THE IMPACT OF AFTERSCHOOL TUTORING ON READING ACHIEVEMENT OF ELEMENTARY STUDENTS IN A MISSISSIPPI RURAL SCHOOL SETTING

By

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A Dissertation
Submitted to the Faculty of Mississippi State University in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Curriculum and Instruction in the Department of Curriculum, Instruction, and Special Education

Mississippi State, Mississippi

April 2011
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The purpose of this study was to determine what impact a No Child Left Behind (NCLB)-related afterschool tutoring program had on reading achievement of elementary students in a Mississippi rural school setting. The research questions that guided this study were (1) Is there a significant difference between the 2008 and 2009 Mississippi Curriculum Test, 2nd Edition (MCT2) language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a Mississippi rural school setting? and (2) Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in a NCLB-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores? To address the research questions, a causal comparative research design was used. The researcher collected the state’s language arts scores of 2008 and 2009 for elementary students who participated in the afterschool tutoring program and performed a paired sample t-test to answer research question one. To answer research
question two, the researcher collected the state’s language arts scores of 2008 and 2009 for elementary students who participated in the afterschool tutoring program and for eligible students who did not participate in the afterschool tutoring program and performed a univariate analysis of variance.

The results of this study were twofold. The scores of the participants improved. Results of the paired sample t-test analysis indicated a significant difference in the scores between the 2008 and 2009 MCT2 language arts. On the other hand, results of the univariate analysis of variance indicated that there was no significant difference between the 2009 MCT2 language arts scores of participants and nonparticipants.

Recommendations for further research include conducting an experimental research design on afterschool tutoring and reading achievement in a rural school(s), analyzing parental involvement while conducting research on afterschool tutoring and reading achievement in rural schools, and observing and comparing a regular classroom setting while conducting research on afterschool tutoring and reading achievement in rural schools.

Key words: afterschool tutoring, supplemental educational services, student achievement, reading achievement
DEDICATION

I would like to dedicate this research to my parents, Sarah P. Sanders and Willie Sanders, my grandmother, the late Clemmie Doyle, and my children, Krislyn, Kierra, Kinani, and Kachren.
ACKNOWLEDGMENTS

First and foremost, I thank God, the Almighty for answering my prayers and for bestowing the many blessings on me during this doctoral program and dissertation process. Without Him, nothing is possible.

Many people have accompanied me on this tedious journey of completing my dissertation, and I want to express my gratitude to the following:

I thank my mother, Sarah Sanders, for her love, words of encouragement, and endless support. I thank my father, Willie Sanders, for his love, words of encouragement, and support. To my children, Krislyn, Kierra, Kinani, and Kachren, thank you for your patience, support, and love. I love you all so much.

I sincerely thank Dr. Debra Prince for assisting me during my most difficult times. I truly appreciate your assistance, expertise, and guidance. To Dr. Sue Minchew, thank you for being there for me during my personal and professional times. Thank you for all your support and advice. I thank Dr. Richard Wolf for his expertise, his words of encouragement, and his time. I thank Dr. Burnette Hamil for sticking up for me. I appreciate the second chance. Thank you, Dr. Linda Coats, for your assistance and for being a role model. Heartfelt gratitude is due to all my committee members.

I have to thank Merrion for being there for me through it all. You are the best. I cannot thank you enough.
Other family members who have helped me tremendously are Uncle John and Aunt Debra, Mary and Joneice, brothers Will and Tony, sister-n-law Anitra, Alice, Maria, and Lois. I thank my church family, especially Charles and Glenda, Fred, Martilla, Martha, and Gladys, for the support. I appreciate my neighbors and family, the Rias and the Herndons.

Finally, I thank my Leflore County Elementary School family, especially Ms. Johnson, Mrs. Barnes, Mr. Palmer, Ms. Mattie, Mr. Grider, Mrs. Collins, and Ms. Roy, for their support and words of encouragement. I am truly thankful and blessed to have all of you in my life.
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CHAPTER I

INTRODUCTION

Reading is one of the most important skills people must possess. Having reading skills is imperative to achieving in one’s personal and professional lives (Alfassi, 2004; Holloway, 1999; Howerton & Thomas, 2004). However, according to Toppo (2008) and Khadaroo (2009), millions of people in the United States (U. S.) have poor reading skills, and this is a major concern in the U. S.

Not only is the U. S. adult literacy rate a concern, but also the literacy rate of children is a growing concern. Marrs and Patrick (2002) stated, “The development of competent readers is a fundamental concern of our educational system” (p. 297).

According to the United States Department of Education (USDOE), Black and Hispanic students are not closing the achievement gap with White students (2007c). USDOE stated that there has been some improvement since 2004, but not enough to meet the No Child Left Behind act of 2001 (NCLB) goal of academic proficiency by 2014.

The NCLB was passed in 2001 and was signed into law by former President George W. Bush on January 8, 2002. This law aims to improve the performance of public school students by increasing the standards of accountability. Its goal for academic proficiency states that by 2014, every student in America will be proficient in reading and math, and achievement gaps will close between high-performing students and low-performing students, especially those in designated groups such as economically
disadvantaged students. According to Cavanagh and Hoff (2008), many people concerned about the future of American education believed the goal to be unattainable.

The Mississippi Student Achievement Improvement act of 1999 (MSAI) was reinforced by legislation to set accountability standards for public schools in Mississippi. It was required “to set annual performance standards for every Mississippi public school and to use student growth and performance measures to measure school performance” (Mississippi Department of Education, 2005, p. 3). Mississippi proposed to improve its students’ reading skills and to close the achievement gaps in its public schools. However, as indicated by the yearly results of the Nation’s Report Cards, the achievement gap is not closing as quickly as developers of the NCLB legislation thought that the gap would close (USDOE, 2007c).

In order to help U. S. students attain NCLB’s goal of academic proficiency, the NCLB provides funding for Supplemental Educational Services (SES). SES is a federal program that allows states to help schools provide assistance to students to improve academic achievement. According to Barley and Wegner (2010), “getting extra help to students who are failing is one way to approach the goal of having all children be proficient” (p. 10). SES includes tutoring, small group instruction, and computer-based instruction. Schools have implemented SES by providing in-school tutoring, after-school tutoring, and other scientifically based approaches for improving academic achievement (Burch, 2007).

However, questions arose about supplemental educational services’ efficacy during the re-authorization of the NCLB. According to Hoff (2007), in 2007 when Congress revisited the NCLB act of 2001 for re-authorization and many of its programs
were re-evaluated, tutoring became an issue of debate: some supporters, such as former U. S. Secretary of Education Spellings, expressed the view that the program provided students the extra help they needed. On the other hand, some thought that the program was a waste of time. Burch (2007), an assistant professor of educational policy studies at the University of Wisconsin-Madison, stated that there has not been enough data to support the effectiveness of tutoring on student achievement. Sunderman (2006) wrote, “Underlying supplemental services is the assumption that academic instruction provided outside the regular school day by public and private organizations will be able to do what schools cannot – raise the achievement of students in consistently poorly performing schools” (p. 117). Regardless of the views of proponents and opponents of tutoring, NCLB has mandated that tutoring become a formal means of improving academic achievement (Gut & Monell, 2008).

This study seeks to determine what impact a NCLB-related afterschool tutoring program has on the reading achievement of elementary students in a Mississippi rural school setting. This chapter defines annual assessments, adequate yearly progress, and SES. It also provides brief summaries of the 2007 nation’s reading proficiency level and 2007 Mississippi’s reading proficiency level. This chapter examines how SES is implemented in rural schools. Additionally, the chapter includes a statement of the problem, research questions, justification for the study, limitations of the study, and definition of terms. Chapter 2 provides a review of literature concerning afterschool tutoring and reading achievement. Chapter 3 explains the methodology used in this study. Chapter 4 discusses and illustrates the results, and Chapter 5 summarizes, concludes, and recommends further research.
The No Child Left Behind Act of 2001

The NCLB act of 2001 (2002) requires that all states have a state testing program and that all states make adequate yearly progress (AYP) toward the goal of academic proficiency. The law defines the type of tests that individual states must administer and the academic expectations for all students who attend public schools.

Annual Assessments

Progress towards the goal of every child in America reading at the proficiency level by 2014 is determined by the scores from the state tests. NCLB (2002) explains that each state must establish statewide annual measurable objectives to which the following requirements must apply:

(1) there must be separate assessments for mathematics and reading or language arts;

(2) the objectives must be the same for all schools and local educational agencies in the state;

(3) there must be identification of a single minimum percentage of students who are required to meet or exceed the proficient level on the academic assessments that applies separately to each subgroup;

(4) there must be a certainty that all students will meet or exceed the state’s proficient level of academic achievement on the state assessments within the state’s timeline; and

(5) the assessment may be the same for more than one year. (Pub. L. No. 107-110, Stat.1448)
States have to provide statistics from the annual assessment to determine whether or not the students are reaching the goal of academic proficiency. To track progress, the states must use the baseline provided from the NCLB act for “adequate yearly progress” (AYP).

**Adequate Yearly Progress**

The USDOE (2004) defines AYP as an individual state’s measure of progress toward the goal of 100% of students achieving the state academic standards in at least reading/language arts and math. The USDOE outlines the statistical baseline by which each state may accurately govern its AYP:

- Each state begins by setting a starting point that is based on the performance of its lowest-achieving demographic group or of the lowest-achieving school in the state, whichever is higher. The state then sets the level of student achievement that a school must attain in order to make AYP. Subsequent thresholds must increase at least once every three years, until, at the end of 12 years, all students in the state are achieving at proficient level on state assessments in reading and language arts, math, and science. (p. 26)

AYP sets the minimum level of proficiency that a state, its school districts, and its schools must achieve each year on annual tests.

**Mississippi Student Achievement Improvement Act of 1999**

*Annual Assessments*

To improve its accountability system, Mississippi developed assessments to determine whether its students mastered their grade-level content. The following components are included in the Mississippi Statewide Assessment System:
1) K-2 Assessment - informal, developmentally-appropriate diagnostic assessments that provide instructional decision-making information
- suggested that teachers administer as a test at set intervals throughout the year to monitor progress on a continual basis

2) Grade Level Testing Program (GLPT)
- Mississippi Curriculum Test in grades 3-8 reading, language arts, and mathematics
- Writing Assessments in grade 4 and 7
- Elementary and middle grade science in grades 5 and 8

3) Subject Area Testing Program (SATP)
- Algebra I, Biology I, U. S. History from 1877, English II with a writing component. (Mississippi Department of Education, 2005, p. 7)

The results from the GLTP and SATP provide the scores needed to determine the student’s growth and school’s performance. Mississippi uses the growth model and achievement model.

Mississippi’s Growth and Achievement Models

To comply with the No Child Left Behind’s definition of adequate yearly progress, Mississippi uses growth and achievement models. The Mississippi growth model is an estimate of current performance based on past performance. The Mississippi
achievement model includes a formula for the Quality of Distribution (QDI): $QDI = \%Basic + (2 \times \%Proficient) + (3 \times \%Advanced)$. Mississippi State Board of Education’s goal is for all students to be Proficient or Advanced. Additionally, to help keep track of the academic achievement of America’s students, the Nation’s Report Card provides results of their reading and math achievement levels (Mississippi Department of Education, 2005).

**The Nation’s Report Card**

The National Assessment of Educational Progress (NAEP) is an authorized project of the USDOE that measures students’ achievement of various subjects over time. It provides the public with the Nation’s Report Card, which reports the academic achievement of elementary and secondary students in the United States. Consequently, NAEP is an integral part of our nation’s evaluation of the condition of education and its progress (USDOE, 2007c).

NAEP selects students across the U. S. to represent all students. The USDOE (2007c) explains that “students who participate in NAEP play an important role by demonstrating the achievement of our nation’s students and representing the success of our schooling” (p. 6). These students are from public schools, private schools, Bureau of Indian Education schools, and Department of Defense schools. In 2007, USDOE reported that a nationally representative sample of more than 350,000 students in grade 4 took the NAEP reading assessment.

NAEP conducts assessments of the students in reading, math, science, writing, arts, civics, economics, geography, and U. S. history. To examine the reading achievement of elementary students in the nation, NAEP assesses students’ reading
comprehension skills. Students responded to questions about various types of reading passages on the 2007 NAEP reading assessment, which consisted of two 25-minute sessions or one 50-minute session. Each section contained a reading passage and a set of related questions. The passages used in the assessment came from collections of children’s stories, children’s magazines, or children’s informational books. Students were asked to respond to both multiple-choice and open-ended questions about the text. The two contexts for reading that were assessed at grade 4 were literary experience and reading for information (USDOE, 2007c).

NAEP reports its reading results on a 0-500 scale. Scores are reported at five percentiles (10th, 25th, 50th, 75th, and 90th) to show trends in performance for lower-, middle-, and higher-performing students. Additionally, NAEP provides achievement levels on performance standards which indicate what students should know and be able to do. The achievement levels are the following:

- **Basic** denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at a given grade.

- **Proficient** represents solid academic performance. Students reaching this level have demonstrated competency over challenging subject matter.

- **Advanced** represents superior performance.

The NAEP achievement levels have been used widely by national and state officials to represent the proficiency levels of students on state tests (USDOE, 2007c).

