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A Comparative Analysis of TCAP Reading-Language Arts Scores Between Students Who Used

Accelerated Reader and Students Who Used Sustained Silent Reading

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A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Education

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by

Janie Brown

May 2008

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ABSTRACT

A Comparative Analysis of TCAP Reading-Language Arts Scores Between Students Who Used *Accelerated Reader* and Students Who Used Sustained Silent Reading

by

Janie Brown

The purpose of this study was to determine if a difference existed between TCAP scores of students who used the *Accelerated Reader* (AR) program and students who used Sustained Silent Reading strategy (SSR) as measured by the Tennessee Comprehensive Assessment Program (TCAP). The variables of grade level (6th, 7th, and 8th), gender, and socioeconomic status (free- or reduced- price meals program) were considered. The population consisted of 108 6th graders who attended a Cocke County school or a McMinn County school in Tennessee. Data were obtained from the TCAP for 3 consecutive years beginning in 2004-2005 for students who completed the tests all 3 years. A *t* test for independent samples and analysis of variance (ANOVA) were used to determine if there was a difference on associations and interactions between variables.

The researcher's investigation of the reading achievement of students who used *Accelerated Reader* and those who used Sustained Silent Reading should assist educators in planning for supplemental reading instruction. The information gathered from this research might be beneficial to other school systems when determining which method of reading instruction to use to increase students' reading achievement.

The findings indicated the students who used the *Accelerated Reader* program had an increase in reading-language arts scale scores for 3 consecutive years. The findings of this study also

revealed that gender had no significance on student achievement for 6th graders. The findings did indicate a significant interaction between gender and type of program used during 7th and 8th grades. Females who used the *Accelerated Reader* program outscored males who used the program. The findings of this study also determined that socioeconomic status had no association with TCAP scores during the 6th, 7th, or 8th grades.

DEDICATION

I want acknowledge my husband Tip Brown for his continued support during a grueling 3 years. He has continuously encouraged me to keep on task and not give up. He has been one of my most devoted supporters. He has maintained confidence in me when I had self doubts.

My sister Peggy Proffitt is my best friend. She is a wonderful sister, a good listener, and so understanding and kind.

My two nephews, Ricky Hartsell and Jamie Proffitt, are more like my own sons. They bring out the best in me. I am grateful to be related to such wonderful young men. They always make me proud.

My nephew Zachary Hartsell understood when I was unable to spend quality time with him during his summer visits from Wisconsin. He has endured vacations with me when my only concerns were of completing some project for class.

My nephew Bo Proffitt is 11 months old and I hardly know him. I look forward to spending time getting re-acquainted with him.

My friend Linda Powell has gone on too many cruises without me. I have neglected our friendship for too long.

My school colleague Charlotte Cooper has covered for me at school when I needed to leave for the day.

My cousin Doris Jean Clark passed away during this process. She had been a dedicated teacher for 42 years. She was so inspiring because she loved children and loved to teach.

I would also like to acknowledge all those dedicated teachers who have such a huge influence on students.

ACKNOWLEDGMENTS

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CHAPTER 1

INTRODUCTION

The more that you read,
the more things you will know.
The more that you learn,
the more places you'll go.
~ Seuss (1978)

Teachers, administrators, members of boards of education, and officials from departments of education are constantly searching for the best practices for students' achievement. The *No Child Left Behind Act,* signed into law by President Bush in 2002, is a primary example of the initiative taken by the federal government to ensure that all students are successful. State and national groups increasingly are documenting and sharing best practices-- programs and strategies that address the critical issues of parent involvement and teacher quality and effectiveness (Furger, 2005). As educators struggle to develop more effective strategies to increase students' achievement, many schools are finding it difficult to meet the mandates of *No Child Left Behind*. Insufficient funding and the cost of implementing the program were two of the complaints most often made by educators and state officials. Popham (2004) asserted that most states were trying to comply with the requirements of *No Child Left Behind* so that more federal funds would be directed to their school districts.

The implementation of the *No Child Left Behind Act* has changed the process of evaluating public schools. Schools are now evaluated based on how well students score on standardized achievement tests. Before the *No Child Left Behind Act*, administrators were evaluated based on their ability to manage day-to-day operations of the school system and academic achievement of students based on individual strengths and weaknesses. Today evaluations of administrators, principals, and teachers are based substantially on students' ability to perform well on the achievement tests. The *No Child Left Behind Act* is reportedly based on four pillars: (a) accountability for results, (b) an emphasis on doing what works based on

scientific research, (c) expanded local control and flexibility, and (d) expanded parental options (*Four Pillars of NCLB*, 2006, n. p.).

The accountability for results includes Adequate Yearly Progress (AYP). AYP is the minimum level of improvement that school districts must achieve every year. According to Popham (2004), AYP is the feature of *No Child Left Behind Act* that could lead to labeling of schools as failing (p. 21). Most educators would likely agree that not all students will be successful in the school setting. However, the *No Child Left Behind Act* requires that all children be proficient by the school year 2013-2014. Although this idea is politically motivated, proponents of *No Child Left Behind* have found it unrealistic to expect that every student will attain the "proficient" level on standardized achievement tests. Popham, a former professor at UCLA and noted author, is also a nationally recognized expert on educational testing and evaluations. He asserted that student's performance was "not an accurate reflection of a teacher's instructional effectiveness" (p. 101). In his book *America's Failing Schools,* Popham contended that a better way to evaluate schools would be to include standardized testing along with affective data, samples of students' work, and non-test academic indicators (p. 102). According to Popham, that combination of methods would yield a more effective evaluation of a school.

There are both critics and supporters of the *No Child Left Behind Act*. One of the main criticisms has been the lack of federal funding. Many complain that the government requires higher standards without the financial support needed for additional staff and materials. Some critics contend that teachers are teaching to the test for fear of not meeting AYP. Others have expressed their belief that emphasis should be placed on a well-rounded education rather than on the results of one test. However, in spite of many negative comments, *No Child Left Behind* might have improved the quality of education in America. Providing highly qualified teachers has encouraged many educators to pursue higher degrees. Holding teachers and school systems accountable for student achievement might have increased the use of methodologies that are scientifically based. With proper funding from the government and support from educators, the *No Child Left Behind Act* might be able to change the quality of education in America.

Parental involvement has become increasingly important. Schools encourage parents to become involved in their children's education during the early years and to continue into the later years. Students have been influenced by the importance their parents place on education.

Reading is an essential skill necessary for success in an educational setting as well as in the workplace. The aim of educators must be continued improvement in reading achievement. The National Assessment of Educational Progress (NAEP), frequently referred to as the Nation's Report Card, is a national measure of students' performance and how their performance has been changing over time (U.S. Department of Education, 2006). According to the 2005 National Assessment of Educational Progress (U.S. Department of Education), average reading scores have improved slightly in grades four and eight with a two percentage-point increase from 1992 through 2005. Klecker (2005) studied the differences in mean scale scores for gender in grades 4, 8, and 12. She compiled data using the National Assessment of Educational Progress (NAEP) dataset. Klecker compared the differences in scores from 1992, 1994, 1998, 2000, 2002, and 2003. The sample population from the NAEP dataset included 4th-, 8th-, and 12th-grade students from schools across the country. After examination of the tables created using the NAEP data tool, Klecker reported that the differences in mean scale for gender were statistically significant at each grade level and for each year. Females outscored the males at each grade level every year. Although the Nation's Report Card has indicated a small increase in reading achievement from the basic level to the proficient level, more work must be done to improve the quality of reading instruction in America.

Most educators would agree that the more a student reads, the more it increases his or her vocabulary and the more successful he or she will be in other classes. According to Snow, Burns, and Griffin (1998), literacy also plays a significant role in students' social and economic lives. Three levels of achievement described in the *No Child Left Behind Act* are basic, proficient, and advanced. As stated in the Act (NCLB, 2005), every child should be reading on grade level by third grade. According to these projections of academic achievement standards, all students should be proficient by the school year 2013-2014 (Popham, 2004).

Over the years, educational systems have spent millions of dollars to upgrade technology in classrooms. Numerous programs and software packages have been purchased without adequate consideration of how they would be used in classrooms. Those additions to the classrooms have relied primarily on the teachers' dedication to train themselves in the proper use of the products. Without proper teacher training, many costly technology programs gather dust in corner closets. In order to make such products an integral part of instruction, educational systems must provide essential training for all teachers.

Teachers are continuously developing methods for encouraging their students to become avid readers. They constantly search for ways to motivate students to read. Two programs being used to promote reading in elementary schools today are the *Accelerated Reader* program published by Renaissance Learning (1986) and the Sustained Silent Reading strategy introduced in the 1960s by Lyman Hunt (American Library Association, 2006).

Background of the Study

Accelerated Reader is a computerized program that was designed by Judi Paul in 1986 (Renaissance Learning, 2006). As a former teacher, she began writing quizzes at her home to help her own children develop a lifelong love of reading. With the help of her husband, Terrence Paul, who himself worked in technology, the *Accelerated Reader* program was born. The *Accelerated Reader* Desktop-Server version is expensive. The price for making the program available to 200 students is $2,129. This includes 1,000 predefined quizzes. Increasing the number of students costs an additional $149 for every 50 students added to the database.

Accelerated Reader was developed as a tool to assist teachers with management of a literature-based reading program. The student reads a book, takes a test, and receives immediate feedback. Teachers are able to view the results and print a variety of diagnostic reports. Each book is assigned a specific reading level based on the Flesch-Kincaid readability index. Readability formulas use objective measurements to analyze text and predict which materials can be understood by the individual readers (Renaissance Learning, 2006). These readability

formulas assist teachers in matching books to students' reading abilities. The *Accelerated Reader* program assigns points to each book based on its length and reading level. The following formula has been used to determine the number of points assigned to each book: *Accelerated Reader* points = (10 + reading level) x words in book divided by 100,000 (Renaissance Learning, 2006). For example, if a book is on a 3.9 level and has 22,123 words (307,509.7) when divided by 100,000 would equal 3.0 points.

Renaissance Learning (2006) has claimed that the purpose of the *Accelerated Reader* program was to motivate students to read and to provide teachers with accurate, detailed information that could be used to monitor progress, personalize instruction, and build a lifelong love of reading and learning. According to the Renaissance Learning website, over 60,000 schools nationwide were using the program. In 2006, Reading Renaissance boasted a large body of scientific research, including experimental and quasi-experimental research, to support the effectiveness of the *Accelerated Reader* program. Scientifically based research, reportedly is research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs (Renaissance Learning). The *No Child Left Behind Act* requires instructional programs to be grounded in research that is scientifically based. *No Child Left Behind* puts emphasis on determining which educational practices and programs have been proven effective through rigorous scientific research. Federal funding has been targeted to support those programs and teaching methods that work well to advance student learning and achievement (*Four Pillars of NCLB*, 2006). Renaissance Learning reported that 181 studies had been conducted on their products, including 144 by independent researchers, professors, school administrators, and teachers.

Renaissance Learning (2006), the publishers of the *Accelerated Reader* program, reported that students using *Accelerated Reader* performed better in all academic areas than did students not using the program. They also reported that test scores in schools using *Accelerated Reader* soared. Some of these studies were conducted by people who were directly associated with Renaissance Learning. Researchers such as Vollands, Topping, and Evans (1999) have

documented gains in reading scores even without full implementation of the program. Topping and Sanders (2000) found that students experienced significant achievement gains when they averaged at least 85% correct on *Accelerated Reader* quizzes. Peak and Dewalt (1994) found that fourth- through eighth-grade students made significant gains in reading when using *Accelerated Reader*. Other researchers reported that the degree of teacher training and implementation could affect the degree of success in motivating readers and in improving reading achievement (Chenoweth, 2001; Topping & Sanders). Renaissance Learning reported that many scientific studies, both experimental and quasi-experimental, had supported the effectiveness of the *Accelerated Reader* program. Although Renaissance Learning boasted of many studies supporting the use of *Accelerated Reader*, only 9 of the 61 independent studies used quantitative experimental or quasi-experimental designs. Of those nine studies, only five were considered peer-reviewed research. However, independent researchers (Bork, 1999; Gibson, 2002; Holman, 2002) reported finding no statistically significant differences in test scores between students using the *Accelerated Reader* program and those who used other approaches such as the traditional basal reader.

School A, located in Tennessee, purchased the *Accelerated Reader* program in 1996. As have numerous other schools in the country, this elementary school has been using the *Accelerated Reader* program for approximately 10 years. A representative from Renaissance Learning provided extensive inservice training for teachers. One teacher who achieved the master teacher status provided additional training for teachers. Master teacher status can be obtained by enrolling in a Renaissance 18-week certification program for a one-time fee of $25. The applicant is required to meet specific criteria established by Renaissance Learning. According to Renaissance Learning (2006), this certification level identifies a master teacher who has dramatically improved students' reading achievement.

School A was a kindergarten- through eighth-grade school located in Tennessee with 46% of its 745 students considered economically disadvantaged. Those disadvantaged students qualified for the free- or reduced-price meals program. Of the 745 students, 7.37% qualified for

speech, 1.88% for the gifted program, and 3.63% used resource services. At school A, the *Accelerated Reader* program was available for teachers in kindergarten through eighth-grade to use as a supplement along with the regular reading program. The regular instructional reading program included the use of *Scott Foresman* reading in sixth grade and *McDougal* literature in seventh and eighth grades. After speaking with the director of testing, there seemed to be little or no consistency regarding the methods of using the *Accelerated Reader* program at School A.

In implementing the *Accelerated Reader* program, some teachers at School A required a designated number of library books to be read over a specific time such as a 6-week grading period. Other teachers assigned a particular genre and reading level. Many teachers used incentives and rewards to motivate students to read, whereas others assigned grades for reading *Accelerated Reader* books. Many of the teachers used the program as a method to encourage supplemental reading by their students. A number of teachers used the STAR Reading program to test students' levels, whereas others assigned grade-level books.

The STAR Reading program is a component of the *Accelerated Reader* package produced by Renaissance Learning. The STAR Reading program was developed by Renaissance Learning as a means of rating a student's performance compared with scores of students nationwide. The acronym STAR once stood for "Standardized Test for the Assessment of Reading"; however, because the company now has STAR Literacy and STAR Math, the acronym is no longer used. The STAR Reading program provides a diagnostic test that reports Grade Equivalency (GE), Instructional Reading Level (IRL), Normal Curve Equivalency (NCE), Percentile Rank (PR), Scale Score (SS), and Zone of Proximal Development (ZPD). All of these reports are based on national norms (Renaissance Learning, 2006). The test can be completed in approximately 10 minutes with immediate results. After a student takes the STAR test, the computer generates a personalized letter to the students with a summary of each of the reports according to that specific student's results. Teachers may use those results to assist students in selecting appropriate books for individual reading levels and to measure the levels of reading gains throughout the year.

School B was located in a rural area of McMinn County, Tennessee, and was comparable in demographics to school A. Both schools served kindergarten through eighth-graders and had an average enrollment of 650 for school B to 745 students for school A. Both school B and school A had similar percentages of economically disadvantaged students (41% to 48%). School A had 9% minority students as compared to 6% at School B. At both School A and School B, the minority students were African American, Hispanic, and of Asian decent. School B had 2.58% of its students who qualified for speech, .3% were gifted, and 7.75% qualified for resource services. The regular reading instructional program at School B consisted of *Prentice Hall* Literature and *McDougal* literature for sixth graders. Seventh and eighth graders used *Prentice Hall* for regular classroom instruction. School B used the Sustained Silent Reading strategy as a method to encourage voluntary reading for pleasure and to increase reading performance. Students in grades six through eight practiced Sustained Silent Reading for 30 minutes daily in School B. When applying the Sustained Silent Reading approach, teachers designated 30 minutes during the day when all students stopped whatever they were doing to read silently. The students were allowed to choose any material of interest to them. Level of difficulty was of no concern as long as the students were reading. During this time, they focused on the materials they had chosen to read. The teacher also read throughout the 30 minutes and monitored the student readers. Unlike *Accelerated Reader*, Sustained Silent Reading has no assessment component. The goal of both the *Accelerated Reader* program and Sustained Silent Reading is that the students will develop a lifelong love of reading while increasing their comprehension skills and improving their achievement in reading.

Drop Everything and Read (DEAR), Uninterrupted Sustained Silent Reading (USSR), and Free Voluntary Reading (FVR) are similar to the *Accelerated Reader* and Sustained Silent Reading strategy. Each program provides additional tools for educators to enhance the in-school reading programs. The American Library Association (2006) reported that Sustained Silent Reading was proposed in the 1960s by Lyman Hunt of the University of Vermont. According to Trelease (2006), Robert and Marlene McCracken later formulated

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recommendations to structure the Sustained Silent Reading strategy. Those recommendations were:

1. students ought to read aloud to themselves for a specific amount of time;

2. each child should choose his or her own book, magazine, or newspaper;

3. the teacher or parent must read also in order to lead by example;

4. no reports are required of the student; and

5. no records are kept. (n. p.)

According to Jensen (2002), Sustained Silent Reading is still being used in school systems today 4 decades after Hunt first introduced the program. With this program, students are provided a specific amount of uninterrupted time to read materials of their choice. Three important features of the Sustained Silent Reading strategy are self-selection by the student, role modeling by the teacher, and no summative testing for the student. The teacher assigns a specific time each day for the students to choose a book to read for a predetermined block of time. Both the teachers and students read without interruptions. Allowing students to select reading materials might encourage more interest and motivation. By modeling proper reading techniques, the teacher might encourage the silent readers to develop better reading skills during the Sustained Silent Reading time as well as reinforce the value of reading. Sustained Silent Reading allows lower achievers to move at their own pace without embarrassment. Because students are not assessed during this reading time, readers might feel less threatened and learn to enjoy the pleasure of reading.

Several researchers (Higgins, 1982; Owens, 2003; Reedy, 1994) have reported that Sustained Silent Reading was an effective means of increasing reading speed, had a positive effect on reading achievement, and students involved in the program had a more positive attitude toward reading. The popularity of Sustained Silent Reading has been enhanced because there are no costs involved in implementing the program.

Statement of the Problem

Because schools spend thousands of dollars to add the *Accelerated Reader* program to their curricula, it is important to determine if using *Accelerated Reader* is associated with better results than using Sustained Silent Reading, a strategy that involves no cost to school systems but requires time set aside daily to read without interruption. Reading is an essential skill necessary for success in other subject areas. In order for students to become proficient in reading, teachers, administrators, and state officials must continue to improve reading instruction to close the achievement gap. Because the *No Child Left Behind Act* evaluates the success or failure of school districts based on their students' achievement on standardized tests, school officials are purchasing research-based programs as one method to enhance the reading competencies of lower achievers. The challenge has been to determine which program can achieve the greater increase in achievement gains. Although the *Accelerated Reader* program has claimed that scientific research supports its success, few studies exist that support the success of Sustained Silent Reading as a method of increasing student achievement in reading-language arts. There is a need to determine what if any, differences exist in the reading achievement of students between those who used *Accelerated Reader* with those who used Sustained Silent Reading and reading achievement over a 3-year period. The purpose of this study was to determine if a difference existed between TCAP scores of students who used the *Accelerated Reader* (AR) program with other students who used Sustained Silent Reading strategy (SSR) as measured by the Tennessee Comprehensive Assessment Program (TCAP). This study examined the TCAP reading-language arts scores of sixth-graders through their eighth-grade year beginning in 2004.

