scrutinized to ensure that they are having the desired effect on the reading ability of students. The identification of effective reading interventions is crucial for school districts, not only to meet the requirements of NCLB, but to complete the core mission of all education systems, which is to prepare students for success in life.

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## Appendices



**Appendix A: Approval to Conduct Research**

**Dred Scott**

**From:** [REDACTED]@schools.org]  
**Sent:** Monday, May 16, 2011 1:04 PM  
**To:** Dred Scott  
**Cc:** [REDACTED]  
**Subject:** RE: Follow-up

Hello, Dred! You have my permission to connect with [REDACTED], MOSIS coordinator along with [REDACTED], Core Data, to get the information you need. Also, please feel free to continue to connect with [REDACTED] as needed. I have included them in this email so that they are aware of our working relationship and my permissions. It is understood that we will use MOSIS ID numbers and not student names for this information due to privacy. I also ask that you provide us with the synopsis (or a copy of your data review section of your dissertation) of your findings as we are making and have made critical decisions about READ 180 district wide. This is excellent timing for our district and we will use this information in making key decisions for our students. Thanks again and let me know if there is anything else I can do to assist. [REDACTED]

**From:** Dred Scott [mailto:dred\_scott@indep.k12.mo.us]  
**Sent:** Monday, May 16, 2011 12:38 PM  
**To:** [REDACTED]  
**Subject:** Follow-up

Good Morning [REDACTED],

Thank you for calling me last week. I appreciate your straight-forward approach and honest opinion. I wanted to follow-up with you regarding the data I am seeking in relation to my research. To remind you, I am conducting a case study of sixth grade students participating in the READ 180 program. I would like to have access to data related to their reading achievement as measured by the SRI and MAP Communication Arts Test. I am respectfully requesting access to the following:

- ? Basic demographic information for sixth grade students who participated in READ 180 during the 2009-10 school year (i.e. race, sex, and FRL status)
- ? SRI scores from Fall, Winter, and Spring for the same student group from 2009-10 school year
- ? MAP Communication Arts scores for same student group from spring 2009 (when they were fifth graders) and spring 2010 (scores as sixth graders), specifically,
  - o Terra Nova NP scores
  - o Terra Nova Scale scores

I appreciate your help. If it is okay with you, I am willing to speak to the person(s) who work with Core Data in your district to discuss the data in detail. Of course, I will work to keep all student information confidential. In fact, other than identifying the students participating in the program to create the experimental group for the case study, I do not need student names or MOSIS ID numbers.

Please let me know how I should proceed. I am ready to complete Chapter Four and get finished with my dissertation, finally!

Thanks again,  
 -Dred

This correspondence and any attachments are for the sole use of the intended recipient(s) and may contain confidential or privileged information. If you are not the intended recipient or a person responsible for delivering this message to the intended recipient(s), please contact the sender and destroy all copies of the original message.

**Appendix B: IRB Form**

SCHOOL OF EDUCATION  
GRADUATE DEPARTMENT



Date: \_\_\_\_\_  
IRB PROTOCOL NUMBER \_\_\_\_\_  
(IRB USE ONLY)

IRB REQUEST  
**Proposal for Research**  
Submitted to the Baker University Institutional Review Board

**I. Research Investigator(s) Dr. Dennis King and Dred Scott**

**Department(s) School of Education Graduate Department**

Name	Signature	
1. Dr. Dennis King	<u><i>Dennis King</i></u>	Major Advisor
2. Margaret Waterman	<u><i>Margaret Waterman</i></u>	Research Analyst
3. Dr. Ann Sanders	_____	University Committee Member
4. Dr. Henry Russell		External Committee Member

Principal Investigator: Dred Scott  
Phone: 816-896-0124  
Email: dred\_scott@indep.K12.mo.us  
Mailing address: 3305 South Seminole Court, Independence, MO 64057

Faculty sponsor: Dr. Dennis King  
Phone: 913.491.4432  
Email: dking@bakeru.edu  
Expected Category of Review:  Exempt  Expedited  Full

**II: Protocol Title: The Effect of the READ 180 Reading Intervention Program On the Reading Proficiency of Sixth Grade Students**

**Summary**

**In a sentence or two, please describe the background and purpose of the research.**

The Raytown C-2 School District is located in Raytown, Missouri, a suburban community which borders the southeast side of Kansas City, Missouri, the second largest metropolitan area in the state. The READ 180 Reading Intervention Program is a district approved program utilized with students at the elementary, middle, and secondary level.

The purpose of the study is to examine the effect of the READ 180 Reading Intervention Program on the reading ability and achievement of sixth grade students in the Raytown C-2 School District who are reading two or more years below grade level. The central theme of the study is to determine if the length of time students participate in the READ 180 Reading Intervention Program has an effect on their achievement as measured by the Scholastic Reading Inventory (SRI) and the Missouri Assessment Program's (MAP) Communication Arts Test. Multiple one-sample *t* tests and multiple ANOVA's (Analysis of Variance) will be used to determine the effect of the READ 180 Reading Intervention Program on the achievement of students participating in the program. The independent variables in the study are length of time students participated in the READ 180 Reading Intervention Program (one semester or two semesters), gender, ethnicity, and socio-economic status.