The Nation’s Results

Nationally, 4th graders’ reading comprehension skills have risen in the last 15 years. The average score of 221 in 2007 was higher than in any of the previous
assessment years. Fourth-graders in 2007 scored 2 points higher than in 2005 and 4 points higher than in 1992. Gains were made in each of the two reading contexts assessed in grade 4. The score in reading for literary experience increased from 219 in 1992 to 223 in 2007. The score in reading for information increased from 214 in 1992 to 219 in 2007. Higher reading scores were seen particularly among lower- and middle-performing students (at the 10th, 25th, and 50th percentiles). The score at each of these percentiles was higher in 2007 than in all previous assessments. While the score in 2007 for students at the 75th percentile was higher than in both 2005 and 1992, the score for students at the 90th percentile showed no significant change in comparison to 2005 but was higher than in 1992. The performance increases were reflected in higher percentages of students performing at or above the Basic level and the Proficient level. The percentage of 4th graders performing at or above Basic increased from 62% in 1992 to 67% in 2007. The percentage at or above Proficient increased from 29 to 33% over the same period (USDOE, 2007c).

Mississippi’s Results

The NAEP not only provides the nation’s results but also individual states’ reading performance results. In Mississippi, 4th graders’ reading scores have risen since 2002. Fourth-graders in 2007 scored 4 points higher (208) than the 4th graders in 2005 (204). The slight performance increase was reflected in higher percentages of students performing at or above the Basic level and the Proficiency level. The percentage of 4th graders performing at or above Basic increased from 48% in 2005 to 51% in 2007. The percentage at or above Proficient increased from 18 in 2005 to 19% in 2007 (USDOE, 2007c).
Even though there are improvements in reading scores among students, Cavanagh and Hoff (2008) expressed that states are having difficulty reaching the goal of academic proficiency. Black students and Hispanic students are still behind White students in reading, and students who receive free or reduced price lunch are behind students who do not receive free or reduced price lunch (USDOE, 2007c). As a result, states receive assistance from the federal government, such as afterschool tutoring, in improving academic achievement to narrow the gap between these groups.

**Supplemental Educational Services**

Supplemental Educational Services are services provided to students to help improve their skills in content areas, such as reading, language arts, and math, which are tested by the state. Students from low-income families who attend Title I schools that are in their second year of school improvement are eligible to receive SES. If there are not enough funds to provide SES to each eligible student whose parent requests services, the school must give priority to the lowest-achieving eligible students. The school must be objective when selecting which students are lowest achieving. For example, the school may choose the lowest-achieving eligible students in the content area that is most responsible for the school’s being in the school improvement category (NCLB, 2002). However, according to Sunderman (2006), “all students in the school are eligible, regardless of individual student performance” (p. 119). NCLB (2002) requires that “SES must be high quality, research-based, and specifically designed to increase student academic achievement” (Section 1116; Sunderman, p. 118). In other words, the SES providers must provide evidence that their curriculum, teaching strategies, and material have helped improve academic skills.
The state and local educational agencies are major providers of SES. Each educational agency is to ensure that SES is available to all eligible students. To implement SES, NCLB (2002) requires that state and local agencies assume certain responsibilities.

**State Responsibilities**

The state is responsible for implementing SES by informing parents, teachers, school districts, and concerned citizens of the SES providers. Specifically, the state must adhere to the following procedures:

1. Consult with parents, teachers, local education agencies (LEAs), and interested members of the public to promote maximum participation by providers to ensure, to the extent practicable, that parents have as many choices as possible.
2. Provide and disseminate broadly, through an annual notice to potential providers, information on the opportunity to provide SES and the process for obtaining approval to be an SES provider.
3. Develop and apply objective criteria for approving potential providers.
4. Maintain an updated list of approved providers across the State, for each LEA, from which parents may select, and indicate which providers are able to serve students with disabilities or limited English proficiency (LEP) students. A state education agency (SEA) should also give each LEA a list of approved providers in its general geographic location.
5. Post on its Web site, for each LEA, the amount equal to 20% of the LEA’s Title I, Part A allocation available for SES and choice-related transportation (also known as the “20% obligation”) and the per-pupil amount available for SES.
6. Develop, implement, and publicly report on standards and techniques for monitoring the quality and effectiveness of services offered by approved SES providers, and for withdrawing approval from providers that fail, for two consecutive years, to contribute to increasing the academic proficiency of students served by the providers.

7. Develop, implement, and publicly report on standards and techniques for monitoring an LEA’s implementation of SES.

8. Monitor each LEA’s implementation of SES, including any LEA that spends less than the amount needed to meet its 20% obligation and chooses to spend the remainder of that obligation on other allowable activities to ensure that the LEA complies with the criteria in 34 C.F.R.200.48(d)(i).

9. In addition to its regular monitoring, review by the beginning of the next school year any LEA that spends significantly less than the amount needed to meet its 20% obligation and has been the subject of multiple complaints, supported by credible evidence, regarding implementation of the public school choice and SES requirements. (NCLB, 2002, Section 1116)

Local Responsibilities

The local school district also has specified responsibilities in implementing SES. The district must inform parents, teachers, eligible students, and concerned citizens of the services. The local school district must adhere to the following procedures:

1. Notify parents about the availability of services, at least annually.

2. Help parents choose a provider, if requested.
3. Apply fair and equitable procedures for serving students if not all students can be served.

4. Ensure that eligible students with disabilities and LEP students receive appropriate services.

5. Enter into an agreement with a provider selected by parents of an eligible student.

6. Assist the SEA in identifying potential providers within the LEA.

7. Protect the privacy of students who are eligible for or receive SES.

8. Prominently display on its Web site, in a timely manner to ensure that parents have current information: (a) beginning with data for the 2007-2008 school year and for each subsequent school year, the number of students who were eligible for and the number of students who participated in SES; and (b) for the current school year, the list of providers approved by the SEA to serve in the LEA and the locations where services are provided.

9. Meet its 20% obligation. If an LEA spends less than the amount needed to meet its 20% obligation, then it must either: (a) spend the remainder of that obligation in the subsequent school year; or (b) meet the criteria in 34 C.F.R. 200.48(d)(2)(i). (NCLB, 2002, Section 1116)

The SES program at the local and state education levels has many responsibilities, especially to those students who are attending schools that are in “need of improvement” (NCLB, 2002, Section 1116). NCLB holds all public schools accountable; however, certain schools are facing more challenges than others, such as rural as compared to urban schools (Reeves, 2003).
Supplemental Educational Services and Rural Education

While every student in the U. S. is expected to achieve at the proficient level by 2014, some schools have felt more pressure from the NCLB act than other schools (Hodges, 2002; Barley & Wegner, 2010). Tompkins (2003) stated, “Unfortunately, the law’s expectations for school performance raise the bar even higher for small, rural schools – particularly those in financially poor rural districts – that are already struggling to provide an adequate and equitable education for their students” (p. 1). Therefore, the timeline of the 2014 proficiency goal seems unrealistic to some people in the poor rural schools.

According to the Reeves (2003), 46.3% of MS public school students were enrolled in rural school districts. Moreover, 53% of Black students attended rural schools in MS. Also, many rural schools are largely comprised of students who live in poverty (Hull, 2003). According to Sunderman (2006), “research has provided little evidence to guide policy makers and educators on the benefits of supplemental educational services, particularly in improving the education of low-income and minority students” (p. 121). Consequently, efforts to implement SES successfully in these rural schools are fraught with many challenges.

One challenge is the type of company that responds to state education agencies request for proposals. These companies are most often large companies or online service providers. For financial reasons, the large companies tend to cater to urban and suburban schools, and the online companies require that students are technologically savvy, which is not possible for many students attending rural schools.
Another challenge for rural schools results from rural transportation issues. According to the NCLB’s (2002) provision of SES, transportation must be supplied to students in the programs. Consequently, rural schools spend a large portion of their federal dollars on transportation (Tyler, 2003). The students, moreover, have to endure long bus rides from afterschool tutoring which leads to getting home in the dark, and as a result, many decide not to participate. This lack of participation from parents and students results in difficulty in monitoring the effects of the SES program (Reeves, 2003).

Other challenges to implement SES for rural school districts include low enrollment of students and limited faculty. Barley and Wegner (2010) concurred by stating the following as challenges to implementing SES in rural areas: 1) the rural nature of the area, 2) access to providers, 3) logistics of transportation, 4) the lack of personnel, and 5) funds to support and monitor SES (p. 3). Reeves (2003) noted that the cost to provide SES is greater to a small school than the cost to provide SES to a large school. Tompkins (2003) expressed, “Almost every provision of the act is fraught with risks for rural schools and the more than 8 million children who attend them” (p. 28). Therefore, providing afterschool tutoring to students who attend rural schools is difficult due to the many challenges.

According to the National Assessment of Educational Progress (USDOE, 2007c), in reading, students who attend rural schools are behind those students who attend urban schools, and students who are of low socioeconomic status are behind those students who are of high socioeconomic status. In regards to SES improving academic achievement for all students who attend public schools in the U. S., Reeves (2003) stated, “due to limited options in rural areas, rural schools will likely have to take what they can get with
little or no assurance of the quality of those services, particularly for online providers” (p. 7). However, SES is mandated to help these very students improve their reading skills.

Coila Elementary School Afterschool Tutoring Program

The afterschool tutoring program in Coila Elementary School (CES) was funded by the 21st Century Community Learning Center Grant. This grant was awarded to the SEA by the U. S. Department of Education (USDOE), and the LEA applied for and received a subgrant. The USDOE (2007d) described the program as such:

This program supports the creation of community learning centers that provide academic enrichment opportunities during non-school hours for children, particularly students who attend high-poverty and low-performing schools. The program helps students meet state and local student standards in core academic subjects, such as reading and math; offers students a broad array of enrichment activities that can complement their regular academic programs; and offers literacy and other educational services to the families of participating children. (Program Description, para. 1)

CES applied for the grant in 2004 and received $181,954 for five years. Part of the school’s mission in administering the grant was to provide “tutoring to students at risk of academic failure and/or scored minimal or basic on the state mandated tests” (USDOE, 2007a, para. 1).

In May 2008, the 3rd through 6th graders of Coila Elementary School (CES) took the Mississippi Curriculum Test, 2nd Edition (MCT2). In August 2008, language arts scores were reviewed and a list of students scoring the range of basic and minimal was compiled. Students who scored basic and minimal on the MCT2 of 2008 were provided
the opportunity to participate in the afterschool tutoring program. Out of the 166 students who scored *basic* and *minimal* on the MCT2, 80 students participated.

The program began immediately after school at 3:30 pm, with students attending classes taught by their grade-level teachers on Mondays, Tuesdays, and Thursdays. The teachers volunteered and received pay of $50 per day. Students worked on homework for the first 30 minutes and computer literacy for the second 30 minutes. For the second hour, students worked on reading, language arts, and math skills. Teachers used MCT2 practice books, computer-assisted programs such as *Study Island*, and skill-related board games for remediation. Snacks and transportation were provided. The program began in September 2008 and ended in April 2009.

**Statement of Problem**

According to the *Nation’s Report Card* and the Mississippi Curriculum Test, Second Edition, there are students who are not meeting the goal of academic proficiency in reading. No Child Left Behind-related tutoring programs are mandated to improve student achievement in public schools in the United States. However, the programs are being questioned because of concerns about whether the billions of dollars spent on the programs are producing positive outcomes, whether all students who need tutoring are receiving it, and whether all or at least most programs are of sufficient quality. These concerns have been topics of debate among federal, state, and local educational agencies. According to Burch (2007), “it is unclear how SES might affect academic achievement; existing research leaves many questions unanswered” (p. 4). Furthermore, Sunderman (2006) expressed, “There was no precedent in federal law for this provision and no body of research that provided clear and consistent evidence that supplemental educational
services improve learning outcomes for low-performing – particularly low-income or minority – students” (p. 117). Consequently, while the need to increase student achievement in reading for students in the nation and specifically Mississippi is apparent, there is little empirical evidence that SES will result in an increase in student achievement in reading.

Purpose Statement

Tutoring has been in public schools for decades, and is one of the No Child Left Behind act’s ways of improving student achievement. Moreover, NCLB mandates credible tutoring providers for low-income students in low performing schools (NCLB, 2002). However, according to Lewis (2006), “...parents have absolutely no guarantee that the tutoring which their children are receiving is of high quality or, for that matter, even that it is actually helping to improving their children’s achievement” (p. 3).

It is believed that tutoring has a positive impact on student achievement because of its massive availability. Consequently, Goyette (2009) expressed, “The programs instituted to increase test scores and student achievement should be studied in order to determine their overall effectiveness” (p. 11). Therefore, the purpose of this study is to determine what impact a No Child Left Behind-related afterschool tutoring program has on reading achievement of elementary students in a Mississippi rural school setting.

Research Questions

The No Child Left Behind act requires SES to help improve students’ academic skills in public schools in the United States. However, the effectiveness of SES is often questioned. This research seeks to determine the impact of an afterschool tutoring
program on reading achievement, in which case two research questions guided this study, and they are stated as follows:

1. Is there a significant difference between the 2008 and 2009 MCT2 language arts scores of elementary students who participated in a No Child Left Behind-related afterschool tutoring program in a Mississippi rural school setting?

2. Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a No Child Left Behind-related afterschool tutoring program and those students who did not participate in a No Child Left Behind-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores?

**Justification for Study**

The federal investment in Title I requires states, school districts, and schools to ensure that all student groups meet high standards (Reeves, 2003). The NCLB act of 2001 and the MSAI act of 1999 require that the achievement gap between economically disadvantaged students and their peers be closed. Schools that fail to make sufficient progress receive special assistance. Although SES are offered to all public schools that meet the requirements, much of the research examining the efficacy of SES has been conducted in urban, rather than rural, school districts. According to Viadero (2007), “five years after the No Child Left Behind Act became law, there’s still a dearth of research evidence to show whether one of the federal measure’s least-tested innovations—a provision that calls for underperforming schools to provide afterschool tutoring—has an impact on student achievement” (p. 7). Research concerning tutoring in rural areas and student achievement is a definite need. Therefore, the purpose of this
study is to determine what impact a NCLB-related afterschool tutoring program has on reading achievement, as measured by state test results, of elementary students, so this documentation can be added to the evidence of whether students are improving in reading skills with the SES program.

**Limitations**

Certain limitations are inherent in causal-comparative research designs. One limitation is the use of intact groups. Because the groups of individuals were already formed, the nonrandom sample may be representative of the population. Of the 166 Coila Elementary School’s students who scored *minimal* and *basic* in reading/language arts on the MCT2 in 2008, 80 students participated in afterschool tutoring. In which case, group membership (participated or not) was self-selected. Consequently, this self-selection presents a major threat to the internal validity of this study. Within this population, bias may result from the fact that some students’ parents are more involved in their children’s education as evidenced by their child’s participation in the afterschool tutoring program. Therefore, some variability in reading achievement may result from parental involvement.

Another limitation of this study is the research design. The research design chosen is the causal-comparative research design. Causal-comparative studies have serious limitations. Two weaknesses include lack of randomization and inability to manipulate an independent variable (Fraenkel & Wallen, 2003). Sunderman (2006) expressed the following:

The federal law and most state guidelines merely require districts to look at test-score gains of students before and after they receive supplemental services, a
design that provides the weakest basis for identifying a causal link between the intervention and outcomes because it lacks an equivalent comparison group. (p. 119)

However, to improve the design, the following is recommended:

1) match subjects from the comparison groups on that variable,
2) either find or restrict one’s comparison to groups that are relatively homogeneous on that variable;
3) match the groups on that variable, using the technique of statistical matching.

(Fraenkel & Wallen, 2003, pp. 372-373)

For this study, the groups of individuals were matched based on their 2008 language arts scores on the MCT2.

**Definition of Terms**

The following represents terms used in this study:

**Title I** - a term from the NCLB Act of 2001 to indicate a set of programs set up by the USDOE to distribute funding to schools and school districts with a high percentage of students from low-income families.

**34 C. F. R. 200.48** - a term from the NCLB Act of 2001 which refers to the funding for choice-related transportation and supplemental educational services.

**20% obligation** - a term used in the NCLB Act of 2001 which states that districts are to spend at least 20% of their Title I funds on choice-related transportation and SES.

**Schoolwide Title I** – a school that receives Title I dollars that has a student enrollment in which more than half of the students are low-income.
CHAPTER II
LITERATURE REVIEW

The SES was established by the NCLB Act of 2001 to help students who attend low-achieving schools improve their reading and math skills and to meet its goal of proficiency. Since its implementation, researchers have used surveys, interviews, and observations to examine whether or not there is any correlation between SES and student achievement. From this research, evidence emerged about SES and student achievement, specifically, NCLB-afterschool tutoring and reading achievement.

In this chapter, empirical studies on supplemental educational services’ impact on student achievement are examined. Evidence opposing and supporting afterschool tutoring and its impact on reading achievement and supplemental educational services and its impact on student achievement are provided. The evidence includes the evaluations of different tutoring programs (such as computer-assisted instruction within after-school tutoring, one-on-one tutoring, and peer tutoring) and keys to an afterschool tutoring program’s successful implementation.

The literature provided contains research conducted since the implementation of the No Child Left Behind act. Even though the research revealed much literature on supplemental educational services and student achievement, most of the studies were conducted in urban schools. Therefore, very limited evidence on what impact the No
Child Left Behind-related afterschool tutoring on reading achievement of elementary students in a Mississippi rural school exists.

**Effects of Supplemental Educational Services on Student Achievement**

*Supporting*

To provide evidence to support SES, researchers of the federal government conducted a study. Representatives from the *National Longitudinal Study* (NLS) of the NCLB reported on a study on student participation in SES and student achievement, including afterschool tutoring programs and reading achievement. This report presented an analysis using student-level data from nine large urban school districts (USDOE, 2007b). The nine large urban school districts that participated were Baltimore City, MD; Chicago, IL; Denver, CO; Long Beach, CA; Los Angeles, CA; Palm Beach, FL; Philadelphia, PA; San Diego, CA; and Washington, DC. SES were provided by different agencies, such as approved for-profit and nonprofit entities, school districts, faith-based organizations, and public and private schools. The study did not provide information on how SES was provided. Data were collected before and after the students received SES in comparison with students who did not participate in SES. Data came from state tests, district-administered tests, and/or district-mandated tests.

Key findings from the report included:

- Participation in SES options was highest in elementary grades.
- African American students had the highest rate of participation, compared with other racial or ethnic groups, in Title I SES.
- Students enrolled in SES had prior achievement levels lower than those for students who were also eligible for these services but who did not enroll.
On average, across seven districts, participation in SES had a statistically significant, positive effect on students’ achievement in reading and math. Students participating for multiple years experienced larger gains. (USDOE, 2007b, pp. xi & xii)

The study indicated that student participation in SES programs “had a positive and significant average effect in both math and reading in five of seven districts. The other two districts had results that were not distinguishably different from 0” (p. 18). Two school districts were excluded from the analysis because they had fewer than 100 students participating in SES (USDOE, 2007b).

The results of this study were important “because they are based on data from districts that include a range of underperforming schools and disadvantaged populations that NCLB is designed to target” (USDOE, 2007b, p. xii). Other empirical studies were more specific in investigating the tutoring program in SES and reading achievement.

In an action research project which Moody (2007) conducted, the impact of a computer-assisted instruction (CAI) program in a voluntary afterschool program on elementary students’ reading achievement was examined. The school, St. Mary’s Elementary, located in Georgia, was a Title I school at the time of this study. It had an enrollment of 570 students in grades PK – 5, a staff of 46 teachers, 14 paraprofessionals, an instructional lead teacher, a guidance counselor, an assistant principal, and a principal. Twelve students participated in this study. They were either 3rd or 4th graders who were selected based on their 2006 Criterion-Reference Competency Test (CRCT) scores. Scores ranging from 774 to 799 reflected Basic/Does Not Meet standards, and
scores from 800 to 825 indicated *Low Proficient/Meets* standards (Moody, 2007). The students attended afterschool tutoring over four weeks. The sessions were immediately afterschool on Wednesday and Thursday afternoons for an hour and 30 minutes per session. Third and Fourth grade teachers tutored the group, implementing a computer-assisted instruction, *Myskillstutor*, in their sessions. Each practice session contained before, during, and after reading strategies (Moody, 2007). To answer the study’s research question --“What changes will be evident in student reading achievement throughout the four week after-school tutoring program?” (Moody, 2007, Measures section, para. 1) -- results from students’ *Myskillstutor* pretest, Teacher developed student pretest, *Myskillstutor* activity results, *Myskillstutor* culminating quiz, and a Teacher developed student posttest were analyzed.

The results of this study were positive. This action research provided some evidence of the effectiveness of CAI use within an afterschool tutoring program in improving students’ reading comprehension skills.

Another study that included tutoring with an additional method, “The Effects of Classwide Peer Tutoring on the Reading Achievement of Urban Middle School Students” (Veerkamp, Kamps, & Cooper, 2007), investigated the effects of teacher-led instruction, Classwide Peer Tutoring (CWPT), and CWPT plus lottery on student achievement as measured by weekly tests. CWPT plus lottery was defined as classwide peer tutoring with extrinsic rewards provided by the teacher. Three sixth-grade general education reading classes under the direction of one teacher participated. One class involved teacher-led instruction. Another class used CWPT, and a third class used CWPT plus a lottery contingency. Data were collected on all students from weekly written tests of
vocabulary and comprehension. Seventy-one 6th grade middle-school students in an urban, economically disadvantaged area were participants in this study. The school was Title I, with 75% of the student population eligible for free or reduced lunch. A reversal or ABAB design was used for this study, and class mean scores from weekly posttests and periodic pretests were collected. Overall, results demonstrated improved performance on weekly tests under CWPT conditions compared with teacher-led instruction. CWPT plus lottery resulted in further increases.

Chatterji, Kwon, and Sng (2006) conducted a year long, two-phase study of an afterschool supplemental program in a New York elementary school. Fourth and fifth grade students who struggled with reading participated in a 16 week program in a school in Harlem during the 2001-2002 school year. The students were ethnic minorities who were enrolled in the free or reduced lunch program, which placed them in the low socioeconomic bracket. A matched-groups quasi-experimental research method provided the results for this study. Multi-level reading pretest and posttest were used for achievement outcome measures. The afterschool supplemental program emphasized basic reading skills, speed and accuracy skills, independent learning, and self-paced mastery of graduated materials in basic reading. It lasted 20 minutes per subject, 3 days of a week. Teachers volunteered to participate in the program. The mean reading score for the participants was 18.6 (SD=3.3), and the mean reading score for nonparticipants was 18.4 (SD=4.4), with an effect size of +.04. As indicated by the small effect size, the difference in reading scores of participants and nonparticipants was not meaningful. However, the participants’ achievement outcomes were better than the nonparticipants.
Rickles, Barnhart, and Gualpa (2008) conducted a study with similar results as the above mentioned study. This study was conducted in one Los Angeles, California urban school district over five years, from 2003 to 2007. The researchers used a quasi-experimental analysis of the SES impact on student achievement, difference-in-differences approach. This approach included nonequivalent comparison and treatment groups. Annual test scores on the California Standards Test (CST) provided the data. While the group of students who participated in the supplemental educational services scored statistically significantly higher than the nonparticipants, the difference between the groups was minimal as indicated by the effect size of .04.

The Office of Research, Evaluation, and Accountability (2007) provided a study that examined the effectiveness of the SES tutoring program in reading achievement of SES participants compared to students not eligible for SES tutoring. In the 2005-2006 academic year, 55,600 students across 324 Chicago Public Schools were provided the opportunity to participate in the SES-tutoring program. Students in grades 3 through 8 who scored at or below the 25th percentile on the Iowa Tests of Basic Skills (ITBS) reading subtest were recommended for SES, and nearly 61% of the students were SES participants. Most of the participants were Black (23,273), 55.9%. Forty-two programs tutored students during 2005-2006, with the Chicago Public Schools’ SES program, A.I.M., serving most of the students, 40%. The principal method used to assess the effectiveness of the SES program was to measure changes in student reading achievement from the 2004-2005 ITBS to the 2005-2006 Illinois Standards Achievement Test (ISAT). Changes in achievement of SES program participants were compared to students eligible to participate in the SES tutoring program (low-income students attending
underperforming schools) and students not eligible for SES tutoring (either not low-income and/or not in underperforming schools). A general linear model (GLM) was used. SES participants demonstrated a small but statically significant improvement in reading compared to students who were eligible for SES but did not receive SES.

In an article titled “Effect of Tutoring on the Academic Achievement of Elementary Students,” McIntosh (n.d) cited multiple studies that reported a positive effect of tutoring on the reading achievement of elementary students. In the study conducted by McIntosh, 15 elementary students from E. E. Lyon Elementary in St. Tammany Parish were participants. The school consisted of 35% Black students and 65% White students, with about 56% of its students receiving free/reduced breakfast and lunch. The students were treated as two different groups, before tutoring and after tutoring. The quasi-experimental, single group pretest-posttest design was used. One-to-one instruction was administered to these students for the 2001-2002 school year. The data to measure academic achievement came from an achievement test, the Developmental Reading Assessment (DRA). The DRA is a criterion-referenced test which assesses “reading comprehension and oral reading accuracy through the use of a collection of graded reading passages in little book form with levels ranging from predictable, simple text to complex stories” (McIntosh, n.d., Instrumentation section, para. 1).

Islas, Myers, Pfeffer, Recendez, and Young (2008) conducted a study that examined the test scores of students who attended two middle schools before and after the implementation of an afterschool program during the school year 2007-2008. The two middle schools were located in low income neighborhoods in Riverside and
Highland, California. The studies were conducted at Arizona Middle School and Beattie Middle School. Students from sixth through eighth grades participated in the afterschool programs. The afterschool programs aimed “to assist low-income students who need to improve grades in different subject areas as well as to improve test scores” (p. 11). The students attended the programs three times a week for one hour daily. To determine whether or not scores improved, the CST English scores of the participants from the beginning and end of the school year were compared using descriptive statistics. The results revealed that 81% of the male participants and 78% of the female participants improved their CST English scores over the course of the year.