Definitions of Terms

1. *Accelerated Reader:* a computer-based, reading management and motivational system designed and published by Renaissance Learning to complement existing classroom literacy programs for grades kindergarten through 12 (Renaissance Learning, 2006).

2. *Achievement Gap:* According to the *No Child Left Behind Act* of 2002, an achievement gap is the difference in achievement between disadvantaged and minority students on the one hand, and their peers on the other hand (NCLB, 2005).

3. *Adequate Yearly Progress (AYP):* Adequate Yearly Progress is a measure of a school's ability to meet the *No Child Left Behind Act* required benchmarks with specific performance standards (Tennessee Department of Education, 2006).

4. *Advanced level*: a superior performance on a standardized test (National Assessment of Educational Progress, 2007).

5. *Basic level*: Partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade (National Assessment of Educational Progress).

6. *Criterion-Referenced Test (CRT):* A test that measures a set of learning outcomes or objectives. This type of test determines the degree to which a student has learned a particular skill. The skill is measured against a criterion regardless of what other students know (TestMate Clarity, 1997).

7. *Drop Everything And Read:* Better known as DEAR, this is a program that employs regular times to be set aside in the classroom schedule for both students and their teachers to "drop everything and read." DEAR time conveniently accommodates a variety of student interests and ability levels because each student selects for himself or herself the book or books he or she wishes to read (Vickery, 1999).

8. *Gain Score:* The difference in scale scores from one year to the next.

9. *Grade Equivalent (GE):* Grade Equivalent scores range from 0.0 to 12.9+. They represent how a student's test performance compares with that of other students nationally (Renaissance Learning).

10. *Instructional Reading Level (IRL)*: a level on which a child attains a 90-94% accuracy rate when reading without frustration but still provides challenges (http://staffweb.wwcsd.net/moored/litterms.htm).

11. *Normal Curve Equivalent (NCE):* Normal Curve Equivalent scores are based on an equal interval scale. This means the difference between any two successive scores on the NCE scale has the same meaning throughout the scale. These scores range from 1 to 99. They are useful for making meaningful comparisons between different achievement tests and for statistical computations such as determining an average score for a group of students (Renaissance Learning).

12. *Percentile Rank (PR)*: The Percentile Rank compares a student's test performance with that of other students in the state or nation in the same grade. It ranges from 1 to 99. This score indicates the percentage of other students nationally who obtained scores lower than the score of a particular student (Renaissance Learning).

13. *Proficient level*: An academic performance for each grade assessed. Students demonstrate competency over challenging subject matter (National Assessment of Educational Progress).

14. *Scale Scores (SS):* The Scale score ranges from 1 to 999 and spans grades 1 through 12. It is calculated based on the difficulty of the questions and the number of correct responses. Scaled scores are useful for comparing student performance over time and across grades (Tennessee Department of Education).

15. *Socioeconomic Status (SES):* For the purpose of this study, students who are the on free- and reduced-price meals program are considered to have lower socioeconomic status than students who are not on the program.

16. *Sustained Silent Reading Strategy (SSR):* This is a form of school-based recreational reading, or free voluntary reading, where students read silently during a designated period every day in school (American Library Association, 2006).

17. *Tennessee Comprehensive Assessment Program (*TCAP*):* a national achievement test developed by CTB/McGraw-Hill and administered by the Tennessee Department of Education to all students in grades three through eight. The achievement test is a

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timed, multiple choice assessment that measures skills in reading, language arts,

mathematics, science, and social studies (Tennessee Department of Education).

18. *Zone of Proximal Development (ZPD)*: This is the difference between what a child

can do during independent problem solving and what he or she can accomplish with

the help of experienced problem solvers (Vygotsky, 1986).

Research Questions

I investigated the following questions as they related to the use of *Accelerated Reader*

compared to the use of Sustained Silent Reading for sixth-, seventh-, and eighth-grade students

in two Tennessee school systems.

1.   To what extent, if any, is there a difference in the TCAP reading-language arts scale

scores between students who participated in the *Accelerated Reader* program and

students who participated in the Sustained Silent Reading strategy?

2.   To what extent, if any, are there differences between TCAP reading-language arts

scale scores based on gender of students who participated in the *Accelerated Reader*

program and students who participated in the Sustained Silent Reading strategy?

3.   To what extent, if any, are there differences between the TCAP reading-language

arts scale scores based on socioeconomic status of students who participated in the

Accelerated Reader program and students who participated in the Sustained Silent

Reading strategy?

Significance of the Study

A study of the association of *Accelerated Reader* compared to the association of

Sustained Silent Reading is important for several reasons. First, schools have invested millions

of dollars on supplemental programs such as the *Accelerated Reader* program as a means of

enhancing students' performance. On the other hand, the use of the Sustained Silent Reading

strategy has no costs but does require time beyond the time designated for the traditional

classroom instruction in reading. Because of heavy demands of the *No Child Left Behind* legislation, school leaders are searching for methods that will make a difference on students' achievement test scores. Finally, educators and school officials must ensure that these programs will help to close the achievement gap. The results of this study might assist school leaders in choosing methods that can provide best practices for effective reading performance.

Delimitations and Limitations

The population consisted of 108 students who had taken the TCAP test during the 2004-2005, 2005-2006 and 2006-2007 school years. This study was confined to two specific schools located in Tennessee. The students attended one of the two schools (school A or school B) in rural Tennessee. School A had 49 students who participated in *Accelerated Reader*. School B had 59 students who used the Sustained Silent Reading strategy. Data were collected for all 3 school years. Students' achievement was measured using the TCAP scale scores for reading-language arts. In addition, teachers used both programs in various ways with little consistency across grade levels. The results of this study may not be generalized to any other school system.

Overview of the Study

This study is organized into five chapters. Chapter 1 includes an introduction, background of the study, statement of the problem, definitions, research questions, significance of the study, and delimitations and limitations of the study. Chapter 2 presents a review of the pertinent literature. Chapter 3 details the research methodology. Information is provided on research design, population, instrumentation, a description of *Accelerated Reader* courseware, a description of Sustained Silent Reading strategy, data collection, and data analysis. Chapter 4 includes the findings or results of the study. In Chapter 5, the findings are summarized and interpreted and from the analysis conclusions are made. In addition, recommendations to improve practice and for further research complete this study.

CHAPTER 2

LITERATURE REVIEW

The purpose of this study was to determine if a difference existed between TCAP scores of students who used the *Accelerated Reader* (AR) program and students who used Sustained Silent Reading strategy (SSR) as measured by the Tennessee Comprehensive Assessment Program (TCAP). School A in Cocke County, Tennessee, implemented the use of the *Accelerated Reader* program in 1996 in grades kindergarten through eight. School B, located in McMinn County, Tennessee, implemented the use of the Sustained Silent Reading strategy for the school year 2002-2003. An additional purpose of this study was to add to the existing body of research on the success or lack of success of these programs because few studies have been conducted comparing the *Accelerated Reader* program to the Sustained Silent Reading strategy.

The purpose of this chapter is to review the existing literature to determine the effectiveness of *Accelerated Reader* compared to the use of Sustained Silent Reading. Presented in this chapter is a history of reading, teacher reading assessments, description of the Tennessee Comprehensive Assessment Program, the *No Child Left Behind Act of 2002, Accelerated Reader,* research showing positive results of the *Accelerated Reader* program, research showing negative results of the *Accelerated Reader* program, and a description of the Sustained Silent Reading strategy.

History of Reading

The progress of reading in America has evolved through four basic paradigms: oral, written, print, and language development. For thousands of years, language was an oral paradigm (Bird, 2003). From the time prehistoric persons were able to make sounds that other prehistoric persons were able to hear, oral language had begun. Bird further explained, "Storytellers, known often as shamans or wise men or women of social groupings, maintained

memories of such things as knots on counting ropes, notches on decorated sticks, or Plains

Indian winter counts" (p. 3). Until that time, there were no books or writings. The evolution

toward an oral paradigm in language set the groundwork for other forms of language

presentation. All languages before writing owe "their origin to oral transmission" (Barron, 1990,

p. 282). For the oral paradigm to be effective, a listener had to be within earshot of the teller in

order to grasp the language and its message and to continue the traditions of the language. In

other words, listening was essential to comprehension of oral language. Brown (1987)

explained, "Listening is the foundation of language acquisition" (p. 5) and Feyten (1991) stated,

"Listening is central to all learning" (p. 174).

In time, the written paradigm evolved. This "representation of sounds using symbols"

meant that the story no longer had to be heard in order to be shared with others (Bird, 2003, p. 3).

Writing, as defined by Fischer (2001), was the "sequencing of standardized symbols in order to

graphically reproduce human speech" (p. 12). Manguel (1996) stated, "The reader must attribute

meaning to a system of signs, and then decipher them" (p. 7). The earliest examples of this were

found in Mesopotamia. As early as 3100 BC, people began marking clay tablets and pots with

primitive representations in order to keep up with their belongings (Donebauer, 2006). Even

though the interpretation of these and other such markings were dependent on the ability of

scientific writers to interpret, they represented the beginnings of recorded language. As a result,

an exact copy, or a story, could be recorded though the symbols without the filtration by the

messenger (Bird, p. 3). Whereas cave dwellers drew pictures on the walls of their caves related

to stories and events, the real recording of history began with the evolution of the written

symbols. With the evolution of the written word, it became important for people to learn to read

as well. People around the world were recording symbols on items such as "papyrus in Egypt,

vellum in Greece and Rome, paper in China, and even clay tablets in the Middle East" (Bird, p.

3). Although the primary origins for writing were for business purposes, writers also took time

to record oral traditional stories such as the *Iliad* and the *Odyssey* that otherwise would have

been lost. As a result, "The written paradigm created literacy, but it was a literacy for the

learned and the wealthy" (Bird, p. 3). In order to be proficient, Stevens (2006) said readers had to convert the printed symbols and put them into words to comprehend the meaning.

The print paradigm was introduced during the European Renaissance (Bird, 2003). Gutenberg has been given credit as the inventor of the printing press; however, according to Bird, printing began during the European Renaissance. What Gutenberg's press did for the print paradigm was to automate the printing process so that multiple copies of the same book could be published and distributed. Bird pointed out, "His [Gutenberg's] technology also made books more uniform" enabling readers to be on the same page at the same time (p. 3).

Shortly after the beginning of the Industrial Revolution in the late 18th century, the printing process was expedited by using electricity (Bird, 2003). As this age of development made progress much faster, the processes of printing became faster as well. Those from the electronic age promised to "intensify the rapid transition" (Bird, p. 3). Better reading materials and the increased availability of reading tools "contributed a great deal to population, settlement, and education of the West" (Bird, p. 3). The new frontiers were blossoming into new settlements and journalists became printers. Newspapers began popping up both as a source of information and as another type of reading tool. As the 19th century progressed, so did the tales of such legends as Wild Bill Hickock and Buffalo Bill Cody. This increased the desire to read because settlers wanted to remain informed of their activities. From immigrant guides to the establishment of the mail service, pioneers became increasingly literate and "those who became literate thirsted for knowledge and information" (Bird, p. 3).

While discussion of trends of old relating to the pioneers and other early settlers might seem a bit crude and outdated, without their tenacity and desire for knowledge, neither books nor the practice of reading might ever have evolved. The pioneers who settled the frontier "effectively used all the language arts skills and the four paradigms of language development" in their quest for knowledge (Bird, 2003, p. 3). Many early settlers had access only to the Bible as a reading source. Their faith was their motivation to read in search of knowledge and Godliness.

The 1840 the U.S. census showed that 90% of White Americans could and did read as well as write at that point in time (Bird).

The print paradigm has remained an important part of American culture, but it is rapidly being superseded by the increasing evolution of electronic media (Bird, 2003). According to the *Reading at Risk* (2004) report, book purchases were down by 5.7% whereas spending on audio, video, computers, and software was up by 6%. *Reading at Risk* reported that a 1999 study showed that the average American child lived in a household with 2.9 televisions, 1.8 VCRs, 3.1 radios, 2.1 CD players, 1.4 video game players, and 1 computer. One can assume that these average percentages have increased since 1999. This is not entirely a bad evolution as technology has returned communication to its beginnings in oral traditions as well. Although technology has given print media competition, it has not been able to replace them entirely, as Bird pointed out, "Even when computers are used today, reading print on monitors is required" (p. 4).

Listening, speaking, reading, and writing are four paradigms that remain as prevalent to survival in today's society as they were at their inception. Bird (2003) reminded, "Those are the means we use to absorb information and knowledge in today's world" (p. 4). They were important to the settling of American frontiers and they are equally important in the world today. The settlers devoured any information with which they came into contact and as a result, the functional literacy rate in 1840 was 90% (Bird). Educators need to emphasize and transfer to students in today's world an understanding of each of these paradigms.

In earlier days, learning to read and write was not as much a necessity as it was a privilege. Many children worked for long periods each week and were unable to take advantage of formal schooling. Many adults had only basic reading and writing skills, just enough to function in society. The utmost importance of the day was the survival of the family. As society has progressed, so has the importance of education. Access to education has now shifted from a privilege to a necessity.

Reading Assessment

Reading assessments conducted by teachers have varied in form from analyzing comprehension through informal methods such as oral responses and oral reading to more formal means such as tests and quizzes. Informal assessments are not data driven as are more formal assessments; instead, they are based on loosely collected information such as class grades from quizzes and participation in oral activities. Assessments such as standardized tests are measured by formal methods such as the Tennessee Comprehensive Assessment Program (TCAP) then mathematically analyzed to determine reading ability on various levels (Weaver, 2006). It is important, however, to match reading instruction and assessment so as to capture actual progress or lack of progress.

Informal testing is usually done on a daily basis. This type of testing involves a degree of subjectivity (Royer, 2006). According to Royer, the teacher observes the participation of the student and his or her responses as well as any difficulty the student may or may not be having and makes a judgmental assessment of progress. There are no statistics regarding how one student's performance compares to other students. The teacher is able to judge an individual student's performance and progress against his or her previous performance. These types of assessments include oral reading and participation. Teachers are able to ascertain students' comprehension through their responses. Pop quizzes and classroom tests are ways to determine the levels of comprehension each student can demonstrate (Royer).

*Tennessee Comprehensive Assessment Program (*TCAP*) Summary*

Formal testing typically is done using a standardized test that ranks students against those from their own class as well as students from across the state and the nation (Royer, 2006). State standards are written or revised by committees of educators and content experts (Jehlen, 2007). The committee then decides "which standards will be tested" (p. 30). The mainstream version of this test is the Tennessee Comprehensive Assessment Program (TCAP) test. TCAP achievement

tests are published by CTB/McGraw-Hill and are often referred to as Terra Nova tests. Because these tests are purchased from McGraw Hill, they are considered commercial tests that are "tweaked" to be aligned with many aspects of Tennessee's curriculum standards. The Terra Nova tests are norm-referenced tests administered to students in kindergarten- through second-grade. Norm-referenced tests allow the students' achievement to be compared with the performance of a national sample of students (Tennessee Department of Education, 2006). The TCAP program's achievement tests are criterion-referenced tests that are administered to students in grades three through eight. A criterion-referenced test measures students' performance according to a specific standard or criterion. According to material from the U. S. Department of Education (2006):

> The TCAP Competency Test is a multiple-choice test designed to measure student achievement in certain skills in mathematics and language arts. The test consists of a mathematics subtest and a language arts subtest that includes sections on spelling, language, and reading. (n. p.)

The administrators of this test must follow stringent guidelines. Failure to do so can result in invalid results or having tests nullified immediately. There are three types of special arrangements that are available as stated by the U. S. Department of Education (2006):

1. TCAP allowable accommodations may be used by all students as needed;

2. special conditions accommodations may be used only by students receiving special education services who have the need documented by their Individual Education Program (IEP) team; and

3. English Language Learner (ELL) accommodations are being [were] implemented for the 2002-2003 academic year and may be used only by students who meet specified criteria for ELL services. (n. p.)

The *No Child Left Behind Act* was signed into law by President George W. Bush on January 8, 2002 (NCLB, 2005). According to *Four Pillars of NCLB* (2006), it is a historic reform bill that is based on four specific elements:

1. stronger accountability for achievement results by school systems;

2. more freedom and choices given to schools and districts;

3. encouragement of proven education methods; and

4. more options available to parents. (n. p.)

No Child Left Behind is designed to fill in the achievement gaps among students. Annual report cards are presented to parents and public schools that do not make the grade must provide supplemental programs to students. Schools have 5 years to make progress in these areas or they must change completely how their schools are run (*Four Pillars of NCLB*, 2006). The *No Child Left Behind Act* has provided unprecedented flexibility on how federal funding is used. Systems may move federal money into supplemental programs without specific governmental approval. This also allows districts to use monies to hire new highly qualified teachers, increase teachers' pay, and improve teachers' training and professional development (*Four Pillars of NCLB*). Proven, research-based instructional methods are also emphasized. Monies are intended to be used for target programs designed to improve learning and achievement. Parents also have more choices concerning their children's education. Students may be moved from a particular school if that school has failed to meet standards for 2 years. School systems are required to provide transportation to the alternative school as well. If the school fails to meet standards for 3 years, students must have supplemental programs such as tutoring, after-school services, and summer school provided to them at no cost. If students are victims of violent crimes in their school, parents are entitled to move their children to a school they feel is safer (*Four Pillars of NCLB*).

According to Furger (2005), *No Child Left Behind* was also designed to guarantee that teachers would be as qualified as possible. Teachers must meet the guidelines for "highly qualified" status. All schools were to have conformed to this standard by June 2006. Furger

reported, "Under the *NCLB*, the federal government gave states broad discretion in determining what constitutes highly qualified teachers" (p. 40). The minimum requirement for being classified as highly qualified is for teachers to have a college degree, demonstrate knowledge of subject matter by passing a test such as the Praxis, and meet any state licensure or certification requirements (Furger).