**Briefly describe each condition or manipulation to be included within the study.**

There are no manipulations or conditions in the study; however Read 180 participants' reading achievement scores as measured by the SRI and MAP Communication Arts Test will be analyzed.

**What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.**

**Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.**

Participants' SRI scores from three benchmarking periods occurring during the 2010-2011 school year will be used to measure students' reading proficiency growth over the course of the academic year. In addition, participants' scores on the MAP Sixth Grade Communication Arts Test from spring of 2011 will be compared with their scores on the MAP Fifth Grade Communication Arts Test taken in the spring of 2010. The subjects in the study will not encounter any psychological, social, physical, or legal risks.

**Will any stress to subjects be involved? If so, please describe.**

No stress is perceived to be involved with the subjects of this study. Student identities will not be provided to the researcher in effort to keep identifiable information confidential.

**Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.**

It is not the intent to deceive or mislead the participants of this study in any way, therefore debriefing is unnecessary.

**Will there be a request for information that subjects might consider to be personal or sensitive? If so, please include a description.**

The researcher will use archived SRI and MAP Communication Arts Test scores, but student names will not be published or used in any way for the study. The archived data will be gained with the permission of the Raytown C-2 School District.

**Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? If so, please describe.**

This study focuses on students' reading achievement. All materials used as part of the READ 180 Reading Intervention Program and related reading assessments have been approved by the Raytown C-2 School District for use with students. Therefore, the study is not considered threatening or degrading to the students.

**Approximately how much time will be demanded of each subject?**

No time is required for the subjects because archival data will be utilized for the study.

**Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.**

The subjects of the study consist of eighty-eight students from the Raytown C-2 School District. This target group is comprised of all 6<sup>th</sup> grade students participating in the district's READ 180 Reading Intervention Program during the 2010-11 school year. Subjects in the program were identified as reading at least two years below grade level at the end of their fifth grade year as measured by the SRI. Subjects will not be solicited or contacted for the study. Their reading achievement data is collected on a regular basis as part of the school district's annual assessment plan.

**What steps will be taken to ensure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?**

Study participants are enrolled in the district's READ 180 Reading Intervention Program due to their reading proficiency level. Their participation is a function of the district's reading intervention and support model. The READ 180 Reading Intervention Program is a voluntary program. Therefore, the use of inducements is unnecessary.

**How will you ensure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.**

Permission to collect archived SRI and MAP Communication Arts Test data will be obtained from the Raytown C-2 School District. Individual participant consent is unnecessary because student names will not be provided to the researcher. The data requested for the study is collected by the district on a regular basis as part of the annual assessment plan.

**Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.**

No aspect of the data will be made a part of a permanent record that will individually identify any subject participating in this study.

**Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.**

No information pertaining to a subject's participation, or lack thereof, will be made a part of any permanent record that will be available to a supervisor, teacher, or employer.

**What steps will be taken to ensure the confidentiality of the data?**

No names of subjects will be included in the study or any other identifying aspects that reveal the privacy of said subject.

**If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?**

No risks have been identified within the study pertaining to any offsetting benefits that might accrue to either the subjects or society.

**Will any data from files or archival data be used? If so, please describe.**

Yes. The researcher will use archived SRI and MAP Communication Arts Test scores from sixth grade students in the Raytown C-2 School District. Participants' SRI scores from three benchmarking periods occurring during the 2010-2011 school year will be used to measure students' reading proficiency growth over the course of the academic year. In addition, participants' scores on the MAP Sixth Grade Communication Arts Test from spring of 2011 will be compared with their scores on the MAP Fifth Grade Communication Arts Test taken in the spring of 2010.

## **Appendix C: IRB Approval**





March 5, 2012

Dred Scott  
3305 S. Seminole Ct.  
Independence, MO 64057

Dear Mr. Scott:

The Baker University IRB has reviewed your research project application (M-0130-0228-0305-G) and approved this project under Exempt Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

The Baker University IRB requires that your consent form must include the date of approval and expiration date (one year from today). Please be aware of the following:

1. At designated intervals (usually annually) until the project is completed, a Project Status Report must be returned to the IRB.
2. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
3. Notify the OIR about any new investigators not named in original application.
4. Any injury to a subject because of the research procedure must be reported to the IRB Chair or representative immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform Office of Institutional Research (OIR) or myself when this project is terminated. As noted above, you must also provide OIR with an annual status report and receive approval for maintaining your status. If your project receives funding which requests an annual update approval, you must request this from the IRB one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

Carolyn Doolittle, EdD  
Chair, Baker University IRB