Wyllie (2008) conducted a study comparing reading achievement of nonparticipants and participants in the Pennsylvania System of School Assessment (PSSA) Prep program. One purpose of this study was to determine the impact of the PSSA Prep program on student achievement in reading. The PSSA Prep program was a 46-minute period daily course where students received additional instruction in reading. The program was designed to target economically disadvantaged students first as determined by participation in the free and/or reduced lunch program. Students attended schools in Increasing Diversity School District in western Pennsylvania. Those students who did not show proficiency on the previous Pennsylvania System of School Assessment, Stanford Achievement test, standardized tests, and/or district level comprehensive exams were entered into the Prep program. The program, implemented during the 2004-2005 school year, listed the following four key components to improve student achievement:

1) additional time during the normal school day dedicated to skill building,
2) small group settings,

3) targeted instruction in specific skill areas identified by assessment as in need of remediation, and

4) the addition of computer-aided instruction as a component of the overall instructional approach. (p. 4)

Data consisted of 11th grade students’ reading scores from PPSA assessments. A quasi-experimental design was the research method, and a two-way analysis of variance (ANOVA) analyzed the reading assessment scores. There was a statistically significant main effect for participation status, F(1,189)=16.93, p<0.01; students who participated had a larger mean on reading scores compared to nonparticipants.

Most studies of whether the NCLB-related afterschool tutoring program has any impact on reading achievement of elementary students were conducted in urban school districts, not in Mississippi rural schools. However, Baker, Rieg, and Clendaniel (2006) conducted a study of an afterschool tutoring program and its impact on math achievement in a rural school district. The study not only provided the results of the investigation, but also it listed keys to a tutoring program’s success. The school district in rural Pennsylvania partnered with the local university to implement an afterschool math tutoring program. Tutors were recruited through the university. Students from grades 3 – 6 were chosen to participate based on math scores below the 30th percentile on the standardized test used by the state of Pennsylvania, the results of the Stanford 9 Achievement Tests, and classroom teachers’ recommendations. The students were given assessments as a pretest and a posttest of a math inventory. The students participated in an after-school tutoring program that lasted 20 weeks, 10 weeks in the fall and 10 weeks
in the spring. Each session lasted for 90 minutes immediately after the regular school day. The session involved homework, skill reinforcement, educational games that reinforced math concepts, and math-related games in the computer labs (Baker et al., 2006).

According to the study, the posttest math inventory showed a gain of 72% or better among the students. Also, the study provided keys to the program’s success: (a) an overall program coordinator, (b) maintaining a 2:1 or better child-tutor ratio, (c) scheduling less-structured snack and game times, (d) recruiting tutors whose efforts are reinforced as part of university coursework, (e) keeping children with the same tutor, and (f) strong support from the district. (Baker et al., 2006, p. 292)

Miller (2009) conducted a study with an experimental group and a control group. The purpose of this study was “to determine achievement score gains in the subjects of language arts and mathematics associated with a supplemental education services (SES) program provided for fourth and fifth grade students in a local urban district” (p. 3). For the purpose of the current study, only information pertaining to language arts are documented. The local urban district was located in southern New Jersey. There were 42 students in the sample size, and they came from three local elementary schools. Twenty-one students were in the experimental group, and twenty-one students were in the control group. Out of the three schools, one had not met adequate yearly progress (AYP) in three years consecutively. The students in the experimental group attended a SES tutoring program five hours weekly for six months. These students also received additional SES by participating in an instructional web-based program, Brainchild. Miller described the program as “grade specific and geared toward the New Jersey ASK-
test in accordance with state standards” (p. 23). Both groups of students were administered the pretest and the six month benchmark posttest. A pretest-posttest design was used in order to measure the effects of SES on the language arts achievement. The students’ initial pretest and posttest Brainchild scores were the dependent variables. The data was analyzed by a mixed two-way ANOVA. The study presented two hypotheses:

1) After the six month benchmark of tutoring provided through SES, students in the experimental group would achieve higher scores on the language arts and mathematics posttests in comparison to the students in the control group, those students who did not receive SES.

2) Posttest scores would represent an increase from initial pretest scores for those students within the experimental group. (p. 23)

To answer hypothesis one regarding language arts, “there was a significant main effect on SES on language arts scores ($F=4.6969$, $df=1$, $p=.036$)” (pp. 26-27). The scores of the students in the experimental group increased significantly more than the scores of the students in the control group. The control group’s mean score (52.4%) pretest and (64.4%) posttest compared to the experimental group’s mean score (50.6%) pretest and (70.6%) posttest. To answer hypothesis two, the posttest scores of the students in the experimental group did significantly increase from their pretest scores. The results are positive for this study.

Mangru (2008) investigated an elementary school academic camp’s (ESAC) impact on reading scores. The purpose of the study was to investigate the effects of the ESAC at the target school of at-risk students based on their reading scores on the Florida Comprehensive Achievement Test (FCAT). The majority of the students attended the
school were Black, and 50% of the students received free or reduced price lunch. There were 50 at-risk students from 4th grade in the experimental group and 140 students in the control group. The ESAC operated from Monday through Thursday from 2:30 p.m. to 4:30 p.m., and it was free to the students. To answer the research question, “Will fourth-grade students who participated in the ESAC score better in the reading portion of the standardized test than the control group as measured by the FCAT scores?” the researcher compared the scores of those of the control group to those who participated in the ESAC. In the study’s results, there was a significant increase in reading for the experimental group and a significant decrease in reading for the control group.

Mahoney, Lord, and Carryl (2005) investigated the relation between afterschool program (ASP) participation and reading achievement. In this longitudinal study, the researchers took an ecological approach. The researchers explained that “the approach called for the identification of individual patterns of after-school care across several arrangements and the comparison of children with different after-school care patterns in terms of academic-related outcomes over the school year” (p. 813). During the 2002-2003 school year, many of the fourth graders failed to meet the state minimal proficiency requirements in reading in the schools in this study. There were 599 participants who attended three public schools in the Northeastern United States in this study. They were from first to third grades and located in an economically disadvantaged, urban city. The sample was considered racially diverse with 50% Hispanic, 36% Black, 10% White, 2% Asian, and 2% other. Ninety-five percent of the students were eligible to receive free or reduced lunch during the 2002-2003 school year. The participants attended the afterschool programs that were housed in the public school from 3-6 p.m. The programs
were funded by local, state, and federal sources including the federal 21st Century Community Learning Center grant. The programs included snack, homework, enrichment learning, supervised recreation, and art. The classes were per grade and directed by a local teacher. The Developmental Reading Assessment (DRA) was used to assess the reading achievement. The DRA tested reading comprehension and fluency through a series of progressively challenging stories. The researchers collected data twice during the 2002-2003 school year, during the late spring and summer of 2003. Researchers analyzed the data by using a multivariate analysis of covariance (MANCOVA). The results revealed that the reading achievement of children in ASP was significantly higher than that of those children who were with a parent afterschool, a nonparental adult afterschool, and a nonadult afterschool.

Vandell, Reisner, and Pierce (2007) conducted a two-year study that provided positive results on afterschool tutoring and reading achievement. “Outcomes linked to high-quality afterschool programs: Longitudinal findings from the study of promising afterschool programs” provided data on 1,434 third or fourth grade elementary participants from eight states: Colorado, Michigan, Connecticut, Rhode Island, California, Montana, New York, and Oregon. The students were characterized as being low-income (63% received free or reduced price school lunch) and ethnically diverse (77% Hispanic, 8% Black, 3% Asian). Nineteen afterschool programs served the students four or five days a week. The programs were free of charge to the students and offered recreational, arts, enrichment activities, and age-appropriate learning opportunities to improve reading skills. Standardized test scores in reading were collected at three points over the two year period: baseline, end of year one, and end of
year two. Two-level random-intercept HLM models allowed the “researchers to assess change scores in child and youth performance across two years with respect to both school factors and individual factors including sets or clusters of afterschool experiences” (p. 4). Effect sizes were calculated, also. This study found positive outcomes for elementary school students who regularly attended the high-quality afterschool programs across two years.

Klein and Bolus (2002) conducted a study with positive results. “Improvements in math and reading scores of students who did and did not participate in the Foundations after school enrichment program during the 2001-2002 school year” analyzed the CTB/McGraw-Hill CAT-5 Reading Comprehension test scores of students who participated in a tutoring program called Foundations. The test was given in the fall of 2001 and the spring of 2002. Most students in grades first through fifth in California schools participated in the Foundations program during the school year 2001-2002, and most of them were eligible for free or reduced price lunch. To test the effects of the Foundations program on the development of student reading skills, the researchers compared the participants’ progress to that of students in the national norm sample and compared the progress of participants to nonparticipants from the same or similar school. The Foundations staff administered the same reading test to nonparticipants and participants. Their mean pretest scores for reading, participants – 655 and nonparticipants – 653, were similar. However, the participants made a substantial and statistically significant gain in reading scores between the fall pretest and spring posttest.

“The impact of participation in supplemental educational services (SES) on student achievement: 2007-08” by Barnhart (2009) expanded upon the previous studies
conducted in 2004-2005, 2005-2006, and 2006-2007 in the Los Angeles Unified School District (LAUSD). This study examined the impact of SES participation on students’ CST performance for the 2007-2008 school year. The researcher used the value added approach and estimated the impact of SES participation as “the difference between average value added for the participating group and the average value added for the non-participating comparison group” (p. 12). The finding was similar to the previous five years. There was a small, positive impact of SES participation on CST performance.

Fleming (2005) researched an afterschool program with structured literacy components in 2003. Participants attended Giffen Memorial Elementary School in the south end of Albany, New York. It had the highest percentage of minorities, 64%. Ninety-two percent of the students were eligible for free or reduced price lunch. There were 49 students from grades 2 through 6 who participated in the Two Together afterschool program. The program was an afterschool literacy program that strived “to strengthen children’s social, cultural, and intellectual growth by improving their reading skills…” (p. 76). The program operated daily from 3:30 p.m. to 4:30 p.m. for four months. The method and data collection included examination of records, reports, archival materials, self-reports of progress, on-site observation, and interviews. Findings indicated that reading scores of many participants improved.

“Supplemental educational services (SES) provision of No Child Left Behind: A synthesis of provider effects” by Chappell, Nunnery, Pribesh, and Hager (2010) examined many programs of SES and their effectiveness on student achievement. The study also provided characteristics of effective SES tutoring programs. Many empirical
studies conducted from state and local school districts were collected and analyzed. According to this study:

The purpose was to analyze this information by synthesizing and modeling provider effects to estimate the effectiveness of SES as a whole, to inform the design of effective programs, and to assist in the development of scientifically-based criteria upon which to base approval, removal, and continuance decisions. (p. 4)

A meta-analytic parametric estimation of effect sizes methodology was used to estimate mean effect size estimates for reading outcomes. There were 139,844 participants, and 401 reading effects were collected and analyzed. Twenty-seven SES evaluations from eleven states or local school districts were included in the meta-analysis for the reading analysis. The overall mean reading effect was small but statistically significant. The mean weighted reading effect size was +.017. Characteristics of effective SES tutoring programs were a) the use of school district providers, b) experienced, well-trained tutors with four-year degrees, c) a national or prescribed curriculum, and d) one-to-one tutoring for reading instruction.

A few qualitative studies emerged from the review of literature on SES and reading achievement. In the recommendation section of this study, interviews and observations, along with quantitative data, are suggested in future research. Therefore, results from these kinds of studies were examined, also. The study “Implementation of supplemental educational services in the St. Paul schools” was conducted by collecting viewpoints from different stakeholders on the impact of SES on students. The study took place in St. Paul Public School District where seven tutoring programs served the students. The school district was in a large city with a high degree of diversity. The
researchers used “the method of triangulation to identify discrepancies in perceptions regarding the impact of SES instruction on student progress from the perspectives of different stakeholders” (Ysseldyke, Carlstrom, Tan, Brockel, & Drake, 2007, p. 4). There were 107 students who attended tutoring. Parents of those students who attended tutoring at least 30% of the time, teachers of the students who attended tutoring, and principals were contacted and interviewed. According to the results, most parents, teachers, and principals reported progress.

“Effectiveness of before and after-school tutoring programs as measured by the Mississippi Curriculum Test” by Goyette (2009) provided two types of results. The purpose of this study was to determine if students who participated in before-school tutoring and afterschool tutoring during one year experienced any growth as defined by the NCLB Act of 2001 and the Mississippi Student Achievement Improvement (MSAI) Act of 1999. This study was conducted in southern Mississippi. There were 146 participants in grades three through six in this study. Students who scored basic or minimal on reading, language arts, and/or math were invited to attend a tutoring program offered by their school free of charge the following year. The programs were optional. There were two elementary schools, School A and School B. Both schools were in a level 5 school district, the highest accreditation level for state testing at the time. School A offered before-school tutoring, and School B offered afterschool tutoring. School A was a level 5 school, and School B was a level 4 school. The programs concentrated in reviewing and learning basic skills. The classes lasted one hour from Monday through Thursday. They were taught by approximately 14 certified teachers who were paid through Title I funds. This was a causal-comparative study that used the 2003-2004
Mississippi Curriculum Test (MCT) scores and the 2004-2005 MCT scores to determine growth among the participants. The growth model established by the Mississippi Statewide Accountability System and the one sample t-test were used to analyze the data. Those students who attended programs showed statistically more growth than the students who did not attend. However, the results concluded that there were no significant differences between those students who were eligible and attended tutoring sessions and those students who were eligible but did not attend with the exception of reading and math of third grade students.