Popham (2004), on the other hand, maintained that the *No Child Left Behind Act* could be successful at determining if schools are failing if implemented properly. The major benefit of proper implementation would lead to a better education for the nation's students. However, for *No Child Left Behind* to be successful, Popham reported a need to broaden the range of evidence used to determine if a school was failing. He gave the following as a more accurate method of evaluating a schools' effectiveness:

1. use instructionally supportive accountability tests,

2. use students' work samples,

3. gather affective data to measure students' attitudes and interest, and

4. use nonacademic indicators such as attendance rates, tardiness, etc. (p. 95)

Popham also contended that the *No Child Left Behind Act* would be harmful to children when applied unwisely. He pointed out that it is unwise to use standardized tests as the dominant determiner of whether a school was performing satisfactorily.

The National Assessment of Educational Progress (U.S. Department of Education, 2006) assesses students on both a national and state level in specific areas such as reading, writing, math, and science. In 2005, nationally representative samples of 165,000 fourth-grade students and 159,000 eighth-grade students nationwide participated in this assessment. The NAEP results indicated that average reading scores were two points higher in 2005 compared to 1992 at both the fourth and eighth grades. Tennessee's fourth- and eighth-grade students scored slightly below the national level in 2005 (U.S. Department of Education).

Accountability for schools has continued to be a major political issue in America today. Over the years, the educational system has undergone many reforms mandated by the federal

government. A forerunner of the *No Child Left Behind Act* was the landmark report, *A Nation at Risk*. This document was written by the National Commission on Excellence in Education and released in 1983. Like *No Child Left Behind, A Nation at Risk* criticized public school systems and announced to the nation that America's schools were lagging behind those of other countries. The launching of the Russian Sputnik in 1951 made Americans realize that our students were being left behind academically. This led to a reform in education with the emphasis being placed on math and science. During this time, schools in the United States were described as failures. Many implied that teachers were incompetent and unable to provide a quality education (Owens, 2004).

Reading at Risk* (2004) was a survey conducted by the U.S. Bureau of the Census in 2002. This survey sample included more than 17,000 individuals in the United States. The survey interpreted data on literary reading and compared the results from similar surveys done in 1982 and 1992. Compared to *A Nation at Risk*, a report that claimed Americans were lagging behind other nations, *Reading at Risk* called for concern about a "culture at risk" (p. xii). Alarmingly, this report indicated that fewer than half of adult Americans read literature and young adults were less likely to read (*Reading at Risk*).

American policymakers are still concerned about the decline in reading and the vast number of adults who are considered nonreaders. The National Assessment of Adult Literacy (2003) reported that 14% of adults in America had scored below the "basic" level in reading. Basic reading skills were defined as performing simple, everyday literacy activities (National Assessment of Adult Literacy).

Accelerated Reader Program

The Florida Center for Reading Research defined the *Accelerated Reader* program as "a computer based, reading management and motivational system designed to complement existing classroom literacy programs for grades K-12" (Johnson, 2004). The motivation guiding the *Accelerated Reader* program is a system of points earned for each book read in order to reach an

attainable goal. Books are chosen by students according to their reading levels as determined by standardized testing (Johnson). Students then choose books from their school's media center collection that have been identified and marked as *Accelerated Reader* books for which tests are available at their school. Johnson explained that books were given different values based on the number of words contained and their reading difficulty. Each book is assigned a specific reading level based on the Flesch-Kincaid readability index. The *Accelerated Reader* program assigns points to each book based on length and reading level. The following formula is used to determine the number of points assigned to each book: AR Points = (10 + reading level) x words in book divided by 100,000 (Renaissance Learning, 2006). The formula considers other characteristics such as the number of syllables in words or the complexity of sentences (Johnson).

Upon completion of a book, students take tests that vary from 5 to 20 multiple-choice questions. In order to earn points, students must score at least 60% on each test. Tests that are not passed cannot be retaken by the student. However, the administrator of the *Accelerated Reader* program might delete a test to allow students the opportunity to retake it to improve their average scores. According to Johnson (2004), as students read and take tests, "The technology presents test scores, points earned, and keeps records in order to help teachers and parents manage and track a student's attempt to reach his or her goal" (n. p.). This provides immediate feedback to the readers as well as the teachers. In addition, from within the *Accelerated Reader* program, reports can be generated to track information about the books read, reading levels, scores, and points earned (Renaissance Learning, 2006). These reports can be generated for "individual students, grade levels, and school reports" (Johnson, n. p.). Through the report process, students at risk of not reaching their goals may also be tracked. The *Accelerated Reader* program asserts it is not designed to provide reading instruction, rather, it is designed to help motivate students to "read advanced level books and to increase their personal reading time" (Johnson, n. p.).

Research Showing Positive Results of the Accelerated Reader Program

According to Krashen (2003), a graduate professor of education at the University of Southern California, "There is overwhelming evidence that two aspects of the program do indeed result in substantial gains: "providing access to comprehensible books and interesting books" (p. 16). There has been extensive research showing that the more books that are readily available to students and the more interesting the material is, the more students will read (Krashen, 1993). The implementation of the *Accelerated Reader* program has motivated libraries to order more materials for which *Accelerated Reader* tests are available in order to broaden students' interest in reading. When students participate in *Accelerated Reader*, they are given immediate feedback in the form of test results. Students who successfully complete the tests are immediately rewarded with points earned. In many cases, students are motivated to read more in search of prizes earned for their accomplished reading level and points. Most educators would likely agree that motivation is a key factor for successful academic achievement.

According to research supported and funded by the publisher Renaissance Learning (2006) and conducted by Paul, VanderZee, Rue, and Swanson (1996), there was a great deal of evidence to support use of the *Accelerated Reader* program. Paul et al. (1996) focused on the association of school ownership of *Accelerated Reader* on attendance and on standardized test scores by comparing 2,500 elementary and high school schools to approximately 3,500 schools of similar geographic and demographic characteristics that did not own the *Accelerated Reader* program. According to results from Paul et al. (1996), there were five distinct positives concerning the use of the *Accelerated Reader* program. They were:

1. statistically significant evidence was found that on virtually every subject test (including reading, writing, math, science, and social studies) students in a majority of schools that owned AR performed better than did socioeconomically comparable students in non-AR schools;

2. a statistically significant majority of AR-owning schools had higher attendance rates than did non-owning AR schools;

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3. gains in academic performance increased with the length of time schools owned AR. Schools that had used AR for 2 or more years were 59% more likely to show test performance above the median for their control group;

4. analysis of AR's effectiveness in different metropolitan settings indicated that AR was by far most influential in urban schools and in low socioeconomic environments;

5. the increased performance of AR-owning schools did not vary with the relative availability of microcomputers at those schools, indicating that the effect was not related only to increased use of technology. (n. p.)

Scott's (1999) dissertation addressed whether the use of *Accelerated Reader* motivated and improved achievement for all students including special needs students. Her study involved four classes of middle school students with learning disabilities using *Accelerated Reader* and a control group made up of two classes that did not use *Accelerated Reader*. The treatment group consisted of 16 middle school students using *Accelerated Reader*. The control group of 12 students did not participate in the *Accelerated Reader* program. The study extended over a 4-month period and followed a pretest-posttest design. The study revealed that the treatment group had more significant gains in attitude than did the control group. Scott's findings also indicated that students with learning disabilities who used the *Accelerated Reader* program not only improved reading comprehension scores but also improved their attitudes toward reading.

Peak, a high school assistant superintendent, and Dewalt, a faculty member at Winthrop University (Peak & Dewalt, 1994), conducted a 5-year study to track the progress of 50 ninth-grade students who had used *Accelerated Reader* since third grade. Those students were compared to 50 randomly selected non *Accelerated Reader* students from the same county. The researchers collected third-grade, sixth-grade, and eighth-grade California Achievement Test reading scale scores for each student. Third-grade scores were used as a pretest. By sixth grade, students using *Accelerated Reader* had increased their average gain scores by 15.3 points, whereas the comparison group's gain scores increased by 10.2 points. By the sixth grade to the eighth grade, the *Accelerated Reader* students' average gain scores increased by only 13.2 points

whereas the comparison group's average gain scores only increased by 5.5 points. Peak and Dewalt concluded that although students who used *Accelerated Reader* and students who were in the comparison group both increased their average gain scores over the 5-year period, the *Accelerated Reader* program had a significant positive effect on students' achievement over a 5-year period.

One of the largest studies conducted was from the University of Dundee, Scotland that provided evidence of the positive relationship between the amount of reading practice and reading ability. Topping, the Director of the Centre for Paired Learning at the University of Dundee in Scotland and a member of the Renaissance Learning Research Review Board, along with Paul, husband of Judi Paul and cofounder of the *Accelerated Reader* program, gathered *Accelerated Reader* data to measure the reading practices of 659,214 students in grades kindergarten through 12 from 2,193 schools across the United States (Topping & Paul, 1999). Their results indicated that students' reading ability was positively related to the amount of in school reading practice. The data also implied that reading practice increased until sixth grade and then declined. Other findings indicated that the amount of reading practice was negatively correlated with school size and that private schools included more reading practice than did public schools. Overall, the results confirmed that schools using *Accelerated Reader* for 4 years or more had a 64% higher level of reading practice when compared to schools using *Accelerated Reader* for 1 year or less (Topping & Paul).

Paul, Swanson, Zhang, and Hehenberger (1997) compared several hundred Tennessee schools that used the *Accelerated Reader* program to Tennessee schools that did not own the program. Their study included students in grades two through eight. These researchers investigated all schools included in the Tennessee Value-Added Assessment System database throughout the 1995-1996 academic school year. Paul et al. (1997) looked at the Tennessee Comprehensive Assessment Program (TCAP) scores for reading, language arts, math, science, and social studies. The results were statistically significant and suggested schools that used *Accelerated Reader* outperformed others in all grades and subjects (Paul et al., 1997). An

unsuccessful attempt was made to find other studies that confirmed these data.

Vollands et al. (1999) conducted a 6-month quasi-experimental evaluation of the *Accelerated Reader* program with two schools in Scotland. The students in the study were from a low socioeconomic area and were of mixed ability levels. Project A consisted of two sixth grade classes. The *Accelerated Reader* group (experimental group) contained 27 students, whereas the non-*Accelerated Reader* group (control group) had 12 students with comparable reading abilities. During the first 5 weeks of the study, the experimental group had 15 minutes of reading time per day. This was increased to 30 minutes and combined with 30 minutes of "reading to" time. The control group was given regular instruction with 30 minutes of class reading time per day. The results indicated that the *Accelerated Reader* group showed significantly greater gains and exhibited better attitudes toward reading at the end of the 6-month period. Project B included an *Accelerated Reader* group of 24 sixth-grade students compared to 26 fifth-grade students who did not use *Accelerated Reader*. The *Accelerated Reader* group (experimental) received 20-30 minutes of reading time per day and the non-*Accelerated Reader* group (control) were given 15 minutes of silent reading time per day with 20 minutes of oral reading one to three times per week. The younger fifth-grade students were more able readers and were also required to complete many supplemental assignments. Both groups demonstrated significant gains on comprehension tests. Overall, the *Accelerated Reader* group obtained better results even though the non-*Accelerated Reader* group had a more intensive instructional program (Vollands et al.).

Facemire (2000) investigated the association of the *Accelerated Reader* program on the reading comprehension of third graders compared to students who did not participant in the *Accelerated Reader* program. She studied third graders in a socioeconomically disadvantaged area of West Virginia for a 9-week period. The population of the study consisted of two separate third-grade classroom students with different teachers. The *Accelerated Reader* group was the experimental group that included 15 students. The control group that did not participate in the *Accelerated Reader* program was made up of 21 students. Growth in reading comprehension

was determined by administering pretests and posttests. The results of the study indicated a significant increase in the reading comprehension scores of the third graders using the *Accelerated Reader* program based on the STAR pretest and posttest results (Facemire).

Johnson and Howard (2003) studied the association of the *Accelerated Reader* program on the reading achievement and vocabulary development of 755 third, fourth, and fifth graders from a low-socioeconomic environment. The study categorized the treatment into three types of *Accelerated Reader* users focusing on numbers of points achieved. Low participants read fewer than three books per year with 0-20 *Accelerated Reader* points. The average participant read three to five books per year with 21-74 points. The high participants read more than 8 to 10 books each year with 75 or more points. Using the results of the *Gates-MacGinite Reading Test*, all three groups improved their reading skills. The results of this study indicated that students who read performed better than students who were unwilling to do more supplemental reading (Johnson & Howard).

Nunnery, Ross, and McDonald (2006) conducted an experimental evaluation of the associations between reading achievement of students attending urban, high-poverty elementary schools who used the *Accelerated Reader* program. The participants included 978 students in grades three through six. Teachers were assigned to a treatment or control group. The treatment group implemented *Accelerated Reader* and provided at least 60 minutes of reading time during the day. The control group required 90-minute blocks for reading. Both groups used the same basal reading program. The treatment group also had a stated goal of reading 25 books per student. To provide a longitudinal profile of reading achievement, the STAR Reading test was administered to both groups in September, January, and April. The results indicated that students in third and fourth grades had higher standardized mean differences from pretest to posttest. Students in the fifth and sixth grades showed uneven progress relative to control students across all three testing dates (Nunnery et al.). Nunnery et al. concluded that the implementation of *Accelerated Reader* had positive effects on the reading achievement of at-risk students across grades three to six. They also noted that there were larger differences in earlier

grades and smaller differences in the upper grades.

According to Mallette, Henk, and Melnick (2004), more independent empirical research that is scientifically based should be conducted that would relate to effect. Because of the lack of high quality independent research, the relative associations of *Accelerated Reader*, both cognitively and affectively, have been difficult to recognize (p. 75). Mallette et al. studied the influence of *Accelerated Reader* on reading attitudes and self-perceptions of intermediate grade students with differing reading abilities. The participants were 358 students in fourth and fifth grades. The treatment group consisted of 235 students who experienced *Accelerated Reader* as their basic reading instruction program. In this program, the focus on *Accelerated Reader* was extreme. Teachers in this group were required to use only *Accelerated Reader* activities during their reading instruction. These students had participated in the *Accelerated Reader* program since first grade. The control group consisted of 123 students who had limited exposure to *Accelerated Reader*. The primary source of instruction for the control group was based on literature. The findings of the Mallette et al. study indicated that the *Accelerated Reader* program positively influenced attitude toward academic reading but not for recreational reading. Because the *Accelerated Reader* program does appear to have a competitive aspect, Mallette et al. noted although it had the potential to encourage high-achieving readers to feel more confident about their ability, the "less accomplished readers might doubt their reading ability" (p. 77).

At the time of this writing, the Renaissance Learning (2006) website listed 75 independent scientific research reports in support of the *Accelerated Reader* program. Of that number, 22 were experimental or quasi-experimental studies, and only 7 had appeared in peer-reviewed journals. Of the 22 experimental studies, 4 were company sponsored and 7 were unpublished master's theses or doctoral dissertations (Renaissance Learning).

Research Showing Negative Results of the Accelerated Reader Program

A number of researchers have called into question the value of using the *Accelerated Reader* program. According to Stevenson and Camarata (2000), the *Accelerated Reader*

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program is "a computer-centered program that limits the specific body of books students may choose to read" (p. 8). They said it also "prevents children from choosing recently published books and sends the message that if something isn't on the *Accelerated Reader* list, it isn't worth reading" (p. 8). Stevenson and Camarata argued that a student who participated in the *Accelerated Reader* program did so "in isolation and for the sole purpose of taking a multiple-choice test" (p. 8). Students read independently and take tests independently, not as part of a group.

Another problem Stevenson and Camarata (2000) found was that students who failed to meet a given goal seemed to be discouraged and were perceived to be poor readers. When teachers were asked about taking time to discuss the books with readers, their responses included: "There just isn't time," "They wait in line to take the *Accelerated Reader* tests as it is," and "With each child reading a different book on a different level, I can't possibly make connections to other subjects I teach" (p. 9).

Trelease (2006) discussed this problem as well in his *Read-Aloud Handbook*. He found that teachers did not like classroom discussions of books because the discussions might give away answers to questions on the *Accelerated Reader* tests. Other problems of the *Accelerated Reader* program, according to Trelease were:

1. some teachers and librarians have stopped reading children's and young adult books because the computer will ask the questions instead;

2. class discussion of books decreases because a discussion would give away test answers, and all that matters is the electronic score;

3. students narrow their book selection to only those included in the program (points);

4. in areas where the "points" have been made, in either part of the grade or classroom competition, some students attempt books far beyond their level and end up frustrated;

5. although the programs discourage it, some districts have made the points part of the child's grade, thus removing the "voluntary" aspect of the program;

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6. teachers use the points to determine students' grades, lightening the teacher's workload by 25%; and

7. where the program is mandatory and grade-associated, some districts even tie the class's total points to the teacher's yearly evaluation. (n. p.)

Stevenson and Camarata (2000) reported that children were being taught "Reading is an isolated and competitive activity [involving] correctly answering questions generated by a computer" (p. 10) in order to earn points and prizes instead of ingraining the love of reading and the depth of understanding. By using or misusing the *Accelerated Reader* program, students suffer the repercussions. Or, as Brisco (2003) maintained, "The most serious discussions between the teacher and the student regarding a book's underlying messages, its symbolism, or even its character development, come to an end" (p. 33).

Pavonetti, Brimmer, and Cipielewski (2002) studied whether seventh graders' exposure to *Accelerated Reader* made a difference on their reading abilities and habits. They compared the performance of seventh graders from three different school districts that had used *Accelerated Reader* in elementary schools to students who had no experience with *Accelerated Reader*. The results of their study indicated that students who participated in the *Accelerated Reader* program read an average of 10 hours less than students who did not participate in the program. Their research also indicated that students who participated in *Accelerated Reader* might have read more during the school year, but the students did not maintain their reading practice once the school year had ended. Those researchers were also unable to support the *Accelerated Reader* program proponents' claims that it created lifelong readers (Pavonetti et al.).

Lamme (2003), a professor of education at the University of Florida, took issue with the *Accelerated Reader* program being capable of teaching students the reading skills to provide a better life and to help them become avid, lifelong readers. According to Lamme, the *Accelerated Reader* program not only limited access to good literature, but it also discouraged students from reading books that did not have the corresponding *Accelerated Reader* test. Lamme maintained that this could result in limited exposure to quality literature including the most recently

published novels. She also reported that book selection was limited by leveling the books. Students missed opportunities to read above or below their designated reading level. In her interviews, she found differences in how students responded to questions about what they had been reading. When asked how students described themselves as readers, students using the *Accelerated Reader* program replied with, "I'm a 3.2 reader." Students who had been exposed to a literature-rich curriculum replied with their favorite author, genre, or topic. Lamme concluded that reading in school should not be for practice; rather, but it should be for pleasure and knowledge.