Presnell (2009) conducted a study, “Effects of after school programs on elementary school students language arts and mathematics achievement,” that reported mixed results. Data was collected from a small urban school district located in the Intermountain West during the school years 2003-2004, 2004-2005, 2005-2006, and 2006-2007. During the first year, 1,574 students participated in after school programs. During the second year, 2,239 students participated in afterschool programs. During the third year, 1,730 students participated in afterschool programs, and during the fourth year, 2,037 students participated in afterschool programs. Scores from a language arts criterion-referenced test were analyzed for this study. A quasi-experimental design was used to estimate effects on achievement of students participating in an afterschool program in comparison to students who did not participate in the programs. A one-to-one match was completed. To assess the impact of participation in an afterschool program on student test scores, a hierarchical cross-classified model was performed. According to the results, students who participated in an afterschool program scored 1.33 points lower on their language arts tests in comparison to a matched sample of students who did not
participate in an afterschool program. On the other hand, students considered low-income (received free or reduced price lunch) who participated in an afterschool program scored 1.11 points higher on their language arts tests than students who did not participate in an afterschool program.

Russell, Mielke, and Reisner (2009) prepared a report entitled “Evidence of program quality and youth outcomes in the DYCD out-of-school time initiative: Report on the initiative’s first three years.” The Department of Youth and Community Development (DYCD) implemented out-of-school time (OST) programs to young people throughout New York City at no cost to families. The purpose of this report was to conduct a comprehensive evaluation of the OST initiative. During the 2007-2008 school year, more than 81,000 youths participated in one of 622 OST programs. The programs offered academic enhancement, arts and culture, and recreational activities. The researchers analyzed the relationship between OST participation and the performance on the state English language arts (ELA) test for grades 3 through 8. The results showed that OST participants and nonparticipants made small improvements, with no significant differences in the size of the gains.

Overall, participants of supplemental educational services either scored statistically significantly higher than or improved their scores in comparison to nonparticipants. Some scores of participants were statistically significant different with small effect sizes indicating the differences were not meaningful; however, participants’ had higher achievement outcomes. These results from the previous studies provided evidence that the extra time and help for participants are beneficial in meeting the goal of academic proficiency.
Dynarski et al. (2003) prepared a report for the U. S. Department of Education that included a study that examined the 21\textsuperscript{st} Century program at the elementary school level. The elementary school study used random assignment of students to treatment and control groups during the school year 2000-2001. The students attended urban elementary schools in which 57\% of them were minority, Black. Sixty-six percent of the students were considered high-poverty (at least half of the students were eligible for free or reduced-price lunches). The students participated in a program 5 days a week for two and a half hours a day. Homework session and story time were emphasized during the program. Reading grades and reading test scores provided the data during the fall 2000 and spring 2001. At the elementary school level, reading test scores were not higher for program participants than for similar students not attending the program. Findings were based on one year of data collected in the school year 2000-2001. The programs had no effects on reading grades or reading test scores. Participants had an average percentile reading score of 34.3 in spring 2001 compared to similar students with a score of 34.1.

The study “After-school Tutoring in the Context of No Child Left Behind: Effectiveness of Two Programs in the Pittsburgh Public School” (Zimmer, Hamilton, & Christina, 2010), examined the academic effectiveness of SES on student achievement. It tracked student achievement trajectories before, during, and after the students participated in SES and used data from the 2000-2001 to the 2005-2006 school year from Pittsburgh public school’s “Real-Time Information” longitudinal database. The counterfactual analysis was estimated to investigate the effects of the SES programs on student achievement. The study explored how students exposed to the programs would have
performed in the absence of the programs. SES was first offered to students in the 2004-2005 school year. Participants in SES were low-income students (defined by free and reduced lunch status) who attended a school in the 2nd year of corrective action through NCLB. There were 98 students who participated in SES 2004-2005 and 567 students who participated in 2005-2006, 84.5% African American, 12.9% Caucasian, and 3.6% others. These students took three kinds of annual achievement tests in reading. This study used a quasi-experimental design known as a fixed effect model. To examine achievement effects, Zimmer et al. (2010) “used achievement gains as the outcome measure to guard against differences in achievement trajectories prior to ‘treatment’” (p. 26). Limited evidence was found regarding whether students who participated in SES experienced achievement gains in reading.

Ross et al. (2008) evaluated SES and student achievement in Tennessee. Their two-year study, “Implementation and Outcomes of Supplemental Educational Services: The Tennessee State-wide Evaluation Study,” examined 1,325 students’ reading scores from their state’s test, Tennessee Comprehensive Assessment Program (TCAP), after they participated in SES. The students from Title I schools in Davidson County, Hamilton County, and Memphis were tutored in 2005-2006, and their end-of-year 2006 TCAP scale scores in reading were used for analysis. The study conducted two analytical models, hierarchical linear modeling and matched SES-control student pairs, to compare SES-tutored and non-tutored students’ achievement scores. The results of “the effects of tutoring on student achievement tended to be small and, with only a few exceptions, not significantly different than zero” (p. 53).
Munoz, Potter, and Ross (2008) evaluated the effects of SES programs on student achievement in an urban school district in Kentucky. Fourth, seventh, and tenth graders who attended Jefferson County Public Schools in Louisville, Kentucky participated in tutoring programs during the 2005-2006 school year. The schools contained a high percentage of at-risk urban students with high poverty levels. The sample included SES participants and SES-eligible, nonparticipating matched control students. These students attended tutoring one hour after school, two days per week. A quantitative analysis of student-level scores on state-mandated tests in reading was conducted. Two designs were used: 1) multiple linear regression modeling determined whether SES students’ obtained scores significantly exceeded their predicted scores based on prior achievement and demographic characteristics such as gender and ethnicity, and 2) quasi-experimental research was used to determine if participants’ scores were statistically different than nonparticipants’ scores while controlling for multiple student-level variables. The state-mandated test was the Kentucky Core Content Test (KCCT) in reading. The results showed no achievement advantages for the SES participants on state-mandated test scores in reading.

Rickles and White (2006) conducted a study comparing students who applied for and attended SES and students who applied for and did not attend SES in Los Angeles Unified School District (LAUSD) in California. There were 7,393 students who attended the English language arts (ELA)-based program. The Beyond the Bell Branch provided the data of the school year 2004-2005. To answer this study’s research question, “Did the use of SES effect student California Standards Test (CST) gains?” no significant difference in adjusted test scores existed between students who attended (ELA=0.02) and
those who applied but did not attend (ELA=0.04). This study’s results suggested that attending a SES program does not significantly impact student performance on the ELA.

To identify the effects of SES in increasing students’ reading achievement, Heinrich, Meyer, and Whitten (2010) conducted a study entitled “Supplemental educational services under No Child Left Behind: Who signs up, and what do they gain?” Data from school years 2004-2005, 2005-2006, 2006-2007, and 2007-2008 were collected for this study. Reading scores were compiled from three different sources: the old Wisconsin Knowledge and Concepts Examination, the new Wisconsin Knowledge and Concepts Examination, and the Terra Nova. Students from the urban Milwaukee Public School district who were eligible for and participated in SES were compared to eligible students who did not participate. These students were described as poor and as a “predominantly minority population.” The results stated that “using propensity score matching techniques and fixed effects models to adjust for student selection into supplemental educational services, we failed to find any statistically significant average effects on supplemental educational services on student reading (test score) gains” (p. 37).

Varro (2009) conducted a study that included five elementary schools and three middle/junior high schools across a large diverse Midwestern urban school district. The purpose of this study was to examine the potential long-term benefits of student participation in an academic-based afterschool program, June 2000 to May 2003. There were over 3,000 participants in the afterschool program funded by the 21st Century Community Learning Center (CCLC) federal grant. The program was offered four days a week, two hours a day. The first hour the students participated in recreational activities,
and the second hour the students participated in academic activities. Scores from the Minnesota Comprehensive Assessment, Second Edition (MCA II) were obtained to examine and compare students’ levels of academic achievement in reading. This study examined a matched pair sample of participants and nonparticipants. According to the results, there were no statistically significant differences in academic achievement of participants and nonparticipants.

One focus of the study “An examination of the provision of supplemental educational services in nine rural schools,” was whether or not SES contribute to student achievement in rural areas. However, in order to monitor the services, participation was needed. Unfortunately, as noted earlier, there are several challenges in implementing and monitoring the quality of SES in rural Title I schools. The researchers stated, “We acknowledge that the SES program was not designed with conditions of rural settings in mind, which is especially troublesome for high poverty rural communities” (Barley & Wegner, 2010, p. 3). Students from nine rural public schools (three elementary, three middle, and three high schools) in three High Plains states participated in this study. A purposive sample was created for this study. Most of the students who participated in SES were American Indian students, with 70% to 100% of them receiving free or reduced price lunch. This research was conducted with interview questions from the school’s district superintendent, school principal, classroom teacher, and tutors. The interview questions and answers were analyzed through a cross site analysis. As a result, “success with the program as measured by eligible student participation was not great” (p. 10).
Dreyer (2010) conducted a study entitled, “An examination of academic outcomes for students who attend a school-based afterschool program.” Students, primarily low-income and minority, in grades 3 through 8 were participants in this study during the 2008-2009 school year. This study examined variables such as gender, program location, and grade level. Students participated in afterschool programs in two charter schools in Western Pennsylvania, School M and School H. The afterschool programs were funded by a CCLC Grant administered by the Pennsylvania Department of Education. One purpose of the programs was to “assist students in meeting state and local standards in reading and mathematics” (p. 40). Students attended the afterschool programs Monday through Friday from 3:30 p.m. until 6:00 p.m. for approximately 155 days of the school year. Students participated in academic activities on Monday through Thursday and special events on Friday. However, at School M, “lessons were created based on weaknesses that were seen in students’ individual or group assessment data and/or from the Pennsylvania state standards for the particular subject” (p. 42). At School H, “the program director wrote individual learning plans for every student in the program” (p. 42). The research question that relates to this study was “Do elementary and middle school students who regularly attend school-based afterschool programs show greater academic gains than students at the same schools who do not attend the school-based afterschool programs?” (p. 4). Methodology included a quasi-experimental design with 47 participants and 50 nonparticipants for the reading analysis. Students who regularly attended were compared with a randomly selected group from the same population. Scores from the 4Sight benchmark assessment were used. It was designed to be predictive of how students would perform on the Pennsylvania System of School
Assessment (PSSA). To analyze the data, a one-way ANOVA with one between subjects factor (afterschool participation, i.e., participant or nonparticipant) was used. To measure academic gains, a difference score was calculated from students’ pretest and posttest scores on the 4Sight reading assessment. An overall ANOVA on the difference scores showed that afterschool participants with regular attendance did not perform better than nonparticipants in reading.

To evaluate the effectiveness of supplemental SES in Minneapolis Public Schools (MPS), Chan, Peterson, Heistad, and Tan (2010) conducted a study using the mixed-methods evaluation approach. To address one of the study’s questions, “Does SES improve the academic achievement of economically disadvantaged students who receive the services?” data were collected from 423 students in grades 3 through 8 for the reading analysis. All students received free and/or reduced priced lunch. Students received SES from thirteen providers in the school year 2007-2008. A mixed-methods evaluation approach which included a probability matched-sample value-added approach was used to examine whether the participants progressed academically above their expected growth. The MCA-II reading test scores and the Computerized Achievement Level Test (CALT) reading scores as a covariate were analyzed. Each participant was matched with a nonparticipant with the same or similar propensity score. The findings showed there was no significant difference in reading achievement between students who received SES and those students who were eligible for SES but did not receive services.

Munoz and Ross (2008) continued their study from the school year 2005-2006 to school year 2006-2007, examining SES on student achievement in Jefferson County Public Schools. The sample included at-risk urban students from grades three through
eight, and ten. The students lived in high poverty level communities. For the reading analysis, there were 1,697 participants and 843 nonparticipants. The participants attended tutoring two days a week for one hour after school. A quasi-experimental design using closely matched program and control students with multiple student-level covariates was used. The scores of KCCT Reading of the school year 2006-2007 were analyzed. The results were similar to the results of the study of 2005-2006. For reading, the overall effect was nonsignificant and small between the participants and similar non-SES students, with an effect size of -.05.

“Supplemental educational services and student test score gains: Evidence from a large, urban school district” by Springer, Pepper, and Ghosh-Dastidar (2009) examined the effect of SES on elementary and middle school students’ reading achievement over a five-year period. Students from third through eighth grades participated in SES from the school year 2003-2004 to the school year 2007-2008. Students were 47.8% Black, 36.4% White, and 12.4% Hispanic, and approximately 81% of them qualified for free or reduced price lunch. More Black students and Hispanic students were eligible for SES than White students, and they all were eligible for free or reduced price lunch. The sample included 456 students for the reading analysis. The measure was the reading assessment score. The researchers used two cross-sectional methods for estimating the SES treatment effect. One method compared “the performance of students enrolled in SES to future SES participants where future participants are defined by those students who were not yet eligible for SES but elected to enroll with a provider when they became eligible in the following school year” (p. 6). The second method used propensity score analysis. As a result, the average effect on SES on students’ reading test score gains was insignificant.
“Evaluation of the supplemental educational services in Minneapolis public schools – third year study” (Tan et al., 2007) examined the effectiveness of SES on raising students’ reading achievement in Minneapolis Public Schools (MPS) during the school year 2006-2007. For the reading analysis, 3,699 students were involved. There were 999 participants, and 2,689 eligible students who did not participate in any SES reading program. Students in grades three through seven took the Northwest Achievement Level Test (NALT), CALT in the fall 2006 and MCA-II reading in the spring 2007. Ninety-nine percent of the students in the sample who received tutoring were eligible for free or reduced priced lunch. Thirteen SES providers provided reading programs; MPS was the largest provider serving almost 78% of the students in the SES reading program. The researchers used a regression-based value-added model to evaluate the effectiveness of the SES programs on improving reading. To analyze the data, the following was provided:

In the reading model, the outcome variable was the Spring 2007 MCA-II reading scores and the predictors included the Fall 2006 NALT/CALT reading scores, ethnicity, gender, English Language proficiency status, special education status, and the participation status for the SES reading programs (1 = Participated; 0 = Eligible but did not participate). (Tan et al., 2007, pp. 8-9)

The regression model allowed the researchers to examine whether there were any differences in reading achievement between participants in SES reading programs and those who were eligible but did not participate. The finding indicated there was no statistically significance on reading achievement between students who participated in SES and those who were eligible but did not participate across grade levels.
“Measuring the effectiveness of after-school programs via participants’ pre and posttest performance levels on the Georgia criterion referenced competency test” provided results of an investigation of two afterschool programs and their effectiveness in one suburban middle school in Augusta, Georgia. The purpose of this study was to determine if participants in two afterschool programs demonstrated greater improvement in achievement on the Criterion Referenced Competency Test (CRCT) than nonparticipants. The afterschool programs began in October 2006 and ended in March 2007. Participants attended three days a week. Priority was given to students who failed the 2006 CRCT and received free/reduced lunch. There were 19 participants. The researcher matched pairs for a comparison group based on scaled scores from the 2006 GA CRCT. There were 19 in comparison. Nonparticipants qualified but chose not to participate. The study used pre and posttest scores of participants. The 2006 GA CRCT scores were the pretest scores, and the 2007 GA CRCT scores were the posttest scores. A t-test analyzed the data and revealed that the participants did not improve as much as the nonparticipants (Ogden, 2008).

Horton (2010) conducted a study that examined students who participated in a CCLC afterschool program at two similar schools in a rural county in Northwest Georgia. The purpose of this study was to examine the effect of a CCLC afterschool program on middle school students’ standardized test scores and behavior. For this study, only the effect on test scores was reported. This was a quantitative study using a causal comparative research design. Fifty-eight 6th through 8th grade students participated in this study. They were predominantly white and considered economically disadvantaged (most of them received free/reduced price lunch). The students attended a CCLC program
that began in October 2008. It was held from 3:20 p.m. to 6:00 p.m. at each school. The program provided snack/social development time, homework time, reading skill enrichment, youth development and enrichment activities. The Georgia CRCT reading scores of 2007-2008 were used for pre-treatment, and the CRCT reading scores of 2008-2009 were used for post-treatment. A two-tailed, paired t-test at the alpha .05 level showed that the reading scores were not significantly different. CCLC afterschool program did not have a significant effect on reading CRCT scores.

Pertaining to this study, “A statewide impact study of 21st century community learning center programs in Florida” (Nguyen, 2007) provided data on a grand scale. This study compared an intervention group with 24,754 students and a control group with 19,815 students. The students in the intervention group attended the CCLC programs at least 30 days, and the students in the control group attended fewer than the required 30 days. A total of 76 CCLC programs provided the data on participants. Students targeted by the programs were required to be “(1) low-income, as indicated by participation in the free and reduced lunch program, and (2) low-performing, as indicated by previous scores on the Florida Comprehensive Achievement Test (FCAT)” (Nguyen, 2007, p. 35). This study used a quasi-experimental design with a general linear modeling procedure on reading grades. In the study’s results, neither the students in the control nor intervention group demonstrated reading gains over the course of the year.

Summary

The review of the literature included research on the effectiveness of supplemental educational services on student achievement. However, findings cited in the review of literature chapter are conflicting. Multiple researchers (Moody, 2007;
Wyllie, 2008; Miller, 2009; Barnhart, 2009) have found that supplemental educational services increased student achievement while others (Dynarski et al., 2003; Ross et al., 2008; Rickles & White, 2006; Horton, 2010) have found very little effect of SES. Much of the variation in the reported results on the effects of tutoring programs may have resulted from the multiple research designs utilized by the researchers.

The majority of the cited studies utilized single group, pretest post test designs or quasi-experimental designs. Very few of the studies reported using a true experimental designs. While single group designs and quasi-experimental designs provide evidence of program effects, because of the nature of these designs, the evidence they provide cannot be considered conclusive. There are many rival explanations that could explain the findings. However, oftentimes in educational settings, true experimental designs are not feasible.

From the review of the literature, no studies were found examining the effectiveness of tutoring programs on the reading achievement of minority students in Mississippi rural elementary schools. This research seeks to determine whether the reading achievement level differed for elementary students who participated in a NCLB-related afterschool tutoring program in comparison to elementary students who did not participate in afterschool tutoring in a Mississippi rural school setting.
CHAPTER III

METHODOLOGY

When the NCLB act of 2001 became law, the SES program, tutoring, began receiving national attention. Research on tutoring varies. There is research on whether or not the lowest achieving students are receiving the extra help; there is research on how much money is being spent on the program and whether or not the program is being implemented properly. However, Ascher (2006) wrote, “Despite four years of supplemental services and hundreds of millions of dollars spent on out-of-school tutoring, we still know little about the effects of tutoring on student achievement, the single purported goal of the federal program” (p. 140).

Adding research to existing studies on SES tutoring and reading achievement will provide evidence of whether United States students are reaching the goal of academic proficiency. Therefore, the purpose of this study is to determine the impact of NCLB-related afterschool tutoring on reading achievement, as measured by state test results, of elementary students in a Mississippi rural school.

This chapter contains a discussion of the methodology used in the study. The study consists of a quantitative research design. Included in this chapter are descriptions of the research design, participants, instrumentation, procedures, and data analysis.
Research Design

To answer the following research questions: (1) “Is there a significant difference between the 2008 and 2009 Mississippi Curriculum Test, Second Edition (MCT2) language arts scores of elementary students who participated in a No Child Left Behind (NCLB)-related afterschool tutoring program in a Mississippi rural school setting?” (2) “Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in the NCLB-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores?” this study utilized a quantitative research design. A quantitative research design is used to test objective theories by examining the relationship among variables (Creswell, 2003). For this study a causal-comparative design was used. Fraenkel and Wallen (2003) stated that causal-comparative research “seeks to identify associations among variables” (p. 391).

Causal-comparative research attempts to determine the cause of differences that already exist between groups of individuals. Exploration of effects, exploration of causes, and exploration of consequences are three types of causal-comparative research. Causal-comparative designs have independent and dependent variables. The independent variable is considered the grouping variable, or the variable that is speculated to be the cause. The dependent variable is the variable that is being measured and compared for members for different groups.

Causal-comparative studies have their advantages and disadvantages. For example, while they do not take as much money and time as experimental studies, they
present several threats to internal validity. A major threat is subject selection bias (Fraenkel & Wallen, 2003).

This design was most appropriate for the purpose of this study because the inability to manipulate the independent variable.

Participants

The participants in this study were 3rd-6th grade students who attended a K-6 elementary school located in a rural area of Mississippi. There were 567 students enrolled in the school during the 2008-2009 school year, 260 females and 307 males. The student population was predominantly Black (547:96%) with only 3 (<1%) White students and 17 (3%) Hispanic students. All of the students attending this school qualified for free lunch.

The high rate of low-income students and the academic performance of the students attending the school resulted in the school being designated as a Title I school. Moreover, as a result of the students’ performance on the 2009 state test, the school was labeled as being on “academic watch” (MDE, 2009). This performance classification was assigned and was determined by (a) the percentage of students who performed minimum, basic, proficient, and advanced, and (b) the degree the student performance improved over time. Other performance classifications were failing, low-performance, successful, high-performing, and star (MDE, 2009).

The school’s population was somewhat similar to the rural area’s population. According to the U. S. Census Bureau (2000), the rural area’s population in 2000 of 1875 was 81.3% was Black, 18.2% White, 0.2% Asian, 1.5% Hispanic, and 0.3% mixed races.
The median income for a household was $20,968. About 29.5% of families and 34.5% of the population were below the poverty line.

The 2008 MCT2 language arts results indicated that 166 third through sixth grade students scored either minimal or basic on the assessment. Students who scored minimal “inconsistently demonstrate[d] the knowledge or skills that define basic level performance” and “require[d] additional instruction and remediation in the knowledge and skills that are necessary for success in the grade or course in the content area.

Students who scored basic “demonstrate[d] partial mastery of the knowledge and skills in the course and [would have] experience[d] difficulty in the next grade or course in the content area” (MDE, 2008a, p. 5). The students who scored basic and minimal were recommended for remediation and were given first priority to attend the school’s afterschool tutoring program. Their participation, however, was voluntary. Out of the 166 students who were recommended to attend the afterschool program, only 80 students elected to do so. The other 86 students did not participate in the afterschool program despite the recommendation for them to attend. Consequently, the afterschool attendees (80) served as the experimental group for this study and the nonparticipants (86) served as the comparison group. The composition of the experimental and comparison groups was 100% Black. As previously stated, all participants in both groups scored basic or minimal on the 2008 MCT2 assessment and they all qualified for free lunch.

Instrumentation

The MCT2 language arts scores of spring 2008 and spring 2009 were used for this study. The MCT2 language arts portion is a multiple-choice assessment with 63 reading/writing items for 3rd and 4th graders and with 73 reading/writing items for 5th and
6th graders. It measures “a student’s knowledge of grade-level curriculum as specified in the 2006 Mississippi Language Arts Curriculum Framework – Revised” (MDE, 2008a, p. 2). Specifically, the MCT2 measures the following competency in reading: “The student will apply strategies and skills to comprehend, respond to, interpret, or evaluate a variety of texts of increasing length, difficulty, and complexity” (MDE, 2008a, p. 2). All MCT2 items were written to measure skills and knowledge defined in one of three levels of performance level descriptors – basic, proficient, and advanced levels.

The MCT2 is scored by the number of questions the student answers correctly, which is called a raw score. The raw score is converted to a scale score. The scale scores range from 137 and below to 164 and above with 150 and above corresponding to the proficient and advanced levels. The scale scores provide ways of identifying the strengths and weaknesses of students and groups of student on the language arts test at each grade level. These scores also provide ways to determine individual student achievement in the skills specified for each grade-level test (MDE, 2008a).

The MCT2 is administered annually over a three-day period. The reading assessment was administered on day one, and it was an untimed test (MDE, 2009). Each 3rd and 4th grade teacher administered the MCT2 to his/her class, and each 5th and 6th grade teacher administered the MCT2 to his/her homeroom class. The teachers were the test administrators, being school personnel who had professional training in education and the state testing program. Each teacher was assigned an assisting proctor, who did not have to have professional training in education.

Several procedures were used to determine the validity and reliability of the MCT2 language arts assessment. The primary evidence for the validity of the MCT2 was
in the content validity and construct validity. Content validity was established by multiple content reviewers, one of which was a group of Mississippi educators. In addition to the multiple content viewers, the alignment of the MCT2 items to the Mississippi Curriculum Frameworks was examined through a study conducted by a team of experts who led by Norman Webb, known for the Depth of Knowledge (DOK) theory, in March 2008. The results of the study indicated that the assessment was aligned with the frameworks and the items on the MCT2 were adequately distributed among the DOK levels and the objectives of the curriculum frameworks, without overemphasizing any one objective (MDE, 2008c). The primary means of establishing construct validity relied on the Pearson correlation coefficient to provide a measure of association between the scale score and the following variables: teacher rating of the performance level and assigned performance level. The correlation coefficients for the MCT2 ranged from 0.53 to 0.65, indicating a moderate to strong correlation between MCT2 performance level, MCT2 scale scores, and teacher judgment of the students’ attainment of the content (MDE, 2008c).

An internal consistency coefficient, coefficient alpha, was the metric generally used to establish reliability for the MCT2 tests. The coefficient alpha was provided for the entire test, for each of the standards on the test, and for several demographic groups, including gender and ethnicity groups. The Language Arts tests demonstrated high reliability with Cronbach’s alpha higher than 0.84 (MDE, 2008c).
Procedures

For this study, the researcher gained consent from the elementary school’s superintendent for permission to use school data. According to MDE (2008b), education records can be used for a study as long as personal information is not used, and the data is disposed of after the study is conducted. Also, a school official does not need written parental consent to view education records as long as the person has a legitimate educational interest. However, permission has to be given in order to use data from the school system. See Appendix A.

Then, the researcher gained permission from the university’s Institutional Review Board to conduct the study. After receiving permission, the researcher collected the 2008 and 2009 language arts scores of the 80 students who participated in afterschool tutoring program and the 2008 and 2009 language arts scores of the 86 students who did not participate in the afterschool tutoring program. See Appendix B.