Groce and Groce (2005), who were faculty members at Appalachian State University, deconstructed and examined how teachers implemented the *Accelerated Reader* program within their instruction. Of the 100 teachers surveyed, 67 responded. They found that approximately 75% of those teachers used the *Accelerated Reader* program as the main focus of their reading instruction. Groce and Groce concluded that a well-rounded literacy program should include critical thinking and higher-order thinking skills. They suggested that these students might be missing an important component in the literacy program. Groce and Groce suggested the following modifications should be made to enhance the *Accelerated Reader* program to meet individual student's needs and to promote successful lifelong reading habits:

1. use authentic types of assessments such as portfolios, writing samples, and projects;

2. survey students to find what motivates them to read;

3. avoid use of the *Accelerated Reader* test as the only form of assessment; and

4. allow students to have more choice in reading selections. (p. 19)

Bork (1999) conducted a quasi-experimental study to test the theory of direct reading practice by using the *Accelerated Reader* program and the Standardized Test for Assessment of Reading (STAR). The population of the study included 241 students from two schools in a mid-western city. His research pointed toward mixed results. Moderate, positive correlations were indicated between the reading level and direct reading practice as determined by the number of points accumulated in the *Accelerated Reader* program. A strong positive relationship was

revealed between reading level at different times of the year when controlling for points. However, the findings also indicated there were no significant associations between achievement with respect to age, grade, or gender.

Biggers (2001), a high school reading specialist, argued that schools should employ a well supported and balanced literacy program. The STAR testing program has been one component of Renaissance Learning used as a diagnostic tool to obtain student reading levels. This program has been used as a means of rating a student's performance compared with scores of students nationwide. One major downfall of the STAR testing program, according to Biggers, was that it did not take into account a student's oral reading or teacher-observed reading patterns. She argued that in order to be a more comprehensive evaluation of student reading, more data needed to be examined. Another concern has been that students' interests have not been considered when leveling books to ability. When students are interested in the reading material, they are able to comprehend more difficult books. Other opponents of the *Accelerated Reader* program maintained that the use of incentives decreased students' intrinsic motivation to read, and that a students' choice of reading materials was restricted by the program (Biggers; Carter, 1996; Stevenson & Camarata, 2000).

Gibson (2002) also investigated the effectiveness of the *Accelerated Reader* program as it related to reading achievement. Using a causal-comparative research design, Gibson followed 61 at-risk students from fifth grade to eighth grade. The students were divided into a treatment group and a control group. The treatment group used the *Accelerated Reader* program and the control group received regular reading instruction. The results indicated that there were no significant differences on the reading achievement of those students participating in the *Accelerated Reader* program (Gibson).

Melton, an assistant professor at Mississippi College along with Smothers, Anderson, Fulton, Replogle, and Thomas (2002), studied the associations of the *Accelerated Reader* program on fifth-grade students' reading achievement growth over a 1-year period. They compared 398 students who used *Accelerated Reader* to 230 students who did not use

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Accelerated Reader. The Terra Nova was used as a pretest and posttest to determine reading achievement growth of both groups of students. Evidence was found to indicate a significant difference in reading achievement growth of students who participated in the *Accelerated Reader* program. The *Accelerated Reader* group's participants scored significantly lower than students who did not participate in the *Accelerated Reader* program. There were no statistically significant differences between the treatment conditions within quartile one. Students with scores in quartiles two, three, and four did show statistically significant differences between students who used *Accelerated Reader* and students who did not use *Accelerated Reader*. The results of the study confirmed a significant difference in reading achievement for students who did not participate in the *Accelerated Reader* program (Melton et al.). The non-*Accelerated Reader* students scored higher adjusted mean rank scores than did those students who participated in *Accelerated Reader* (Melton et al).

Kohel (2003) reported no significant relationship to achievement test scores in her study using *Accelerated Reader* and its impact on reading levels. She compared 86 students who used the *Accelerated Reader* program to 30 students who received regular classroom instruction. The research data did, however, indicate the *Accelerated Reader* program made a significant difference on reading level growth as measured by the Standardized Test for Assessment of Reading (STAR).

Chenoweth (2003), an educational columnist for the *Washington Post*, questioned whether the *Accelerated Reader* program improved students' reading ability or discouraged reading by the competitive design of the *Accelerated Reader* program. After interviewing many school librarians, Chenoweth found both critics and proponents of the *Accelerated Reader* program. One librarian reported a huge increase in circulation of books; she attributed this to the students and teachers "love" of the *Accelerated Reader* program (p. 49). Another librarian stated the *Accelerated Reader* program "turns many children off" to reading (p. 49). Other critics acknowledged that many good books were left on the shelf because they were not on the *Accelerated Reader* list (p. 51). One might conclude that students were reading because they

were required to do so and not because they were developing the skills to become lifelong readers. According to Chenoweth, there was no empirical evidence to support claims that the *Accelerated Reader* program motivates students to read (Chenoweth).

Many studies have been conducted by researchers in an effort to support the notion that the use of *Accelerated Reader* has increased student achievement. However, no conclusive results have been reported that could positively support that hypothesis.

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Sustained Silent Reading Strategy

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Definition of Sustained Silent Reading

"The ultimate goal of a literature program is to turn students into readers who, of their own free will, read self-selected good literature with enjoyment, understanding, and appreciation" (Lynch-Brown & Tomlinson, 2005, p. 252). Sustained Silent Reading, by design, is a method that has provided students with a block of time during every school day to read any book of their own choosing (Hopkins, 2006). Lynch-Brown and Tomlinson suggested such blocks of time should correspond with the attention span of each individual age group. Reading expert McKracken (as cited in Trelease, 2006) recommended four basic elements for the implementation of a successful Sustained Silent Reading strategy. They were:

1. Children should read to themselves for a limited amount of time. Teachers and parents should adapt this to their individual class or family and adjust it with increasing maturity. Ten or 15 minutes are the frequent choices for the classroom.

2. Each student should select his or her own book, magazine, or newspaper. No changing during the period is permitted. All materials must be chosen before the Sustained Silent Reading period begins.

3. The teacher or parent must read also, setting an example. This cannot be stressed too strongly.

4. No reports are required of the student.

5. No records are kept. (n. p.)

In *Essential of Children's Literature*, Lynch-Brown and Tomlinson (2005) listed additional tips for implementing a successful Sustained Silent Reading strategy. These additional goals were also designed to encourage reading as a group while making individual choices on materials. These recommendations were:

1. have a well-stocked classroom collection of books--poetry books, plays, picture books, novels, and information books;

2. conduct book talks regularly so that students become aware of books they might wish to read;

3. display new books attractively in the classroom and show videos of notable authors talking about their books and craft;

4. insist on attentiveness to books during this time;

5. spend the silent reading period engrossed in books setting yourself as an example of a reader; and

6. be knowledgeable of and interested in the books the students are reading. (n. p.)

Moser (2006) and Anderson (2000) emphasized that the Sustained Silent Reading strategy could be successful if implemented correctly. Anderson stressed the importance of taking time to instruct students on the proper method of using Sustained Silent Reading. Teaching the students about selection of appropriate materials could also provide opportunity for teachers to get to know their students' interests (Moser). This approach could help the teacher ensure a varied selection of reading materials were available for them to choose. According to Anderson, the program should start at 5 minutes and then gradually increase giving the students time to read materials of their choice simply for pleasure. If students learn how to use the program properly and select materials that truly match their interests and reading ability, the results of the Sustained Silent Reading strategy could have a positive effect on their attitudes toward reading.

Positives Results From Implementing Sustained Silent Reading

When readers have an opportunity to choose the books they read based on their interests, their attitudes toward reading often seem to be more positive. Chow and Chou (2006) asserted, "Attitude shifts occur in both attitude toward reading and attitude toward paperback books" (n. p.). Readers are able to choose books from a much more varied subject pool "providing them with a better knowledge base with which to relate to their subject area textbooks and lectures" (Chow & Chou, n. p.).

Over the years there have been numerous studies demonstrating the benefits of Sustained Silent Reading. According to researchers Block and Mangieri (2002) and Gallik (1999), students who participated in Sustained Silent Reading had higher test scores on comprehension tests, maintained better grade-point averages, and developed more advanced writing styles than did those students who chose not to participate in recreational reading. Block and Mangieri observed, "Researchers also documented the effects of recreational reading on vocabulary development" (p. 573). The exposure to a wider range of books provided exposure to a wider vocabulary base as well. Trelease (2006) agreed, stating that by third grade, "Sustained Silent Reading can be the student's most important vocabulary builder, more so than with basal textbooks or even daily oral language" (n. p.). Likewise, students who engaged in reading activities in school were more likely to develop recreational reading habits outside the classroom as well. According to Gallik, students' recreational reading time had a direct bearing on their academic success. Nagy, Herman, and Anderson (as cited in Chow & Chou, 2006) stated that reading was the most effective way to produce large-scale vocabulary growth. The researchers concluded that a moderate amount of reading would result in considerable vocabulary gains.

Many people have suggested that offering Sustained Silent Reading eliminated valuable instruction time. Gardiner (2001) an English and journalism teacher affirmed that 10 minutes of Sustained Silent Reading did not take away from instructional time; instead, this time presented significant opportunities for students' language and literacy development. Gardiner (2001) opened his classes daily with 10 minutes of Sustained Silent Reading. He surveyed his

sophomore honors class and his senior class to determine how the program was working. Students from the sophomore class averaged reading 9.8 books during the semester. Students from the senior class read an average of 7.75 books per semester. He also asked those students to explain their feelings about the program. All students expressed a positive attitude reporting increases in reading speed and newly acquired interest in reading. One student complained that 10 minutes was not enough time for Sustained Silent Reading. Gardiner (2005) proclaimed, "Reading is a skill for life, and if students do not enjoy reading, they are cheated of a vital part of their education" (p. 33).

Owens (2003) studied the effects of Sustained Silent Reading on vocabulary and reading comprehension. Her study included 113 fourth- through sixth-grade students during a 15-week period. This quasi-experimental study used pretest and posttest scores from a standardized reading test to compare differences between the experimental group and the control group. For the fifth-grade treatment group, the scores improved significantly for vocabulary and reading comprehension. Owens (2003) reported improvement in mean scores for all grade levels in all areas tested. However, the only significant difference found was at the fifth-grade level. Owens (2003) concluded that Sustained Silent Reading did have a positive effect on reading achievement.

Parr and Maguiness (2005) reported that many children had the ability to read but left school without the desire. These authors joined with three teachers to perform a small-scale qualitative study to determine the effectiveness of implementing conversation with Sustained Silent Reading. Two components of this study included collaborative conversations between student and teacher and tracking and evaluating the implementation of the conversations. The focus became how the reluctant readers selected reading materials and how the teachers engaged the participants in informal and spontaneous conversation. Before the study began, all eight students were considered reluctant readers. Marked improvements were made by two of the students and two were still considered reluctant readers. The researchers concluded that informal conversations during the Sustained Silent Reading strategy had positive benefits. These

conversations helped teachers know and understand their students and increased the students' desire to read. Bryan, Fawson, and Reutzel (2003) also studied the effects of discussion after Sustained Silent Reading with non-engaged readers. Their results indicated a positive effect after an intervention of student-researcher conversations during the assigned Sustained Silent Reading period. These researchers all implied that some form of accountability such as discussion could increase the effectiveness of the Sustained Silent Reading strategy.

Proponents of Sustained Silent Reading questioned the long-term effects of the program. Does a Sustained Silent Reading strategy motivate students to become lifelong readers? Wiesendanger and Bader (1989) investigated what happened to students' reading habits after the termination of a Sustained Silent Reading strategy. They monitored the reading habits of students during the summer to analyze the effect of Sustained Silent Reading compared to those who had not been exposed to Sustained Silent Reading. The results of their study demonstrated that students who had Sustained Silent Reading experience during the previous year read significantly more than did the students who did not participate in the Sustained Silent Reading strategy. These results suggest that Sustained Silent Reading might affect the reading habits of students who have participated in the strategy.

Nagy, Campenni, and Shaw (2000) surveyed a sample of 69 teachers who had been teaching an average of 14.7 years to determine the challenges involved in implementing Sustained Silent Reading. The responses were divided into questions pertaining to participation, organization, and evaluation of the Sustained Silent Reading strategy. Researchers questioned teachers both using the program and those who were not using the program. Lack of time, ability levels, and unprepared students were listed as reasons the program had been discontinued. Teachers who were using the program indicated they did so because they wanted to model the value of reading, provide their students with the opportunity to read for pleasure, and because the students enjoyed the program (Nagy et al.).

Many challenges exist for the Sustained Silent Reading strategy. One of the biggest challenges in implementing a Sustained Silent Reading strategy has been in ensuring students

were actively reading during the set-aside time. Students might not be prepared with a book to read during the designated time period. The issue of whether students were actually reading or "faking" reading has been a concern regarding the Sustained Silent Reading strategy. Pearson (1996) reminded, "We must remember that providing books and time to read does not guarantee that students will be actively engaged in reading" (p. 407). Finally, educators have been concerned about whether students would place value on independent reading time if they were not held accountable for the content. In analyzing 14 studies that met specific criteria, the National Reading Panel (2000) reported that there were not enough data to support the use of the Sustained Silent Reading strategy as a method of increasing students' achievement. However, the principal goal of Sustained Silent Reading has been to get students to read. The Sustained Silent Reading strategy was designed for students to be able to select their own reading materials and read for a specific time with no summative testing for the material read during this time.

Summary

This chapter has presented a review of literature focusing on the history of reading, formal and informal types of student assessment, and research showing positive and negative results of the *Accelerated Reader* program and the Sustained Silent Reading strategy. Many research studies have been conducted on the success of the *Accelerated Reader* program. Much of the research focused on measuring increases in reading achievement of students who participated in the *Accelerated Reader* program. Renaissance Learning (2006), the parent company of *Accelerated Reader*, has provided numerous studies that support the use of the *Accelerated Reader* program.

CHAPTER 3

RESEARCH METHODOLOGY

The purpose of this study was to determine if a difference existed between TCAP scores of students who used the *Accelerated Reader* (AR) program and students who used Sustained Silent Reading strategy (SSR) as measured by the Tennessee Comprehensive Assessment Program (TCAP). School A, in Cocke County, Tennessee, implemented the use of the *Accelerated Reader* program in 1996 in grades kindergarten through eight. School B located in McMinn County, Tennessee, implemented the use of Sustained Silent Reading strategy for the school year 2002-2003. This chapter describes the methodology that was used in this study. It is organized into the following sections: research design, population, instrumentation, description of school A and school B, use of the *Accelerated Reader* program and Sustained Silent Reading strategy, a description of *Accelerated Reader* and Sustained Silent Reading, data collection, and data analysis.

Research Design

Participants in this study were part of a multiple-grade project that was conducted at two elementary schools during 2006-2007. I compared the difference between the use of the *Accelerated Reader* program to the use of Sustained Silent Reading by analyzing data obtained from the 2004-2007 TCAP reading-language arts tests following two groups of sixth-graders through their eighth-grade year. The reading-language arts scale scores were analyzed to determine the effectiveness of using *Accelerated Reader* compared to the use of Sustained Silent Reading. This study also focused on the relationship between demographics and *Accelerated Reader* and Sustained Silent Reading. Statistical analyses were conducted on variables such as socioeconomic status and gender to determine if the use of *Accelerated Reader* or Sustained

Silent Reading made any difference on the TCAP reading-language arts scale scores of students from School A and students from School B.

This was an ex-post facto quantitative research design study. It was "ex-post facto" because the data already had been collected by the state and were analyzed "after the fact." I used both descriptive and inferential statistics to make mean comparisons between treatment groups (*Accelerated Reader* and Sustained Silent Reading strategy) and for some research questions concerning mean comparisons for gender and treatment groups. Comparisons across grade levels were not made because the TCAP tests may not be comparable across grades. Instead, the treatment, gender and socioeconomic comparisons were conducted separately for each grade.

The dependent (criterion) variable used in this study was the TCAP reading-language arts scale scores. There were two independent (predictor) variables or treatment groups:

1. Group: (a) *Accelerated Reader* program and (b) Sustained Silent Reading strategy.
2. Gender: two levels (male and female).
3. Socioeconomic Status (SES): two levels (students who were on the free- and reduced-price meals program versus those who paid the full price for meals).

Information was obtained from both school systems to make comparisons between the treatment groups and student achievement.

Research Questions and Hypotheses

The following questions were designed to guide this study:

1. To what extent, if any, is there a difference in the TCAP reading-language arts scale scores between students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To answer this research question, three null hypotheses were tested with a *t* test for independent samples, one for each of the grade levels (sixth, seventh, and eighth grades).

2. To what extent, if any, are there differences between the TCAP reading-language arts scale scores based on gender of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To analyze this research question, three two-way ANOVA models were used to test the hypotheses, one two-way ANOVA for each grade level. Each two-way ANOVA tested three null hypotheses.

3. To what extent, if any, are there differences between the TCAP reading-language arts scale scores based on socioeconomic status of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To analyze this research question, three two-way ANOVA models were used to test the hypotheses, one two-way ANOVA for each grade level. Each two-way ANOVA tested three null hypotheses.

From the research questions, the following null hypotheses were tested:

$Ho1_1$: There is no difference between the TCAP reading-language arts scale scores for sixth-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

$Ho1_2$: There is no difference between the TCAP reading-language arts scale scores for seventh-grade students who participated in the *Accelerated Reader* program and seventh-grade students who participated in the Sustained Silent Reading strategy.

$Ho1_3$: There is no difference between the TCAP reading-language arts scale scores for eighth-grade students who participated in the *Accelerated Reader* program and eighth-grade students who participated in the Sustained Silent Reading *strategy*.

Two-way ANOVA model 1:

$Ho2_1$: There is no difference between the TCAP reading-language arts scale scores of sixth-grade male or female students.

Ho2_2: There is no difference between the TCAP Reading-language arts scale scores of sixth-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

Ho2_3: For the TCAP reading-language arts scale scores of sixth-grade students, there is no significant interaction between gender and the type of reading program in which students participated.

Two-way ANOVA model 2:

Ho2_4: There is no difference between TCAP reading-language arts scale scores of seventh-grade male or female students.

Ho2_5: There is no difference between the TCAP reading-language arts scale scores of seventh-grade students who participated in the *Accelerated Reader* program and seventh-grade students who participated in the Sustained Silent Reading strategy.

Ho2_6: For the TCAP reading-language arts scale scores of seventh-grade students, there is no significant interaction between gender and the type of reading program in which students participated.

Two-way ANOVA model 3:

Ho2_7: There is no difference between TCAP reading-language arts scale scores of eighth-grade male and female students.

Ho2_8: There is no difference between the TCAP reading-language arts scale scores of eighth-grade students who participated in the *Accelerated Reader* program and eighth-grade students who participated in the Sustained Silent Reading strategy.

Ho2_9: For the TCAP reading-language arts scale scores of eighth-grade students, there is no significant interaction between gender and the type of reading program in which students participated.

Two-way ANOVA model 4:

Ho3$_1$: There is no difference between TCAP reading-language arts scale scores of sixth-grade students receiving free- or reduced- price meals and students who are not receiving free or reduced price meals.