Data Analysis

The MCT2 language arts scores of 2008 and the MCT2 language arts scores of 2009 provided the data for the causal-comparative study. The following research questions guided the study and informed the selection of the statistical technique used to analyze the data.

1. Is there a significant difference between the 2008 and 2009 Mississippi Curriculum Test, Second Edition (MCT2) language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a Mississippi rural school setting?
2. Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in a NCLB-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores?

A paired sample t-test was used to analyze data to answer question one. Paired sample t-tests are used to determine the statistical significance between the differences of two means. There are two major assumptions associated with using paired sample t-tests. The first assumption is that of independent observations, that is the observations of the dependent variable are independent. This assumption was met. The scores of one group of participants were gathered from two assessments, one assessment in 2008 and the other in 2009. The second assumption is that of normality. Normality refers to the normal distribution of scores. Pre-analysis data screening indicated that this assumption was not met. Results of the Kolmogorov-Smirnov test indicated the assumption of normality was violated for the 2008 MCT2 scores. To meet this assumption, the data were transformed. The transformation consisted of recoding and replacing the extreme outliers in the MCT2 2008 scores. There were three extreme outliers equal to or less than 119. These outliers were re-coded and replaced with the next observed value closest to the normal distribution, 124. After the transformation, the Kolmogorov-Smirnov was computed again and the results indicated that the distribution of 2008 MCT2 scores was not normal. Once data met the assumption of normality, the paired sample t-test was used to determine if there was statistically significant difference between the 2008 MCT2
mean scores and the 2009 MCT2 mean scores of students participating in the afterschool program.

A univariate analysis of covariance (ANCOVA) was used to analyze data to answer research question two. Assumptions associated with univariate analysis of variance include: 1) assumption of independent observations, 2) assumption of normally distributed scores, and 3) the assumption of homogeneity of variance. Similar to the assumption of independence of observation with the paired sample t-test, the nature of the dependent variable resulted in this assumption being met. However, pre-analysis of data screening indicated that the assumption of normality was violated. Examination of the descriptive statistics of skewness and kurtosis revealed that the skewness equaled .658 and the kurtosis equaled 1.184 on the dependent variable for Group 1 (afterschool participants), and the skewness equaled -.120 and the kurtosis equaled 1.527 for Group 99 (nonparticipants). Both skewness and kurtosis must be zero or close to it in order to meet the assumption of normality. To meet this assumption, the data was transformed in two ways. The first transformation consisted of recoding and replacing the extreme outliers in the MCT2 2009 scores. In Group 1, there were four extreme outliers at or above 163. These extreme outliers were recoded and replaced with the observed value of 158 for normality. In Group 99, there were three extreme outliers equal to or less than 111 and three extreme outliers equal to or above 170. These extreme outliers were recoded and replaced, 111 = 125, 170 = 158. From this transformation, the skewness equaled .000 and kurtosis equaled -.307 for Group 1, and the skewness equaled -.276 and kurtosis equaled -.651 for Group 99. The assumption of normality for Group 1 was met. However, the Kolmogorov-Smirnov test revealed that the assumption of normality for
Group 99 was not quite met. In which case, the data was transformed again with the square root transformation. Howell (2002) explained that the square-root transformation not only helps equate group variances but also “compresses the upper end of a distribution more than it compresses the lower end, it may also have the effect of making positively skewed distributions more nearly normal in shape” (p. 344). As a result of the square-root transformation, the Kolmogorov-Smirnov revealed that the assumption of normality was met for both the MCT2 2009 scores for Group 1 and for Group 99. The assumption of homogeneity of variance was tested using the Levene’s Test of Equality of Error Variances. The distribution of scores on the dependent variable must have equal variances. After the square-root transformation, the Levene’s test indicated the assumption of homogeneity of variance was met. Having met all applicable assumptions, the ANCOVA was used to determine if there was a statistically significant difference in the 2009 MCT2 mean scores between the afterschool participants (group 1) and the nonparticipants (group 99), while controlling for 2008 MCT2 mean score differences. All analyses were computed at the .05 alpha level.
CHAPTER IV
RESULTS

The purpose of this study was to determine what impact the NCLB-related afterschool tutoring program has on reading achievement of elementary students in a Mississippi rural school setting, as measured by the state test results.

Two research questions guided this study, and they were:

1. Is there a significant difference between the 2008 and 2009 Mississippi Curriculum Test, Second Edition (MCT2) language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a Mississippi rural school setting?

2. Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in a NCLB-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores?

The MCT2 contains items to measure skills and knowledge of language arts, which include reading. The competency for reading is as follows: “The student will apply strategies and skills to comprehend, respond to, interpret, or evaluate a variety of texts of increasing length, difficulty, and complexity” (MDE, 2008a, p. 2).
To answer research question one, language arts scores from the MCT2 of the spring 2008 and language arts scores from the MCT2 of the spring 2009 were collected for the students who participated in the afterschool tutoring program in the 2008-2009 school year. To answer research question two, language arts scores from the MCT2 of the spring 2008 and 2009 were collected for those students who were eligible to participate in the afterschool program but did not participate. Students eligible to participate in the afterschool program were students who scored basic or minimal on the language arts portion of the MCT2 in 2008.

This chapter includes the results of the analysis of data used to answer research questions one and two.

**Research Question One**

To address research question one, “Is there a significant difference between the 2008 and 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a rural setting?” a paired sample t-test was computed on the 2008 and 2009 MCT2 scores. The paired sample t-test compares the means of two variables. It performs a test on the difference between two means (Howell, 2002). There are two assumptions associated with the paired sample t-test, the assumption of independent observations and the assumption of normality. Pre-analysis of the data screening indicated that the assumption of independent observations was met, being that the scores obtained for each individual were not influenced by other individuals in the sample. However, the assumption of normality was violated for the MCT2 2008 scores, as examined through the Kolmogorov-Smirnov test at an alpha level of 0.05, \( p = .001 \). To meet this assumption, the data was transformed. Howell (2002)
expressed, “...when we transform the data to meet one assumption, we often come closer to meeting other assumptions as well” (p. 344). The transformation consisted of recoding and replacing the extreme outliers in the MCT2 2008 scores. There were three extreme outliers equal to and less than 119. These outliers were recoded and were replaced to the next observed value closest in the normal distribution, 124. From this transformation, the Kolmogorov-Smirnov test at an alpha level of 0.05 yielded that the assumption was met, \( p = .088 \).

After the transformation, a paired-sample \( t \)-test was conducted to compare the 2008 MCT2 language arts scores and 2009 MCT2 language arts scores. Results of the analysis indicated a significant difference in the scores for 2008 and 2009 MCT2 language arts scores. The mean of the 2009 MCT2 language arts scores (\( M=143.79, SD=8.70 \)) is higher than the mean of the 2008 MCT2 language arts scores (\( M=137.81, SD=7.96 \)); \( t(79)=-6.14, p = .000 \). Based on this analysis and as an answer to research question one, there is a significant difference between the 2008 and 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a Mississippi rural school setting. These results indicate that students who participated in tutoring, improved their language arts MCT2 scores. Specifically, these results suggest that an afterschool tutoring program may have an impact on reading achievement for elementary students in a rural setting, as measured by state test results. Table I displays the complete results of the paired sample \( t \)-test for the MCT2 2008 language arts scores and the MCT2 2009 language arts scores of the participants.
Table 4.1
Paired Samples test for MCT2 2008 scores and MCT2 2009 scores

<table>
<thead>
<tr>
<th></th>
<th>Mean Difference</th>
<th>SD</th>
<th>t</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>-5.975</td>
<td>8.702</td>
<td>-6.142</td>
<td>.000</td>
</tr>
</tbody>
</table>

**p<.05

Research Question Two

To address research question two, “Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in a NCLB-related afterschool tutoring program in a Mississippi rural setting, while controlling for 2008 MCT2 language arts scores?” a univariate analysis of variance was computed on the 2009 MCT2 scores covarying the effect of the MCT2 2008 scores. A univariate analysis of variance tests for differences among or between two or more sample means (Howell, 2002). Assumptions associated with univariate analysis of variance include: 1) assumption of independent observations, 2) assumption of normally distributed scores, and 3) the assumption of homogeneity of variance. Pre-analysis of data screening indicated that the assumption of independent observations was met. However, the assumption of normally distributed scores was violated. Examination of the descriptive statistics of skewness and kurtosis revealed that the skewness equaled .658 and the kurtosis equaled 1.184 on the dependent variable for Group 1 (participants),
and the skewness equaled -.120 and the kurtosis equaled 1.527 for Group 99 (nonparticipants). Both skewness and kurtosis must be zero or close to it in order to meet the assumption of normality. To meet this assumption, the data was transformed in two ways. The first transformation consisted of recoding and replacing the extreme outliers in the MCT2 2009 scores. In Group 1, there were four extreme outliers at or above 163. These extreme outliers were recoded and replaced with the observed value of 158 for normality. In Group 99, there were three extreme outliers equal to or less than 111 and three extreme outliers equal to or above 170. These extreme outliers were recoded and replaced, 111 = 125, 170 = 158. From this transformation, the skewness equaled .000 and kurtosis equaled -.307 for Group 1, and the skewness equaled -.276 and kurtosis equaled -.651 for Group 99. The assumption of normality for Group 1 was met, \( p = .200 \). However, the Kolmogorov-Smirnov test at an alpha level of 0.05 yielded that the assumption of normality for Group 99 was not quite met, \( p = .046 \). Another transformation was conducted, and it was the square-root transformation. The researcher squared the largest score on the test (175) plus one and subtracted that score (176) from the scores of the first transformation. Howell (2002) explained that the square-root transformation not only helps equate group variances but also “compresses the upper end of a distribution more than it compresses the lower end, it may also have the effect of making positively skewed distributions more nearly normal in shape” (p. 344). From the square-root transformation, the Kolmogorov-Smirnov test at an alpha level of 0.05 yielded that the assumption was met, the MCT2 2009 scores for Group 1 (participants), \( p = 0.095 \), and for Group 99 (nonparticipants), \( p =.200 \). The assumption of homogeneity of variance was tested using the Levene’s Test of Equality of Error Variances. The
distribution of scores on the dependent variable must have equal variances. With the square-root transformation, the Levene’s test with an alpha level of 0.05 indicated the assumption was met, $p = .083$.

After the transformation, a univariate analysis of variance was conducted on the MCT2 2009 scores covarying out the effect of the MCT2 2008 scores. The univariate analysis of variance indicated the main effect of Group was not significant using a critical alpha of 0.05, $F(1, 165) = .532, p = .467$, partial eta squared = .003. The covariate of MCT2 2008 scores significantly influenced the dependent variable of the MCT2 2009 scores, $F(1, 165) = 22.52, p = .000$, partial eta squared = .121. The adjusted means for 2009 MCT2 scores for the participants (M=5.58) and nonparticipants (M=5.69) were provided. Based on this analysis and to answer research question two, there is not a significant difference between 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in a NCLB-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores. This result suggests that there was no effect for the afterschool tutoring program. Specifically, the 2009 MCT2 scores of the students who did not participate in tutoring were not different than the 2009 MCT2 scores of students who did participate in tutoring after covarying out the effect of the 2008 MCT2 scores. Table 2 displays the complete results of the univariate analysis of variance and the adjusted and unadjusted group means for the 2008 and 2009 MCT2 language arts scores.
Table 4.2

Tests of Between-Subjects Effects

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
<th>n2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between treatments</td>
<td>20.747</td>
<td>2</td>
<td>10.374</td>
<td>11.335</td>
<td>.000</td>
<td>.122</td>
</tr>
<tr>
<td>Intercept</td>
<td>71.224</td>
<td>1</td>
<td>71.224</td>
<td>77.825</td>
<td>.000</td>
<td>.323</td>
</tr>
<tr>
<td>MCT2 2008</td>
<td>20.608</td>
<td>1</td>
<td>20.608</td>
<td>22.518</td>
<td>.000</td>
<td>.121</td>
</tr>
<tr>
<td>Group 1</td>
<td>.486</td>
<td>1</td>
<td>.486</td>
<td>.532</td>
<td>.467</td>
<td>.003</td>
</tr>
<tr>
<td>Group 2</td>
<td>149.176</td>
<td>163</td>
<td>.915</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5451.000</td>
<td>166</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. R Squared = .122 (Adjusted R Squared = .111)

Table 4.3

Adjusted and Unadjusted Means

<table>
<thead>
<tr>
<th>Adjusted and Unadjusted Group Means for the 2008 and 2009 MCT2 scores</th>
<th>Adjusted M</th>
<th>Unadjusted M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (participants)</td>
<td>5.58</td>
<td>5.61</td>
</tr>
<tr>
<td>Group 2 (nonparticipants)</td>
<td>5.69</td>
<td>5.67</td>
</tr>
</tbody>
</table>

Summary

Chapter 4 discussed the results of the analysis of data that was used to answer the two research questions for this study. Data were analyzed using a Paired-samples $t$ Test and an ANCOVA. The Paired-samples $t$ Test was used to determine if there was a
statistically significant difference between the 2008 language arts MCT2 and the 2009 language arts MCT2 scores for students who participated in the tutoring program. The results from this analysis indicated that the 2009 language arts MCT2 scores of students who participated in the tutoring program were statistically significantly higher than their 2008 language arts MCT2 scores. Data collected to answer research question two was analyzed using an ANCOVA. Research question two examined whether there was a difference between the 2009 language MCT2 scores for students who participated in the tutoring program and similar students who did not participate in the tutoring program while controlling for pretest differences. Specifically, the ANCOVA was used to detect differences in 2009 language MCT2 while controlling for the 2008 language MCT2 scores. The results of this analysis indicated that there were no statistically significant differences in the 2009 language MCT2 scores between students who participated in the tutoring program and similar students who did not participate in the tutoring program. Therefore it appears that there were no effects of the tutoring program on the 2009 language arts MCT2 scores of students who participated in the program. Nevertheless, regardless of participation status of the students, the mean 2009 language arts MCT2 score were higher than the mean 2008 language arts MCT2 score.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to examine the impact of a NCLB-related afterschool tutoring program on reading achievement, as measured by state test results, of elementary students in a Mississippi rural school setting. The study was guided by two research questions: (1) Is there a significant difference between the 2008 and 2009 Mississippi Curriculum Test, Second Edition (MCT2) language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a Mississippi rural school setting? (2) Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in a NCLB-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores? The chapter is divided into summary, conclusions, and recommendations.