Ho3$_2$: There is no difference between the TCAP reading-language arts scale scores of sixth-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

Ho3$_3$: For the TCAP reading-language arts scale scores of sixth-grade students, there is no significant interaction between socioeconomic status and the type of reading program in which students participated.

Two-way ANOVA model 5:

Ho3$_4$: There is no difference between TCAP reading-language arts scale scores of seventh-grade students receiving free- or reduced- price meals and students who are not receiving free- or reduced-price meals.

Ho3$_5$: There is no difference between the TCAP reading-language arts scale scores of seventh-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

Ho3$_6$: For the TCAP reading-language arts scale scores of seventh-grade students, there is no significant interaction between socioeconomic status and the type of reading program in which students participated.

Two-way ANOVA model 6:

Ho3$_7$: There is no difference between TCAP reading-language arts scale scores of eighth-grade students receiving free- or reduced- price meals and students who are not receiving free- or reduced-price meals.

Ho3$_8$: There is no difference between the TCAP reading-language arts scale scores of eighth-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

Ho3$_9$: For the TCAP reading-language arts scale scores of eighth-grade students, there is no significant interaction between socioeconomic status and the type of reading program in which students participated.

Population of the Study

The population for this study consisted of 108 students from two schools in rural Tennessee. There were 49 students from School A and 59 students from School B. These schools were chosen because they were similar demographically and data were easily accessible. The focus was on sixth graders who attended one of two schools in Tennessee for 3 consecutive years beginning in 2004-2005 and who completed the TCAP tests all 3 years. Students who were retained or held back were excluded from the study. There was no random selection of students from a population of students, nor were students randomly assigned into the *Accelerated Reader* program or the Sustained Silent Reading strategy.

Instrumentation

The instrument used in this study was the TCAP reading-language arts scale scores. The TCAP test is administered annually to Tennessee students in grades three through eight. This criterion-referenced test provides the teacher with (a) the number of questions answered correctly, (b) percentage of questions answered correctly, and (c) the proficiency status. This portion of the TCAP is used to determine if students meet the minimum level of performance. Test results are reported in the form of National Percentiles (NP), Normal Curve Equivalent (NCE), Grade Equivalent (GE), and Scale Scores (SS). The scale scores are grouped into below proficient, proficient, and advanced. I examined the reading-language arts scale scores to determine if a difference existed between student achievement of those students who used the *Accelerated Reader* program and those students who used the Sustained Silent Reading strategy. Table 1 shows the range of scale scores for three levels of proficiency.

Table 1

Range of Scale Scores for Reading-Language Arts

Grade	Below Proficient	Proficient	Advanced
6	330-478	479-521	522-685
7	335-489	490-542	543-740
8	340-494	495-547	548-740

Description of School A

  School A was a public kindergarten-through eighth-grade school located in rural Cocke County, Tennessee, with 41% of its 745 students considered economically disadvantaged. These students qualified for the free- or reduced-price meals program. Of the 745 students, 7.37% qualified for speech, 1.88% qualified for gifted, and 3.63% were eligible for resource services. School A purchased the *Accelerated Reader* program in 1996. As have numerous other schools in the country, this elementary school has used the *Accelerated Reader* program for approximately 10 years. A representative from Renaissance Learning (the parent company of *Accelerated Reader*) provided extensive inservice training for teachers. One teacher who achieved the master teacher status provided additional training for other teachers. Master teacher status can be obtained by enrolling in a Renaissance certification program for a one-time fee of $25. The applicant is required to meet specific criteria established by Renaissance Learning for an 18-week period. According to Renaissance Learning (2006), this certification level identifies a master teacher who dramatically improves students' reading achievement.

Description of School B

  School B was a public kindergarten- through eighth-grade school located in rural McMinn County, Tennessee, with 48% of its 684 students considered economically

disadvantaged. Of the 684 students, 2.58% qualified for speech, .3% were gifted, and 7.75%
were eligible for resource services. School B has used the Sustained Silent Reading strategy
since 2002. Teachers allocated 30 minutes per day for silent reading. Teachers modeled good
reading habits by reading along with the students. Each classroom teacher implemented the
program according to his or her preference. Some classes did Sustained Silent Reading the first
thing in the morning, whereas others did Sustained Silent Reading before and after lunch. There
was no consistency in the way the program was implemented.

Data Collection

Approval was obtained from the Institutional Review Board at East Tennessee State
University before collection of any type of data. Written permission was also obtained from
principals of both school systems (see Appendix A). The data collected were the TCAP reading-
language arts scale scores for sixth-grade students throughout their sixth, - seventh, - and eighth-
grade years during the 2004-2007 school years. Information was also collected for students
receiving free- and reduced-price meals. Students who did not take the TCAP test for 3
consecutive years and those students who were retained were eliminated from this study.

The data were provided by the director of testing in School A and from the assistant
principal at School B. Information such as names, gender, and those on the free- or reduced-
price meals program were coded to protect the identities of all students involved in this study.
The researcher had no prior knowledge of students' identities. These data were entered into the
SPSS statistical program for analysis. An alpha level of 0.05 was used to determine statistical
significance.

Data Analysis

Both descriptive statistics and inferential statistics were used to make mean comparisons
between treatment groups (*Accelerated Reader* and Sustained Silent Reading). Descriptive
statistics were used to provide a profile for the population in this study. Inferential statistics

were used to determine effects and relationships among variables. The data set came from the TCAP Comprehensive Test of Basic Skills. The Statistical Program for Social Sciences (SPSS) was used to analyze the data. For some research questions, mean comparisons were made for gender and treatment groups. Treatment, gender, and socioeconomic comparisons were conducted at each grade level.

To answer research question #1, three null hypotheses were tested with a *t* test for independent samples, one for each of the grade levels. The independent samples *t* test evaluated the difference between the means of two independent groups. Each case had scores on two variables, the grouping variable and the test variable (Green & Salkind, 2005). To answer research questions #2 and #3, three two-way ANOVA models were used to test the hypotheses, one two-way ANOVA for each grade level. Each two-way ANOVA tested three null hypotheses. If the interaction term was significant, the nature of the interaction was investigated.

Sixth-, seventh-, and eighth-grade reading-language arts scale scores from the TCAP were analyzed. All statistical analysis was conducted using a predetermined alpha level of .05 to determine statistical significance.

CHAPTER 4

ANALYSIS OF DATA

Because schools spend thousands of dollars to add the *Accelerated Reader* program to

their curriculum, it was important to determine if the use of the *Accelerated Reader* program is

more effective than the use of Sustained Silent Reading, a strategy that involved no cost to

school systems but required time set aside daily to read without interruption. The purpose of this

study was to determine if a difference existed between TCAP scores of students who used the

Accelerated Reader (AR) program and students who used Sustained Silent Reading strategy

(SSR) as measured by the Tennessee Comprehensive Assessment Program (TCAP). The TCAP

scores of the students who participated in the *Accelerated Reader* program were compared to the

scores of the students using the Sustained Silent Reading strategy. This study also focused on

the relationship between demographics and *Accelerated Reader* and Sustained Silent Reading.

Statistical analyses were conducted on variables such as socioeconomic status and gender to

determine if the use of *Accelerated Reader* or Sustained Silent Reading had any association on

the TCAP reading-language arts scale scores of these groups.

The population of this study consisted of 108 eighth-grade students who had taken the

TCAP test each year during the 2004-2005, 2005-2006, and 2006-2007 school years. Of the 108

students, 49 participated in the *Accelerated Reader* program and 59 used the Sustained Silent

Reading strategy.

Gender and socioeconomic status variables were examined to determine if type of

program used had any association to achievement. As revealed in the data of the 108 students

chosen for this study the number of males and females was equally distributed. For the purposes

of this study the term low socioeconomic status refers to students who receive free- or reduced-

price meals. The data revealed 37% of the students involved in this study received free- or

reduced-price meals. This study was confined to two specific schools located in rural Tennessee.

These students attended one of the two schools chosen for this study (school A or school B) in

Tennessee. Data were collected for all 3 school years beginning in 2004. Students' achievement was measured using the TCAP scale scores for reading-language arts. Table 2 shows the descriptive statistics for sixth,- seventh,- and eighth-grade reading-language arts.

Table 2

Descriptive Statistics for Sixth,- Seventh,- and Eight-Grade Reading-Language Arts Scores

	N	*Md*	*M*	*SD*
Sixth-Grade Reading-Language Arts Scores	108	531	528.00	33.29
Seventh-Grade Reading-Language Arts Scores	108	540	537.00	41.52
Eighth-Grade Reading-Language Arts Scores	108	550	550.48	38.10

Three research questions were formulated to guide this study. The data obtained were used to test 21 hypotheses. The Statistical Package for the Social Sciences (SPSS) was used to perform the data analysis. An alpha level of 0.05 was used to determine statistical significance.

I investigated the following questions as they related to the use of *Accelerated Reader* compared to the use of Sustained Silent Reading for sixth,- seventh,- and eighth-grade students in two Tennessee school systems.

Research Questions

Research Question #1

1. To what extent, if any, is there a difference in the TCAP reading-language arts scale scores between students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To answer this research question, three null hypotheses were tested with a *t* test for independent samples, one for each of the grade levels. The independent-samples *t* test was used to evaluate the difference between the means of two independent groups (Green and Salkind, 2004).

From research question #1, the following three hypotheses were formulated and tested:

$Ho1_1$: There is no difference between the TCAP reading-language arts scale scores for sixth-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

$Ho1_2$: There is no difference between the TCAP reading-language arts scale scores for seventh-grade students who participated in the *Accelerated Reader* program and seventh-grade students who participated in the Sustained Silent Reading strategy.

$Ho1_3$: There is no difference between the TCAP reading-language arts scale scores for eighth-grade students who participated in the *Accelerated Reader* program and eighth-grade students who participated in the Sustained Silent Reading *strategy*.

An independent-samples *t* test was conducted to evaluate $Ho1_1$ to determine if there was a difference in the mean scores of students who participated in the *Accelerated Reader* program compared to students who participated in the Sustained Silent Reading strategy. The sixth-grade reading-language arts TCAP scores was the criterion variable and type of reading program was the predictor variable. There was a significant difference, $t(106) = 2.30$, $p = .02$. Therefore, the null hypothesis was rejected. The mean sixth-grade reading-language arts scores for students in the *Accelerated Reader* program ($M = 535.92$, $SD = 32.25$) was 14.5 points higher than was the mean for students in the Sustained Silent Reading strategy ($M = 521.42$, $SD = 32.96$). The effect size as measured by η^2 was small (.05). The 95% confidence interval for the difference in means was 1.99 to 27.00. Figure 1 shows the distribution of sixth-grade reading-language arts scores by type of reading program.
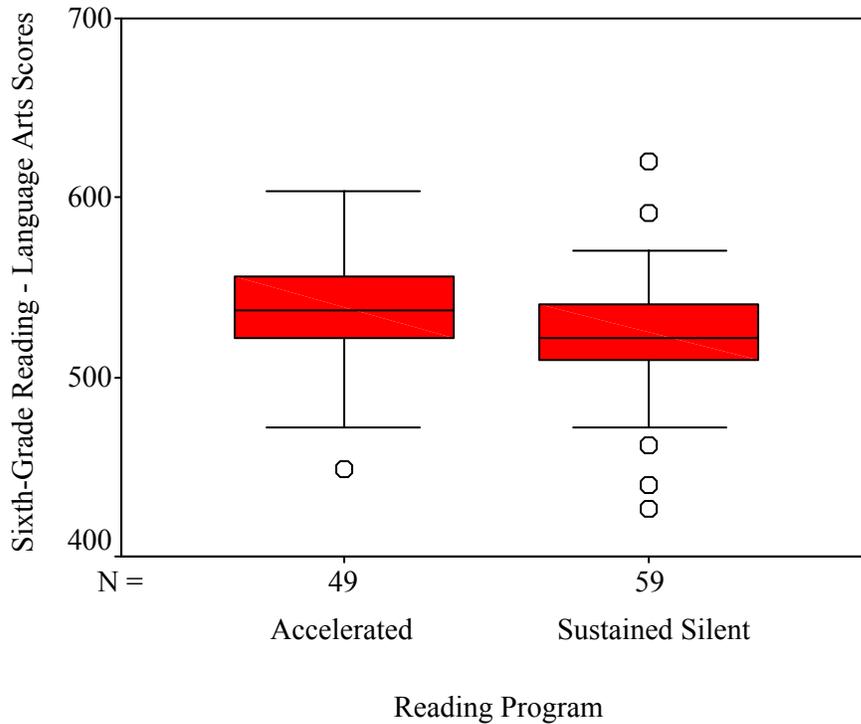
o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 1. Boxplot for Sixth-Grade Reading-Language Arts Scores by Reading Program

An independent *t* test was conducted to evaluate $Ho1_2$ to determine that there was no difference between the TCAP reading-language arts scale scores for seventh-grade students who participated in the *Accelerated Reader* program and seventh-grade students who participated in t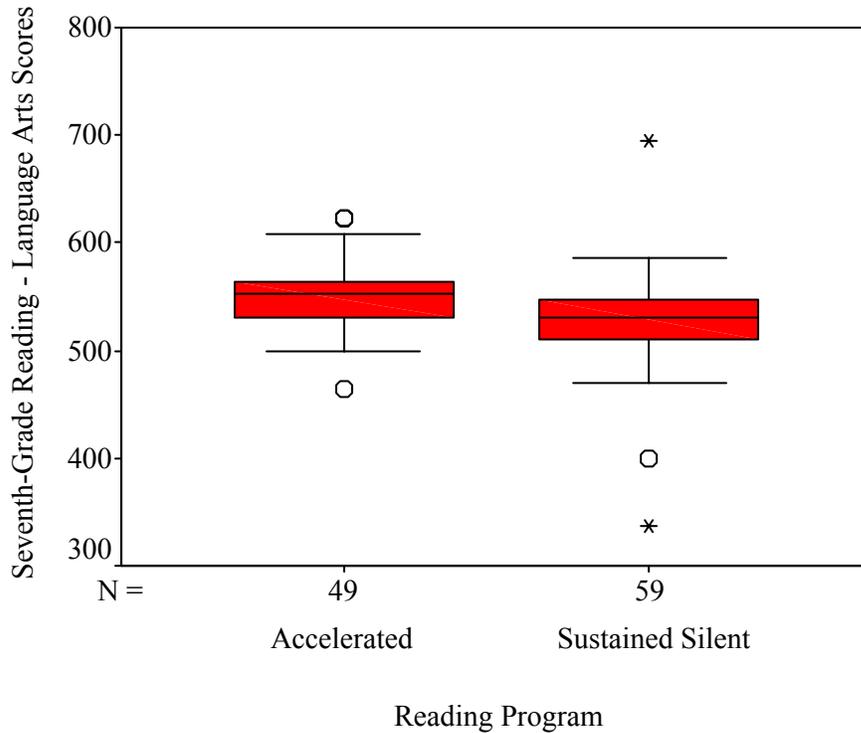he Sustained Silent Reading strategy. The test was significant, $t(106) = 2.94$, $p < .01$ and the conclusion was to reject the null hypothesis. The mean seventh-grade reading-language arts for students in the Sustained Silent Reading strategy ($M = 526.66$, $SD = 46.04$) was almost 23 points lower than the mean of students in the *Accelerated Reader* program ($M = 549.44$, $SD = 31.48$). The effect size as measured by η^2 indicated a medium effect of .08. The 95% confidence interval for the difference in means ranged from 7.42 to 38.16. Figure 2 shows the distribution of seventh-grade reading-language arts scores by type of reading program.

o = an observation between 1.5 times to 3.0 times the interquartile range
* = an observation more than 3.0 times the interquartile range

Figure 2. Boxplot for Seventh-Grade Reading-Language Arts Scores by Reading Program

An independent samples *t* test was conducted to evaluate $Ho1_3$ to determine if there was a significant difference between the eighth-grade reading-language arts scores of students who participated in the *Accelerated Reader* program versus students who participated in the Sustained Silent Reading strategy. The test was significant, $t(106) = 4.81$, $p < .01$. Therefore, the null hypothesis was rejected. The mean for eighth-grade students in the *Accelerated Reader* program ($M = 568.10$, $SD = 38.93$) was over 32 points higher than the mean for students in the Sustained Silent Reading strategy ($M = 535.85$, $SD = 30.72$). The effect size as measured by η^2 indicated a large effect of .18. The 95% confidence interval for the difference in means ranged from 18.96 to 45.54. Figure 3 shows the distribution of eighth-grade reading-language arts scores by type of reading program.
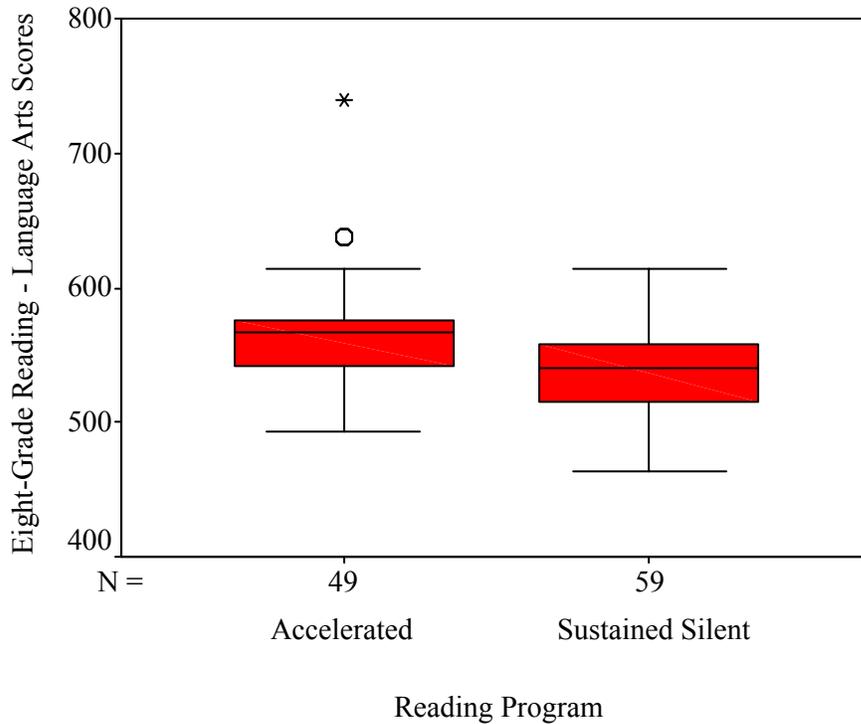
o = an observation between 1.5 times to 3.0 times the interquartile range
* = an observation more than 3.0 times the interquartile range

Figure 3. Boxplot for Eighth-Grade Reading-Language Arts Scores by Reading Program

Research Question #2

To what extent, if any, are there differences between the TCAP reading-language arts scale scores based on gender of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To analyze this research question, three two-way ANOVA models were used to test the hypotheses, one two-way ANOVA model was used for each grade level. Each two-way ANOVA tested three null hypotheses.

Two-way ANOVA model 1:

Ho2$_1$: There is no difference between TCAP reading-language arts scale scores of sixth-grade male and female students.

Ho2$_2$: There is no difference between the TCAP reading-language arts scale scores of

sixth-grade students who participated in the *Accelerated Reader* program and

sixth-grade students who participated in the Sustained Silent Reading strategy.

Ho2$_3$: For the TCAP reading-language arts scale scores of sixth-grade students, there is

no significant interaction between gender and the type of reading program in

which students participated.

A two-way ANOVA was used to evaluate Ho1$_1$ – Ho1$_3$. The two-way gender by type of

reading program interaction was not significant, F (1, 104) = 2.90, p = .09. Therefore, the null

hypothesis Ho2$_3$ was retained. With regard to gender, there was no significant difference

between the male and female sixth-grade reading-language arts means, F (1, 104) = .04, p = .84.

Therefore, the null hypothesis Ho2$_1$ was retained. The effect size for gender, as measured by η^2,

was very small (< .01). In addition, the results showed there was a significant difference in

sixth-grade reading scores between types of reading programs, $F(1, 104)$ = 5.21, p = .02.

Therefore, the null hypothesis Ho2$_2$ was rejected. The effect size for type of reading program as

measured by η^2 was small (.05). This finding replicates the findings of the t test in research

question #1. Table 3 shows the means and standard deviations for sixth-grade TCAP reading-

language arts scores by gender and type of reading program. Figure 4 shows sixth-grade

reading-language arts scores by gender and type of reading program.

Table 3

Means and Standard Deviations for Sixth-Grade TCAP Reading-Language Arts Scores by

Gender and Type of Reading Program

		n	M	SD
Gender:	Reading Program:			
Female	Accelerated Reading	26	541.54	33.07
	Sustained Silent Reading	28	516.46	31.87
	Total	54	528.54	

Table 3 (continued)

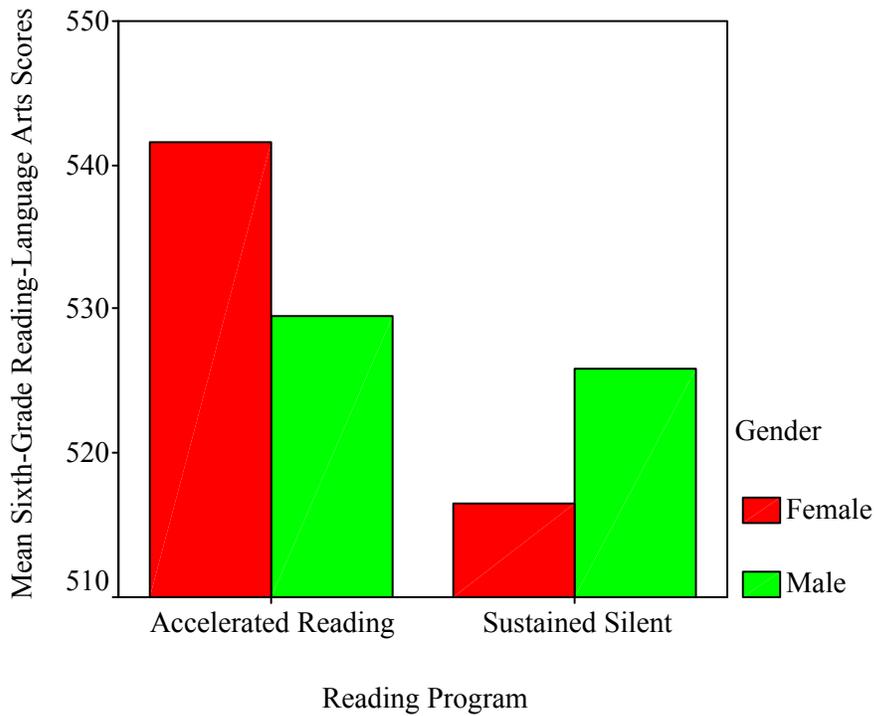|		n	M	SD
Male	Accelerated Reading	23	529.57	30.78
	Sustained Silent Reading	31	525.90	33.80
	Total	54	527.46	32.30
Total	Accelerated Reading	49	535.92	32.25
	Sustained Silent Reading	59	521.42	32.96
	Total	108	528.00	33.29

Figure 4. Bar Graph for Sixth-Grade Reading-Language Arts Scores by Gender and Type of Reading Program

Two-way ANOVA model 2:

Ho2$_4$: There is no difference between TCAP reading-language arts scale scores of

seventh-grade male and female students.

Ho2$_5$: There is no difference between the TCAP reading-language arts scale scores of

seventh-grade students who participated in the *Accelerated Reader* program and

seventh-grade students who participated in the Sustained Silent Reading strategy.

Ho2$_6$: For the TCAP reading-language arts scale scores of seventh-grade students, there

is no significant interaction between gender and the type of reading program in

which students participated.

A two-way ANOVA was conducted to evaluate the differences in seventh-grade reading-

language arts scores based on gender and type of reading program. In this ANOVA model the

two-way gender by type of program interaction was significant, F (1,104) = 6.11, p = .02.

Therefore, the null hypothesis for Ho2$_6$ was rejected. When there is significant interaction, the

effect of one factor cannot be evaluated in isolation of the effect of the other factor in the model.

For that reason, the null hypotheses for both gender and type of reading program were not tested.

Instead, the nature of the interaction was investigated. As shown in Figure 4, there was little

difference in the reading-language arts means of males in the *Accelerated Reader* Program (M =

538.87, SD = 30.06) and males in the Sustained Silent Reading strategy (M = 535.06, SD =

45.72). However, the mean for females in the *Accelerated Reader* program (M = 558.81, SD =

30.22) was 41.5 points higher than the mean for females in the Sustained Silent Reading strategy

(M = 517.36, SD = 45.39). Table 4 shows the means and standard deviations of the seventh-

grade reading-language arts scores by gender and type of reading program. Figure 5 shows the

bar graph for seventh-grade reading-language arts scores by type of reading program and gender.

Table 4

Means and Standard Deviations for Seventh-Grade TCAP Reading-Language Arts Scores by Gender and Type of Reading Program

Gender:	Reading Program:	N	M	SD
Female	Accelerated Reading	26	558.81	30.22
	Sustained Silent Reading	28	517.36	45.39
	Female Total	54	537.35	43.79
Male	Accelerated Reading	23	538.87	30.06
	Sustained Silent Reading	31	535.06	45.72
	Male Total	54	536.69	39.52
Total	Accelerated Reading	49	549.45	31.48
	Sustained Silent Reading	59	526.66	46.04
	Grand Total	108	537.00	41.52

Figure 5. Bar Graph for Seventh-Grade TCAP Reading-Language Arts Scores by Gender and Type of Reading Program

Two-way ANOVA model 3:

Ho2$_7$: There is no difference between TCAP reading-language arts scale scores of eighth-grade male and female students.

Ho2$_8$: There is no difference between the TCAP reading-language arts scale scores of eighth grade students who participated in the *Accelerated Reader* program and eighth-grade students who participated in the Sustained Silent Reading strategy.

Ho2$_9$: For the TCAP reading-language arts scale scores of eighth-grade students, there is no significant interaction between gender and the type of reading program in which students participated.

A two-way ANOVA was conducted to evaluate the differences in eighth-grade reading-language arts scores based on gender and type of reading program. In this ANOVA model, the two-way gender by type of reading program interaction was significant, $F(1,104) = 5.23$, $p = .02$. Therefore, the null hypothesis for Ho2$_9$ was rejected. Again, because the interaction term was significant, the null hypotheses for the main effects of gender and type of reading program were not tested. Instead, the nature of the significant interaction was investigated. As shown in Figure 5, among eighth-grade students in the Sustained Silent Reading strategy, there was virtually no difference in the means of males ($M = 536.94$, $SD = 31.12$) and females ($M = 534.64$, $SD = 30.80$). However, among eighth-grade students in the *Accelerated Reader* program, the mean for females ($M = 581.04$, $SD = 44.91$) was over 21.5 points higher than was the mean for males ($M = 553.48$, $SD = 24.38$). Table 5 shows the means and standard deviations of the eighth-grade reading-language arts scores by gender and type of reading program. Figure 6 shows the bar graph for eighth-grade TCAP reading-language arts scores by type of reading program and by gender.

Table 5

Means and Standard Deviations for Eight-Grade TCAP Reading-Language Arts Scores by Gender and Type of Reading Program

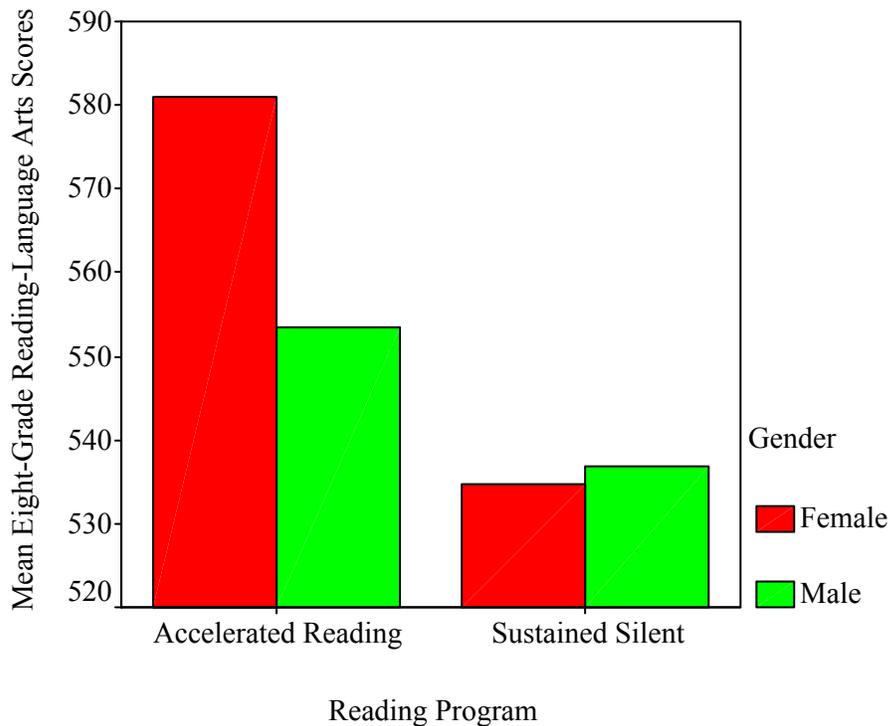| Gender:	Reading Program:	n	M	SD
Female	Accelerated Reading	26	581.04	44.91
	Sustained Silent Reading	28	534.64	30.80
	Female Total	54	556.98	44.52
Male	Accelerated Reading	23	553.48	24.38
	Sustained Silent Reading	31	536.96	31.12
	Male Total	54	543.98	29.38
Total	Accelerated Reading	49	568.10	38.93
	Sustained Silent Reading	59	535.85	30.72
	Grand Total	108	550.48	38.10

Figure 6. Bar Graph for Eighth-Grade TCAP Reading-Language Arts Scores by Gender and Type of Reading Program

Research Question #3

To what extent, if any, are there differences between the TCAP reading-language arts scale scores based on socioeconomic status of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To analyze this research question, three two-way ANOVA models were used to test the hypotheses, one two-way ANOVA for each grade level. In each model, socioeconomic status was measured in terms of receiving free- or reduced-price meals. Each two-way ANOVA tested three null hypotheses.

From the research questions, the following null hypotheses were tested:

Two-way ANOVA model 4:

$Ho3_1$: There is no difference between TCAP reading-language arts scale scores of sixth-grade students receiving free- or reduced-price meals and students who are not receiving free-or reduced-price meals.

$Ho3_2$: There is no difference between the TCAP reading-language arts scale scores of sixth-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

$Ho3_3$: For the TCAP reading-language arts scale scores of sixth-grade students, there is no significant interaction between socioeconomic status and the type of reading program in which students participated.

A two-way ANOVA was used to evaluate the differences in sixth-grade reading-language arts scores based on students' participation in free- or reduced-price meals (socioeconomic status) and type of reading program. The two-way socioeconomic status by type of program interaction was not significant, $F(1, 104) = .21$, $p = 65$. Therefore, $Ho3_3$ was retained. Likewise, there was no significant difference between students receiving free- or reduced-price meals and students who did not receive free- or reduced-price meals, $F(1, 104) = 3.12$, $p = .08$. Therefore, the null hypothesis $Ho3_1$ was retained. The effect size for free- or reduced-price meals means, as measured by η^2, was small (.03). There was no significant difference in the sixth-grade reading-

language arts mean for students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy, $F(1, 104), = 3.77, p = .06$. Therefore, the null hypothesis $Ho3_2$ was retained. The effect size for type of reading program was small (.04). Whereas the *t* test in research question #1 was significant, when the effect of socioeconomic status was adjusted for in the two-way ANOVA model, the main effect of the type of reading program diminished somewhat. Table 6 shows the means and standard deviations for the sixth-grade reading-language arts scores by participation in the free- or reduced-price meals program and type of reading program. Figure 7 shows sixth-grade students who participate in the free and reduced price meals program versus students who do not participate in the free and reduced price meals and type of reading program.

Table 6

Means and Standard Deviations for Sixth-Grade TCAP Reading-Language Arts Scores by Participation Versus Non-Participation in the Free- or Reduced-Price Meals Program and Type of Reading Program

		n	*M*	*SD*
Free- or Reduced-Price Meals:	Reading Program:			
No	Accelerated Reading	36	538.25	32.39
	Sustained Silent Reading	32	528.28	29.53
	Does Not Participate Total	68	533.59	31.24
Yes	Accelerated Reading	13	529.46	32.31
	Sustained Silent Reading	27	513.30	35.45
	Participates Total	40	518.55	34.90
Total	Accelerated Reading	49	535.92	32.25
	Sustained Silent Reading	59	521.42	32.96
	Grand Total	108	528.00	33.29
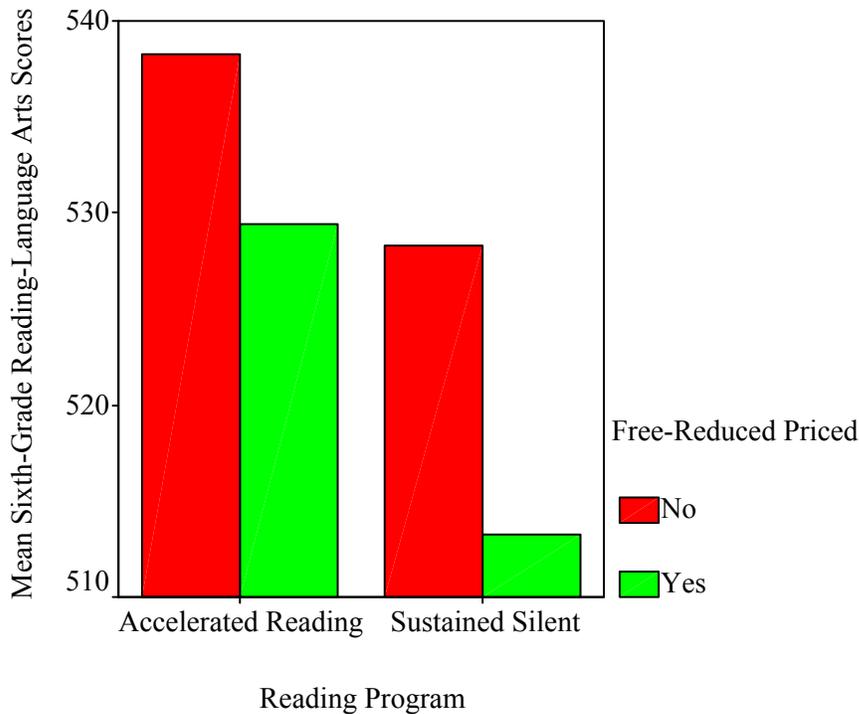
Figure 7. Sixth-Grade TCAP Reading-Language Arts Scores by Participation and Nonparticipation in Free and Reduced Price Meals and Type of Reading Program

Two-way ANOVA model 5:

Ho3$_4$: There is no difference between TCAP reading-language arts scale scores of seventh-grade students receiving free- or reduced- price meals and students who are not receiving free- or reduced-price meals.

Ho3$_5$: There is no difference between the TCAP reading-language arts scale scores of seventh-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

Ho3$_6$: For the TCAP reading-language arts scale scores of seventh-grade students, there is no significant interaction between socioeconomic status and the type of reading program in which students participated.

A two-way ANOVA was used to evaluate the differences in seventh-grade reading-language arts scores based on free- or reduced-price meals and type of reading program. The two-way meals program participation by type of reading program interaction was not significant, $F(1, 104) = .003$, $p = .95$. As a result, the null hypothesis Ho3$_6$ was retained. Likewise, there was no significant difference between students participating in free- or reduced-price meals and students who did not participate in free- or reduced-price meals, $F(1, 104) = .27$, $p = .61$. Therefore, the null hypothesis Ho3$_4$ was retained. The effect size for free- or reduced-price meals, as measured by η^2, was quite small (<.01). There was a significant difference in the seventh-grade reading-language arts means of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy $F(1, 104) = 6.90$, $p = .01$ For that reason, the null hypothesis Ho3$_5$ was rejected. The effect size for type of reading program was medium (.06). This finding replicated the statistical significance of the *t* test in research question #1. Table 7 shows the means and standard deviations for the seventh-grade reading-language arts scores by participation in the free- or reduced-price meals program and type of reading program. Figure 8 shows seventh-grade students who participate in the free and reduced price meals versus students who do not participate in the free and reduced price meals and type of reading program.