Summary

Chapter I served as an introduction to this study. The purpose of this study was to examine the impact of a NCLB-related afterschool tutoring program on reading achievement, as measured by state test results, of elementary students in a Mississippi rural school setting.
For the purpose of this study, the following research questions were used to guide the study:

1. Is there a significant difference between the 2008 and 2009 Mississippi Curriculum Test, Second Edition (MCT2) language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a Mississippi rural school setting?

2. Is there a significant difference between the 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program and those students who did not participate in a NCLB-related afterschool tutoring program in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores?

Chapter II included a review of the literature that examined the effectiveness of tutoring programs. Based on this review of literature, the efficacy of tutoring programs has not been established. While several studies (Chappell et al., 2010; Chatterji et al., 2006; Islas et al., 2008; Mahoney et al., 2005; Mangru, 2008; Miller, 2009; Presnell, 2009; Russell et al., 2009; Vandell et al., 2007; Veerkamp et al., 2007; and Ysseldyke et al., 2007) reported positive academic gains for students participating in tutoring programs, other studies (Dynarksi et al., 2003; Horton, 2010; Munoz et al., 2008; Tan et al., 2007; and Zimmer et al., 2010) indicated that the effects of participating in tutoring programs were very small or negative. Much of the variation of tutoring effects could be attributed to the research designs used to examine the effects. Most of the cited studies utilized single group, pre-test—posttest designs, causal comparative designs or quasi-experimental designs. The review of the literature did not reveal any true experimental
designs. However, the lack of true experimental designs reported in the literature was not surprising. The nature of true experimental designs makes them difficult to employ in educational research. Nevertheless, the review of literature supported the need to conduct this present study.

Chapter III explained the methodology used to conduct this study. The research design selected was the causal-comparative study. This design was appropriate because this study attempted to find differences that already existed. The groups were already formed, and the results were available. Archival data such as MCT2 language arts scores were gathered from Coila Elementary School for this study. The scores were collected from the cumulative folders of students who had already taken the test in spring 2008 and in spring 2009. A letter asking permission to use school data was approved by the school’s superintendent, and it was approved also by Human Research Protection (IRB) (Appendix B). Information regarding which students took afterschool tutoring was provided by the counselor. Therefore, the sample of this study was defined as a convenience sample. Specifically, this study was conducted to determine whether the MCT2 language arts scores would increase or decrease for students who participated in a year-long NCLB-related afterschool tutoring program and whether the MCT2 language arts scores would increase or decrease for participants compared to nonparticipants.

Chapter IV presented the results to the study’s research questions. The data was analyzed in two ways. The answer to the first research question—“Is there a significant difference between the 2008 and 2009 MCT2 language arts scores of elementary students who participated in a NCLB-related afterschool tutoring program in a Mississippi rural school setting?”—is yes. Based on the statistical analysis using a paired sample t-test, the
mean language arts score increased from 137.81 \((sd = 7.96)\) on the 2008 MCT2 to 143.79 \((sd = 8.70)\) on the 2009 MCT2. The difference between the two means is statistically significant at the .05 level \((t = -6.14, df = 79)\).

The answer to the second research question—“Is there a significant difference between the 2009 MCT2 language arts scores of participants of the NCLB-related afterschool tutoring program and the 2009 MCT2 language arts scores of nonparticipants in a Mississippi rural school setting, while controlling for 2008 MCT2 language arts scores?”—is no. Based on a statistical analysis using an univariate analysis of variance, the univariate analysis of variance revealed no significant difference, \(F(1, 165) = .532, p = .467, n^2 = .003\).

Chapter V concluded the study by providing a summary, a conclusion, and a recommendation section for further research. Quantitative results from the study indicated that the mean language arts score of participants improved, and the mean language arts score of nonparticipants was slightly higher than the mean language arts score of the participants. Also, quantitative findings indicated that even though participants’ mean language arts score improved, nonparticipants’ mean language arts score improved. Recommendations for further research include conducting an experimental research design on afterschool tutoring and reading achievement in a rural school or rural schools, analyzing parental involvement while conducting research on afterschool tutoring and reading achievement in rural schools, and observing a regular classroom setting with comparison with an afterschool tutoring while conducting research on afterschool tutoring and reading achievement in rural schools.
Conclusions

The conclusions that can be drawn from the results of this study are limited by the research design employed in this study. This study employed a causal comparative design because of the inability to manipulate the independent variable, which in this study was the tutoring program. While all students who scored in the basic and minimal range on the 2008 language arts MCT2 test, only 80 of the 166 students chose to participate in the afterschool program. Therefore, program participation or nonparticipation was self-selected. Self-selected group membership could have resulted in differences between the groups other than the independent variable. When groups are different initially, it is difficult to determine program effects. In an attempt to control for group differences, two methods of analysis were employed.

The first method used to control for initial group differences was to compare program participants to themselves. The 2008 language arts MCT2 scores for participants were compared to their 2009 language arts MCT2 scores. While this comparison yielded results that indicated the participants performed better after tutoring program participation, there are too many rival explanations for the change in scores to attribute the changes solely to the tutoring program. For example, 2009 represented the second year of students completing the MCT2 assessment. The change in scores may be attributed to maturation effects. That is, students had more experience with the assessment in 2009 than they did in 2008. Another plausible explanation for the increase in scores from 2008 to 2009 could be the result of changes in school-wide instructional practices. Nevertheless, the only conclusive evidence that resulted from the analysis of
data for the first research question was that students who participated in the tutoring program scored higher on the 2009 MCT2 assessment than they did on the 2008 MCT2 assessment. Moreover, the results of data analysis for research question one are consistent with the findings reported by Moody (2007) who also employed a single group design to examine the effectiveness of tutoring programs.

The second method that was used to equate groups was using an ANCOVA to compare MCT2 scores for tutoring program participants and MCT2 scores for students who did not participate in the tutoring program. With the ANCOVA, initial group differences observed with the 2008 MCT2 scores were statistically modified. With the ANCOVA, 2009 MCT2 scores were statistically modified to adjust for initial group differences observed on the 2008 MCT2 scores. Specifically, the 2009 MCT2 scores served as the dependent variable and the 2008 MCT2 scores served as the covariate. Unlike the results reported when participants were compared to themselves, the analysis conducted to compare program participants to nonparticipants yielded results that suggested there were no differences in MCT2 scores of the two groups after controlling for the 2008 MCT2 scores. Based on the results from this analysis, there was no effect for tutoring program participation. However, similar to the results for the first research question, there are rival explanations for this finding as well. For example, students who chose not to participate in the tutoring program may have received tutoring from other sources not identified. Nevertheless, the findings for research question two are consistent with the findings reported by Dreyer (2010), Horton (2010), where they found no effect for program participation.
While the results of data analysis for research question one suggested a positive effect of program participation, the analysis of data for research question two provided evidence that would suggest the difference found in scores the 2008 and 2009 MCT2 scores was a result of an extraneous variable because the 2009 MCT2 scores of participants and nonparticipants was not statistically different.

Therefore, the only finding from this study that is conclusive is that the mean 2009 MCT2 score of all 166 students (participants and nonparticipants) was higher than the mean 2008 MCT2 score of all 166 students.

**Recommendations**

There is still a need to improve reading skills of the nation’s students. According to the *Nation’s Report Card/Reading 2009*, the average score (220) of fourth-grade students in public schools in the United States in 2009 equaled the average score (220) of fourth-grade students in public schools in the U.S. in 2007. In relation to this study, Black students who attended U. S. public schools had an average score (204) that was 25 points lower than that of White students who attended U. S. public schools (229) in 2009. In 2007, Black students who attended U. S. public schools had an average score (203) that was 27 points lower than that of White students who attended U. S. public schools (230). Also, students who were eligible for free/reduced price school lunch, an indicator of low income, had an average score of 206 in 2009, which is 24 points lower than the national average.

To evaluate Mississippi’s progress in reading performance, the *Nation’s Report Card/Reading 2009* provided the following results. The average score (211) of fourth-grade students in Mississippi was lower than the average score (220) of students who
attended public schools in the nation as a whole. The average score (211) was not significantly different from the average score in 2007 (208). The percentage of students in Mississippi who performed at or above the NAEP Proficient level was 22% in 2009, and this percentage was not significantly different from that in 2007 (19%). Also, the percentage of students in Mississippi who performed at or above the NAEP Basic level was 55 percent in 2009, and this percentage was not significantly different from that in 2007, 51 percent (USDOE, 2010, Overall Results Section, ¶ 1 -2, 4 -5). In relation to this study, Black students had an average score that was 27 points lower than that of White students in 2009. Also, students who were eligible for free/reduced price school lunch had an average score that was 24 points lower than that of students who were not eligible for free/reduced-price school lunch (USDOE, 2010, Score Gaps for Student Groups, ¶ 2, 4). These results suggest that remediation is needed. If tutoring is going to be the answer to improving academic achievement, further research is definitely needed. Therefore, based on the findings of this study, the following recommendations are made by the researcher:

1. It is recommended that further research be conducted on afterschool tutoring and reading achievement in a rural school through an experimental research design. Sunderman (2006) expressed the following:

   Whether supplemental educational services ultimately help or hurt the achievement of disadvantaged students is an empirical question with deep implications for educational equity. For now, we need better evidence before we use limited public dollars to
support supplemental educational services providers on a large scale. (p. 122)

2. It is recommended that further research be conducted with more than one rural school to examine the impact of after-school tutoring on reading achievement. Barley and Wegner (2010) listed three factors found in studies that indicate a successful SES program: 1) believing in the value of the program, (on the part of district and school personnel), 2) building close relations with providers, and 3) reaching out to parents to provide the support and information they needed in enrolling and monitoring their children (p. 5).

3. It is recommended that further research should include analyses of parental involvement while conducting research on afterschool tutoring and reading achievement. Parental involvement in schoolwork and homework helps increase academic achievement among students.

4. It is recommended that further research should include observations of afterschool tutoring classes and regular classroom settings. Detailed descriptions may reveal the differences and similarities in the two learning environments while conducting research on afterschool tutoring and reading achievement.

5. It is recommended that more funding be supplied to rural schools from the local, state, and federal levels to monitor the quality of after-school tutoring programs.
REFERENCES


APPENDIX A

LETTER TO SUPERINTENDENT
I am Sharone S. Lacy, a Doctoral Student currently researching NCLB-related tutoring and reading achievement at Mississippi State University. This study, entitled “The Impact of After-school Tutoring on Reading Achievement of Elementary Students in a Rural Setting”, is to find any difference in reading scores, as measured by state test results, of students who participated in after-school tutoring to those students who did not participate in after-school tutoring. NCLB-related tutoring programs for improving student achievement are still being questioned and are cause for concern. The aims of this defining process will include archival data.

There will not be any subject participation in this study. Therefore, an informed consent is not needed for this study. However, permission is needed to utilize data that already exists within the school system.

With your permission, you will be helping researchers to explore one of many aspects in education. Your cooperation will be highly appreciated. Please sign the appropriate line below.

I permit ______SHARONE S. LACY_________ to conduct her study in my school.

[Signature]

I do not permit ___________________________ to conduct her study in my school.

[Signature]
APPENDIX B

IRB LETTER
July 12, 2010

Sharone Lacy
273 County Road 259
Columbia, MS 38923

RE: IRB Study #10-195: The Impact of After-school Tutoring on Reading Achievement of Elementary Students in a Rural Setting

Dear Ms. Lacy:

The above referenced project was reviewed and approved via administrative review on 7/12/2010 in accordance with 45 CFR 46.101(b)(4). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at any time during the project period, to observe you and the additional researchers on this project.

Please note that the MSU IRB is in the process of seeking accreditation for our human subjects protection program. As a result of these efforts, you will likely notice many changes in the IRB’s policies and procedures in the coming months. These changes will be posted online at http://www.orc.msstate.edu/human/review.php.

Please refer to your IRB number (#10-195) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at cwilliams@research.msstate.edu or call 662-325-6220.

Sincerely,

Christine Williams
IRB Compliance Administrator