Table 7

Means and Standard Deviations for Seventh-Grade TCAP Reading-Language Arts Scores by Participation Versus Nonparticipation in the Free- or Reduced-Price Meals Program and Type of Reading Program

		n	*M*	*SD*
Free- or Reduced-Priced Meals:	Reading Program:			
No	Accelerated Reading	36	550.47	33.36
	Sustained Silent Reading	32	528.88	58.17
	Does Not Participate Total	68	540.31	47.59

Table 7 (continued)

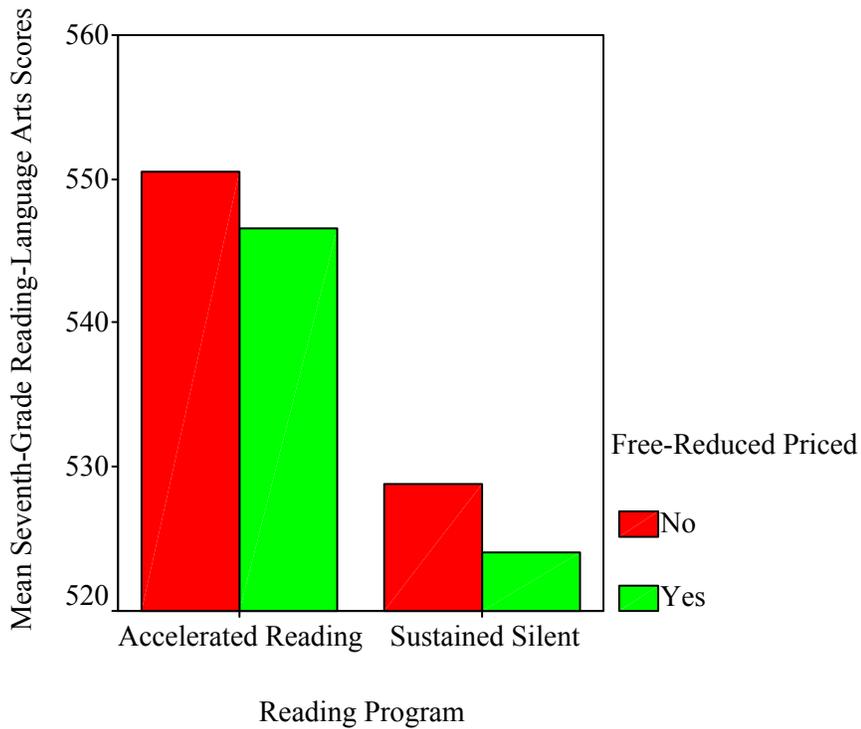|		n	M	SD
Yes	Accelerated Reading	13	546.62	26.56
	Sustained Silent Reading	27	524.04	26.09
	Participates Total	40	531.38	28.03
Total	Accelerated Reading	49	549.45	31.48
	Sustained Silent Reading	59	526.66	46.04
	Grand Total	108	537.00	41.52

Figure 8. Bar Graph for Seventh-Grade TCAP Reading-Language Arts Scores by Participation and Nonparticipation in Free and Reduced Price Meals and Type of Reading Program

Two-way ANOVA model 6:

Ho3$_7$: There is no difference between TCAP reading-language arts scale scores of eighth-grade students receiving free- or reduced- price meals and students who are not receiving free- or reduced-price meals.

Ho3$_8$: There is no difference between the TCAP reading-language arts scale scores of eighth-grade students who participated in the *Accelerated Reader* program and sixth-grade students who participated in the Sustained Silent Reading strategy.

Ho3$_9$: For the TCAP reading-language arts scale scores of eighth-grade students, there is no significant interaction between socioeconomic status and the type of reading program in which students participated.

A two-way ANOVA was used to evaluate the differences in eighth-grade reading-language arts scores based on students who did or did not participate in the free- or reduced-price meals program and type of reading program. The two-way meals program participation by type of reading program interaction was not significant, $F(1,104) = .211$, $p = .65$. Ho3$_9$ was retained. In addition, there was no significant difference between students who participated in the free- or reduced-price meals program and those who did not participate $F(1,104) = 2.07$, $p = .15$. Therefore, the null hypothesis Ho3$_7$ was retained. The effect size for free- or reduced-price meals, as measured by η^2, was small (.02). Finally, there was a significant difference in the eighth-grade reading-language arts means of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy, $F(1, 104) = 18.81$, $p = < .01$. Hence, the null hypothesis Ho3$_8$ was rejected. The effect size for type of reading program was large (.15). This finding replicated the finding of the *t* test in research question #1. Table 8 shows the means and standard deviations for the eighth-grade reading-language arts scores by participation in the free- or reduced-price meals program and the type of reading program. Figure 9 shows eighth-grade students who participate in the free and reduced price meals versus students who do not participate in the free and reduced price meals and type of reading program.

Table 8

Means and Standard Deviations for Eight-Grade TCAP Reading-Language Arts Scores Versus Nonparticipants by Participation Versus Nonparticipation in the Free- or Reduced-Price Meals Program and Type of Reading Program

|		*n*	*M*	*SD*
Free- or Reduced-Price Meals:	Reading Program:			
No	Accelerated Reading	36	569.97	41.98
	Sustained Silent Reading	32	542.09	29.81
	Does Not Participate Total	68	556.85	39.10
Yes	Accelerated Reading	13	562.92	29.73
	Sustained Silent Reading	27	528.44	30.67
	Participates Total	40	539.65	34.16
Total	Accelerated Reading	49	568.10	38.93
	Sustained Silent Reading	59	535.85	30.72
	Grand Total	108	550.48	38.10
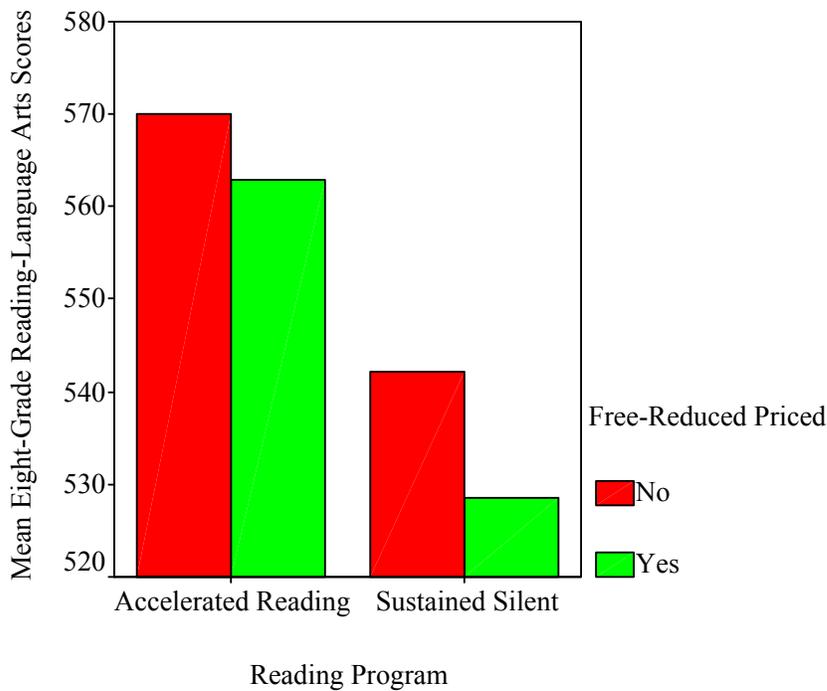
Figure 9. Eighth-Grade TCAP Reading-Language Arts Scores by Participation and Nonparticipation in Free and Reduced Price Meals and Type of Reading Program

Summary

Chapter 4 included the analysis of data. Chapter 5 includes the summarized findings of this study and the conclusions. The chapter also contains limitations and recommendations for practice and further research.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine if a difference existed between TCAP scores of students who used the *Accelerated Reader* (AR) program and students who used Sustained Silent Reading strategy (SSR) as measured by the Tennessee Comprehensive Assessment Program (TCAP). The TCAP scores of the students who participated in the *Accelerated Reader* program were compared to the scores of the students using the Sustained Silent Reading strategy. This study also focused on the relationship between demographics and *Accelerated Reader* and Sustained Silent Reading. Statistical analyses were conducted on variables of socioeconomic status and gender to determine if the use of *Accelerated Reader* or Sustained Silent Reading has any association on the reading scores of these groups. TCAP reading-language arts scale scores were obtained for a 3-year period. Data were analyzed using 108 students from two schools in Tennessee.

Summary of Findings

Because technology has come into being in the 20th century, it has become an integral part of the school curriculum. Many companies promote software with the promise of increasing student achievement; Renaissance Learning is such a company. It boasts the fact that *Accelerated Reader* is the most widely-used software program available and has produced a substantial amount of supportive research. The research compiled by the company has reported positive findings; however, little empirical research was found offering conclusive evidence that *Accelerated Reader* increases student achievement. Sustained Silent Reading is a strategy used by numerous educators. It is an attractive method because there is no cost to implement the strategy. Like *Accelerated Reader*, studies have not confirmed findings that Sustained Silent Reading has made a difference on increasing student achievement.

The review of literature detailed mixed results for both the *Accelerated Reader* program and the Sustained Silent Reading strategy. Since the introduction of the *No Child Left Behind Act*, educators, policy-makers, and administrators have been more interested in scientifically proven, research-based teaching methods to improve student achievement.

This was an ex-post facto quantitative research design study. It was "ex-post facto" because the data already had been collected by the state and were analyzed "after the fact." I used both descriptive and inferential statistics to make mean comparisons between treatment groups (*Accelerated Reader* and Sustained Silent Reading strategy) and for some research questions concerning mean comparisons for gender and treatment groups. Comparisons across grade levels were not made because the TCAP tests are not comparable across grades. Instead, the treatment, gender, and socioeconomic comparisons were conducted separately for each grade.

The analysis for this research was based on three research questions. The dependent (criterion) variable used in this study was the TCAP reading-language arts scale scores. There were two independent (predictor) variables or treatment groups:

1. Group: (a) *Accelerated Reader* program and (b) Sustained Silent Reading strategy.
2. Gender: two levels (male and female).
3. Low Socioeconomic Status (SES): For the purpose of this study, this comprises students who were on the free- and reduced-price meals program and students who were not on the free- and reduced-price meals program.

The population consisted of 108 students, 49 who participated in the *Accelerated Reader* program and 59 who participated in the Sustained Silent Reading strategy. The results obtained from the data have been summarized for each research question.

Research Question #1

To what extent, if any, is there a difference in the TCAP reading-language arts scale scores between students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To answer this research question, three null hypotheses were tested with a *t* test for independent samples, one for each of the grade levels.

The results of the analysis indicated there was a significant difference in the TCAP reading-language arts scores of sixth-grade students who participated in the *Accelerated Reader* program compared to the Sustained Silent Reading strategy. The mean sixth-grade reading-language arts scores for students in the *Accelerated Reader* program was 14.5 points higher than was the mean for students in the Sustained Silent Reading strategy.

There was a significant difference in the TCAP reading-language arts scores for seventh-grade students who participated in the *Accelerated Reader* program as compared to the Sustained Silent Reading strategy. The mean seventh-grade reading-language arts scores for students participating in the *Accelerated Reader* program was 22.8 points higher than was the mean for students in the Sustained Silent Reading strategy.

Analysis of the data determined there was also a significant difference between the eighth-grade reading-language arts scores of students who participated in the *Accelerated Reader* program versus the Sustained Silent Reading strategy. The mean eighth-grade reading-language arts scores for students participating in the *Accelerated Reader* program was 32.3 points higher than students' mean scores in the Sustained Silent Reading strategy.

Evidence shown throughout the data indicated an increase in the mean difference for the *Accelerated Reader* program for sixth, seventh, and eighth grades. These findings coincided with much of the literature reviewed in Chapter 2. Significant differences in achievement were reported for both the *Accelerated Reader* program and the Sustained Silent Reading strategy. Paul et al. (1997) as well as Peak and Dewalt (1994) concluded the *Accelerated Reader* program had a positive effect on students' achievement. Scott (1999) reported significant gains in

achievement for students with disabilities. Nunnery et al. (2006) concluded that the implementation of *Accelerated Reader* had positive effects on the reading achievement of at-risk students across grades three to six. They also noted that there were larger effects in earlier grades and small effects in the upper grades. Vollands et al. (1999) also documented gains in reading scores even without full implementation of the *Accelerated Reader* program.

According to researchers Block and Mangieri (2002) and Gallik (1999), students who participated in Sustained Silent Reading had higher test scores on comprehension tests, maintained better grade-point averages, and developed more advanced writing styles than did those students who chose not to participate in recreational reading. Owens (2003) studied the effects of Sustained Silent Reading on vocabulary, reading comprehension, and combined scores on reading and comprehension. Owens (2003) reported improvement in mean scores for all grade levels in all areas tested.

Many studies have been conducted by researchers in an effort to support the notion that the use of *Accelerated Reader* increases students' achievement. However, no conclusive results have been reported that could positively support that conclusion.

Research Question #2

To what extent, if any, are there differences between the TCAP reading-language arts scale scores based on gender of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy?

To analyze this research question, three two-way ANOVAs were used to test the hypotheses, one two-way ANOVA for each grade level. Each two-way ANOVA tested three null hypotheses.

The findings shown throughout the analysis confirm that there was no significant difference between male and female sixth-grade reading-language arts means. The sixth-grade ANOVA model confirmed there is no significant interaction between gender and the type of

reading program in which the students participated. The sixth-grade reading-language arts mean for females ($M = 528.54$, $SD = 34.54$) was nearly identical to the mean for sixth-grade males ($M = 527.46$, $SD = 32.30$). The findings do indicate there was a significant difference in the reading-language arts scores of sixth-grade students who participated in the *Accelerated Reader* program ($M = 535.92$, $SD = 32.25$) compared to the Sustained Silent Reading strategy ($M = 521.42$, $SD = 32.96$).

The seventh-grade ANOVA model confirmed the two-way gender by type of program interaction was significant. When there is significant interaction, the effect of one factor cannot be evaluated in isolation of the effect of the other factor in the model. For that reason, the null hypotheses for both gender and type of program were not tested. Instead, the nature of the interaction was investigated. There was little difference between the males who participated in *Accelerated Reader* and the males who participated in the Sustained Silent Reading strategy. However, females in the *Accelerated Reader* program scored 41.5 points higher than did the females in the Sustained Silent Reading strategy.

The findings for the eighth-grade ANOVA model confirmed that the two-way gender by type of reading program interaction was significant. When there is significant interaction, the association of one factor cannot be evaluated in isolation of the association of the other factor in the model. For that reason, the null hypotheses for both gender and type of program were not tested. Instead, the nature of the significant interaction was investigated. Among eighth-grade students in the Sustained Silent Reading strategy, there was virtually no difference in the means of the males and the females. However, among eighth-grade students in the *Accelerated Reader* program, the mean for the females was almost 22 points higher than the mean for the males.

The findings of the differences between gender and type of reading program were not clearly supported by the review of literature in this study. Bork (1999) studied the effects of

direct reading using the *Accelerated Reader* program. His findings indicated that there were no

significant associations between achievement with respect to age, grade, or gender. However,

Klecker (2005) reported a significant difference in the achievement of females compared to

males. She compiled data using the National Assessment of Educational Progress (NAEP)

dataset. She compared the differences in scores from 1992, 1994, 1998, 2000, 2002, and 2003.

The sample population included 4th-, 8th-, and 12th-grade students from schools across the

country. The differences in mean scale for gender were statistically significant at each grade

level for each year (Klecker). Based on the reading scores, females outscored their male

counterparts for every year in the study.

Research Question #3

To what extent, if any, are there differences between the TCAP reading-language arts

scale scores based on socioeconomic status of students who participated in the *Accelerated

Reader* program and students who participated in the Sustained Silent Reading strategy?

To analyze this research question, three two-way ANOVAs were used to test the

hypotheses, one two-way ANOVA for each grade level. Each two-way ANOVA tested three

null hypotheses.

The findings indicated there was no significant difference between sixth-grade students

who received free- or reduced-price meals and sixth-grade students who did not receive free- or

reduced-price meals. There was also no significant interaction between socioeconomic status

and reading program. The findings also indicated there was no significant difference in the

sixth-grade reading-language arts means of students who participated in the *Accelerated Reader*

program and students who participated in the Sustained Silent Reading strategy. However, the

sixth-grade reading-language arts mean for students in the *Accelerated Reader* program was 14.5

points higher than was the mean for students in the Sustained Silent Reading strategy. Although

the *t* test for research question #1 was significant, after the effects of socioeconomic status were

adjusted for in the two-way ANOVA model, the main effects of the type of reading program diminished somewhat.

The findings from the two-way ANOVA were used to evaluate the differences in seventh-grade reading-language arts scores based on students' participation in the free- or reduced-price meals program and type of reading program. The findings illustrated that the two-way meals by type of program interaction was not significant. There was no significant difference between students who participated in the free- or reduced-price meals program and students who did not participate in the program. The seventh-grade reading-language arts mean for students who did not receive free- or reduced-price meals ($M = 540.31$, $SD = 47.59$) was nearly identical to the mean for seventh-graders who did participate in the program ($M = 531.38$, $SD = 28.03$). However, there was a significant difference in the seventh-grade reading-language arts means of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy. The seventh-grade reading-language arts mean for students in the *Accelerated Reader* program ($M = 549.45$, $SD = 31.48$) was 22.8 points higher than was the mean for students in the Sustained Silent Reading strategy ($M = 526.66$, $SD = 46.04$). This finding replicated the statistical significance of the *t* test in research question #1.

The findings show there were no significant differences between eighth-grade students who participated in the free- or reduced-price meals program and eighth-grade students who did not participate in the program. The eighth-grade reading-language arts mean for students who did not receive free- or reduced-price meals ($M = 556.85$, $SD = 39.10$) was larger than the mean for eighth-grade students who did participate in the program ($M = 539.65$, $SD = 34.16$). The findings also confirmed that the two-way free- or reduced-price meals participants by type of reading program interaction was not significant. Findings indicated there was a significant difference in the eighth-grade reading-language arts means of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy. The eighth-grade reading-language arts mean for students in the *Accelerated Reader* program ($M = 568.10$, $SD = 38.93$) was 32.3 points higher than was the mean for students in the

Sustained Silent Reading strategy (M = 535.85, SD = 30.72). This finding replicated the finding regarding research question #1.

The findings for the achievement of students receiving free- or reduced-price meals compared to students who were not in the program was supported by the review of literature in this study. Paul et al. (1996) concluded that students in a majority of schools that owned *Accelerated Reader* performed better than did socioeconomically comparable students in the non-*Accelerated Reader* schools. Vollands et al. (1999) compared students who used the *Accelerated Reader* program to students who did not use the program and found that students from a low socioeconomic group who used the *Accelerated Reader* program obtained better results even though the non-*Accelerated Reader* group had a more intensive instructional program. According to Gallik (1999), students' recreational reading time had a direct bearing on their academic success. Facemire (2000) reported a significant increase in the comprehension scores of low socioeconomic third graders. Johnson and Howard (2003) studied 755 third, fourth, and fifth graders from a low-socioeconomic environment. Their study revealed that all three groups improved their reading skills.

Conclusions

The focus of this study was on a comparison of the *Accelerated Reader* program and Sustained Silent Reading strategy using TCAP reading-language arts scale scores. Data were obtained to measure the interaction of the program type, gender, and students who did and did not participate in the free- or reduced-price meals program. The data collected for this study indicated gains in TCAP scores for the students participating in the *Accelerated Reader* program. There was no conclusive evidence to prove that socioeconomic status had any correlation on students' achievement. Evidence did indicate gender and type of program together were associated with students' achievement scores. From this study, three conclusions were developed.

Conclusion #1

According to the findings from this study, there was a significant difference in the TCAP reading-language arts scale scores for sixth,- seventh,- and eighth-grade students who participated in the *Accelerated Reader* program. The data illustrated a gradual increase in mean differences over the 3-year period. Sixth-grade students displayed a 14.5 mean difference, seventh-graders displayed 22.8, and eighth graders showed a 32.3 mean difference.

This study provides evidence, although not conclusive, that the *Accelerated Reader* program might have made a difference on TCAP reading-language arts achievement scores. The students who participated in the *Accelerated Reader* program outscored the students who participated in Sustained Silent Reading at the sixth-, seventh-, and eighth-grade levels. Vollands et al. (1999) documented gains in reading scores even without full implementation of the *Accelerated Reader* program.

Conclusion #2

Based on the findings of this study, there were no significant differences between male and female sixth-grade reading-language arts means. The findings indicated there was a significant difference in the reading-language arts scores of sixth-grade students who participated in the *Accelerated Reader* program compared to the Sustained Silent Reading strategy. However, the data illustrated no significant interaction between gender and the type of reading program in which the students participated. Accordingly, this study does not support the perception that gender was associated with reading-language arts scores at the sixth-grade level as measured by the TCAP.

The findings from the study indicated both the seventh and eighth-grade two-way gender by type of program interactions were significant. When there is significant interaction, the association of one factor cannot be evaluated in isolation of the association of the other factor in the model. For that reason, the null hypotheses for both gender and type of program were not tested. Instead, the nature of the interaction was investigated. Seventh- and eighth-grade

females who used the *Accelerated Reader* program outscored seventh- and eighth- grade males who used the *Accelerated Reader* program.

Conclusion #3

Based on the findings of this study, there was no significant difference between sixth-grade students who received free- or reduced-price meals and sixth-grade students who did not receive free- or reduced-price meals. The findings also indicated there was no significant difference in the sixth-grade reading-language arts means of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy. The findings of the two-way free- or reduced-price meals participants by type of program interaction was not significant between sixth-grade students participating in the free- or reduced-price meals program and sixth-grade students who did not participate in the program. It should be noted that School B had 48% student participation in the free- and reduced-price meals program whereas School A had 41% participation.

Based on the findings, the results of the seventh-grade reading-language arts mean for students who did not receive free- or reduced-price meals was nearly identical to the mean for seventh-graders who did participate in the free- or reduced-price meals program. According to the findings, there was a significant difference in the seventh-grade reading-language arts means of students who participated in the *Accelerated Reader* program and students who participated in the Sustained Silent Reading strategy. The findings for the reading-language arts scale scores of the seventh-graders indicated no significant interaction between free- or reduced-price meals status and the type of reading program.

Findings indicate there were no significant differences between eighth-grade students participating in the free- or reduced-price meals program and eighth-grade students who did not participate in the program. Findings indicate a significant difference in the eighth-grade students who participated in the *Accelerated Reader* program and the students who participated in the

Sustained Silent Reading strategy. The findings for the eighth-grade students reported for the two-way meals participation program by type of program interaction was not significant.

Limitations

This study was confined to two schools in rural Tennessee. No pretest data were available prior to sixth-grade. The *Accelerated Reader* program required students to take numerous tests, whereas no type of assessments were used in Sustained Silent Reading. Another limitation was the degree of implementation used by the teachers of both the *Accelerated Reader* program and the Sustained Silent Reading strategy. As noted earlier, teachers used both programs in various ways with little consistency across grade levels. Therefore, the results of this study may not be generalized to any other school system.

Recommendations for Practice

This study indicated, although not conclusively, that the *Accelerated Reader* program might be a useful tool to implement in the classroom. The results pointed to some increases in student achievement across grade levels regardless of socioeconomic status or gender. These recommendations might be of use to school administrators, policy makers, and educators. The following recommendations to improve practice are made:

1. the participants in this study should continue using the *Accelerated Reader* program;

2. teachers should be provided with continuous training and technical support;

3. equipment should be maintained and technology updated regularly;

4. reading-language arts TCAP gains should be compared annually; and

5. consistency should be maintained in the use of the program across grade levels.

Recommendations for Further Research

Teachers, administrators, members of boards of education, and officials from state departments of education are constantly searching for the best practices for students'

achievement. The *No Child Left Behind Act,* signed into law by President Bush in 2002, is a primary example of the initiative taken by the federal government to ensure that all students are successful. State and national groups increasingly are documenting and sharing best practices and those programs and strategies that address the critical issues of parent involvement and teacher quality and effectiveness (Furger, 2005). Educators struggle to develop more effective strategies to increase students' achievement. A number of recommendations were developed as a result of the findings of this study:

1. This study should be replicated using a larger sample of schools.

2. A longitudinal study should be conducted with a large population.

3. This study should be replicated using high school students.

4. This study should be replicated with teachers who use the same degree of implementation of the *Accelerated Reader* program and the Sustained Silent Reading strategy.

5. A longitudinal study should be performed using Sustained Silent Reading with middle grade students.

6. A study based on intrinsic and extrinsic incentives should be conducted.

7. A study of the *Accelerated Reader* program in Tennessee schools should be conducted by an educational evaluator such as Popham (2004).

REFERENCES

American Library Association. (2006). Retrieved March 3, 2006, from http://www.ala.org/

Anderson, C. (2000). Sustained Silent Reading: Try it, you'll like it. *The Reading Teacher*, 54, 258-259.

Barron, B. G. (1990). Make room for children's literature. *Reading Improvement, 27,* 282-283.

Biggers, D. (2001). The argument against accelerated reader. *Journal of Adolescent & Adult Literacy*, 45, 72-75.

Bird, R. (2003). What pioneers read. *Journal of the West. 42,* 3-5.

Block, C., & Mangieri, J. (2002). Recreational reading: 20 years later. *Reading Teacher, 55,* 572-580.

Bork, R. (1999). *The effectiveness of the accelerated reader program on improving student instructional reading levels as measured by the standardized test for assessment of reading*. Ed.D. dissertation, Saint Louis University. Retrieved April 7, 2006, from ProQuest Digital Dissertations database (Publication No. AAT 9942754)

Brisco, S. (2003). AR: What are the motives behind the motives? *Teacher Librarian, 30,* 33-34.

Brown, J. (1987). Listening-ubiquitous yet obscure. *Journal of the International Listening Association, 1,* 3-14.

Bryan, G., Fawson, P., & Reutzel, D. (2003). Sustained silent reading: Exploring the value of literature discussion with three non-engaged readers. *Reading Research and Instruction*, *43,* 47-73.

Carter, B. (1996). Hold the applause. *School Library Journal*, *42,* 22- 25.

Chenoweth, K. (2001). Keeping score. *School Library Journal, 47,* 48-52.

Chow, P., & Chou, C. (2006). *Evaluating silent sustained reading in reading classes.* Retrieved March 16, 2006, from http://iteslj.org/Articles/Chow-SSR.html

Donebauer, P. (2006). *Writing*. Retrieved April 7, 2006, from http://www.historyworld.net/

Facemire, N. (2000). *The effect of the accelerated reader on the reading comprehension of third graders*. Unpublished master's thesis, Salem-Teikyo University, Salem, West Virginia. (ERIC Document Reproduction Service ED 442097)

Feyten, C. (1991). The power of listening ability: An overlooked dimension in language acquisition. *The Modern Language Journal*, *75,* 173-180.

Fischer, S. (2001). *A history of writing*. London: St. Edmundsbury Press.

Four pillars of NCLB. (2006). Retrieved April 23, 2006, from http://www.ed.gov/index.jhtml

Furger, R. (2005). NCLB confidential. *Edutopia, 40,* 43.

Gallik, J. (1999). Do they read for pleasure? Recreational reading habits of college students. *Journal of Adolescent & Adult Literacy, 42,* 480-488.

Gardiner, S. (2001). Ten minutes a day for silent reading. *Educational Leadership*, *59,* 32-35.

Gardiner, S. (2005). A skill for life. *Educational Leadership, 63,* 67-70.

Gibson, M. (2002). *An investigation of the effectiveness of the accelerated reader program used with middle school at-risk students in a rural school system.* Ph.D. dissertation, Mississippi State University. Retrieved April 7, 2006, from ProQuest Digital Dissertations database. (Publication No. AAT 3069338)

Green, S., & Salkind, N. (2005). *Using SPSS for windows and macintosh: Analyzing and understanding data* (4th ed.).   Upper Saddle River, NJ: Prentice Hall.

Groce, R., & Groce, E. (2005). Deconstructing the accelerated reader program. *Reading Horizons*, *46,* 17-30.

Higgins, K. (1982). *Sustained silent reading in the fifth grade: The effects of sustained silent reading on speed, comprehension, word study skills, and vocabulary.* Ed.D. dissertation, Brigham Young University, Utah. Retrieved April 1, 2006, from ProQuest Digital Dissertation database. (Publication No. AAT 8129537)

Holman, A. (2002). *Correlational study to determine the effects of the accelerated reader program on the reading comprehension of fourth- and fifth-grade students in Early County, Georgia.* Ed.D. dissertation, University of Sarasota. Retrieved April 7, 2006, from ProQuest Digital Dissertations database. (Publication No. AAT 9826801)

Hopkins, G. (2006). *Silent sustained reading helps develop independent readers (and writers).* Retrieved March 16, 2006, from http://www.education-world.com/

Jehlen, A. (2007). Testing how the sausage is made. *NEA Today*, *25,* 29-34.

Jensen, T. (2002). *Sustained silent reading and young adult short stories for high school classes*. Alan Review. Retrieved April 13, 2006, from http://www.findarticles.com/p/articles

Johnson, R., & Howard, C. (2003). The effects of the accelerated reader program on the reading comprehension of pupils in grades three, four, and five. *The Reading Matrix, 3.*

Johnson, T. (2004). *Accelerated reader*. Retrieved April 2, 2006, from http://www.ferr.org/

Klecker, B. (2005). *The "Gender Gap" in NAEP fourth-, eighth-, and twelfth-grade reading*

scores across years. Paper presented at the annual meeting of the Midwestern Educational Research Association, Columbus, Ohio. (ERIC Reproduction Service Document No. ED490676)

Kohel, P. (2003) *Using accelerated reader: Its impact on the reading levels and Delaware state testing scores of 10th- grade students in Delaware's Milford High School.* Ed.D dissertation, Wilmington College, Delaware. Retrieved April 7, 2006, from ProQuest Digital Dissertations database. (Publication No. AAT 3067785)

Krashen, S. (1993). *The power of reading*. Englewood, CA: Libraries Unlimited.

Krashen, S. (2003). The (lack of) experimental evidence supporting the use of accelerated reader. *Journal of Children's Literature, 29,* 16-30.

Lamme, L. (2003). A literature perspective on accelerated reader. *Journal of Children's Literature*, *29,* 37-45.

Literacy terms. Retrieved March 4, 2008, from http://staffweb.wwcsd.net/moored/litterms.htm

Lynch-Brown, C., & Tomlinson, C. M. (2005). *Essentials of children's literature*. Boston: Pearson.

Mallette, M., Henk, W., & Melnick, S. (2004). The influence of accelerated reader on the affective literacy orientations of intermediate grade students. *Journal of Literacy Research*, *36,* 73-84.

Manguel, A. (1996). *A history of reading*. New York: Penguin Books.

Melton, C., Smothers, B., Anderson, E., Fulton, R., Replogle, W., & Thomas, L. (2002). *A study of the effects of the accelerated reader program on fifth-grade students' reading achievement growth.* Ph.D. dissertation, The University of Mississippi. Retrieved April 7, 2006, from ProQuest Digital Dissertations database. (Publication No. AAT 3072948)

Moser, A. (2006). Sustained silent reading. *School Library Media Activities Monthly*, *23,* 43-45.

Nagy, N., Campenni, C., & Shaw, J. (2000). A survey of sustained silent reading practices in seventh-grade classrooms. Reading Online. Retrieved February 14, 2007, from http://www.readingonline.org/articles/nagy/ssr.html

National Assessment of Adult Literacy. (2003). Retrieved March 22, 2007, from http://nces.ed.gov/

National Assessment of Educational Progress (2007). Reading framework for the 2007 NAEP. Retrieved March 27, 2008, from http://www.nagb.org/

National Reading Panel. (2000). *Report of the national panel: Teaching children to read*.
    Retrieved March 26, 2007, from http://www.nichd.nih.gov/publications/nrp.htm

NCLB. (2005). *No child left behind for policy makers*. Retrieved April 13, 2006, from
    http://www.nclb.gov/

Nunnery, J., Ross, S., & McDonald, S. (2006). A randomized experimental evaluation of the
    impact of accelerated reader/reading renaissance implementation of reading achievement
    in grades 3 to 6. *Journal of Education for Students Placed at Risk*, *11,* 1-18.

Owens, G. (2003). *Effects of sustained silent self-selected reading on vocabulary knowledge
    and reading comprehension among intermediate grade students.* Ed.D dissertation,
    Texas A & M University. Retrieved April 1, 2006, from ProQuest Digital Dissertations
    database. (Publication No. AAT 3094636)

Owens, R. (2004). *Organizational behavior in education*. Boston: Pearson.

Parr, J., & Maguiness, C. (2005). Removing the silent from SSR: Voluntary reading as social
    practice. *Journal of Adolescent & Adult Literacy*, *49,* 98-107.

Paul, T., Swanson, S., Zhang, W., & Hehenberger, L. (1997). *Learning information system
    effects on reading, language arts, math, science, and social studies.* Madison, WI:
    Institute for Academic Excellence.

Paul, T., VanderZee, D., Rue, T., & Swanson, S. (1996). *Impact of accelerated reader on
    overall academic achievement and school attendance.* Paper presented at the National
    Reading Research Center Conference, Atlanta, Georgia.

Pavonetti, L., Brimmer, K., & Cipielewski, J. (2003). Accelerated reader: What are the lasting
    effects on the reading habits of middle school students exposed to accelerated reader in
    elementary grades? *Journal of Adolescent & Adult Literacy*, *46,* 300-311.

Peak, J., & Dewalt, M. (1994). Reading achievement: Effects of computerized reading
    management and enrichment. *ERS Spectrum 12,* 31-34.

Pearson, P. (Ed.). (1996). *Handbook of reading research*. New York: Erlbaum & Associates.

Popham, J. (2004). *America's failing schools*. New York: Routledge Falmer.

Reading at risk: A survey of literary reading in America. (2004). National Endowment of the
    Arts. Retrieved September 24, 2007, from
    http://www.nea.gov/news/news04/ReadingAtRisk.html

Reedy, J. (1994). *Effects of a sustained silent reading strategy with literature response journals
    on third graders' attitude, reading achievement, and writing.* Ed.D dissertation, Baylor
    University, Texas. Retrieved April 1, 2006 from ProQuest Digital Dissertation database.
    (Publication No. AAT 9422758)

Renaissance Learning. (2006). *Better data means better teaching and learning*. Retrieved April
    26, 2006, from http://www.renlearn.com/

Royer, J. M. (2006). *Teachers ask: What are the differences between a formal and informal
    assessment*. Retrieved April 22, 2006, from http://educator.readingsuccesslab.com

Scott, L. (1999). *The accelerated reader program: Reading, achievement, and attitudes of
    students with learning disabilities*. Unpublished doctoral dissertation. Georgia State
    University, Atlanta. (ERIC Document Reproduction Service No. ED 434431)

Seuss, D. (1978). *I can read with my eyes shut*. New York: Random House.

Snow, C., Burns, M., & Griffin, P. (1998). *Preventing reading failure in young children*.
    Washington, DC: National Academy Press.

Stevens, R. (2006). Developing reading fluency: What does the research say? *Catalyst for
    Change*, *34,* 37-44.

Stevenson, J., & Camarata, J. W. (2000). Imposters in whole language clothing: Undressing the
    accelerated reader program. *Talking Points, 11,* 8-11.

Tennessee Department of Education. (2006). *Educator's guide to understanding the TCAP
    achievement test results*. Retrieved December 15, 2006, from http://www.state.tn.us/

TestMate Clarity. (2006). *Assessment & reporting.* Retrieved March 13, 2006, from
    http://www.ctb.com/com/mktg/testmate/_assessment.jsp

Topping, K., & Sanders, W. (2000). Teacher effectiveness and computer assessment of reading:
    Relating value-added and learning information system data. *School Effectiveness and
    School Improvement 11,* 3.

Topping, K., & Paul, T. (1999). Computer-assisted assessment of practice at reading: A large
    scale survey using accelerated reader data. *Reading and Writing Quarterly*, *15,* 213-231.

Trelease, J. (2006). *The read-aloud handbook.* Retrieved April 22, 2006, from
    http://www.trelease-on-reading.com

U. S. Department of Education. (2006). *TCAP/competency test*. Retrieved April 22, 2006, from
    http://www.ed.gov

Vickery, J. (1999). *Drop everything and read*. Retrieved March 21, 2006, from
    http://www.members.tripod.com/~ESL4Kids/tips/read/html

Vollands, S., Topping, K., & Evans, H. (1999). Computerized self-assessment of reading
    comprehension with the accelerated reader: Impact on reading achievement and attitude.
    Reading and Writing Quarterly, *15,* 197-211.

Vygotsky, L. (1986). *Mind and society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Weaver, B. (2006). *Reading assessment and intervention*. Retrieved April 23, 2006, from http://teacher.scholastic.com/reading/bestpractices/assessment/what.htm

Wiesendanger, K., & Bader, L. (1989). Sustained silent reading: Its effects on students' reading habits after they complete the program. *Reading Horizons*, *29,* 162-166.

APPENDIX

Permission to Use Data

Mr. XXXXXX, Principal
XXXXXX Elementary School
XXXXXX, TN

Dear Mr. XXXXXX,

I am a student at East Tennessee State University. I am in the Educational Leadership and Policy Analysis doctoral program. The study I am interested in compares the effectiveness different reading programs using TCAP scores. The purpose of this study is to determine if a difference existed between TCAP scores of students who used the *Accelerated Reader* (AR) program to other students who used Sustained Silent Reading strategy (SSR) as measured by the Tennessee Comprehensive Assessment Program (TCAP). I am interested in examining the scores for sixth-grade students over a 3 year period.

I would like to request permission to obtain and analyze TCAP reading-language arts scale scores from 2004 through 2007. The student names will be coded to protect identity of the participants.

I would also like to talk with the sixth through eighth-grade teachers concerning their method for using the Sustained Silent Reading strategy.

I trust that the findings of this study may be beneficial to other school systems when determining methods to increase student achievement.

Sincerely,

Janie Brown

Permission is granted to Janie Brown to obtain and analyze TCAP reading-language arts scale scores for sixth through eighth-grade students at XXXXXX School for the 2004 through 2007 school years. Mrs. Brown will also have permission to talk with the sixth through eighth-grade teachers concerning methods of using Sustained Silent Reading strategy in the classroom.

_____   _____
Signature   Date

VITA

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