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A Quantitative Examination of Title I and NonTitle I Elementary Schools in East Tennessee
Using Fourth-Grade Math and Reading Standardized Test Scores

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

by
Amy M. Scott
December 2005

Dr. Louise MacKay
Dr. Nancy Dishner
Dr. Jim Lampley
Dr. Cecil Blankenship

Keywords: No Child Left Behind, Title I, NonTitle I, Gender, Economically Disadvantaged,
Students With Disabilities

ABSTRACT

A Quantitative Examination of Title I and NonTitle I Elementary Schools in East Tennessee Using Fourth-Grade Math and Reading Standardized Test Scores

by

Amy M. Scott

In January 2002, President George W. Bush signed the *No Child Left Behind* legislation into law. The law established new standards of accountability for individual students, schools, and school systems. Because of *No Child Left Behind*, the penalties for schools with poor academic performance in our country are the loss of reputation, student enrollment, and financial support. The purpose of this study was to determine if there was a difference in standardized test scores in reading and math between fourth-grade students in Title I schools and those in NonTitle I schools. The study focused on the following subgroups: gender, economically disadvantaged students, and students with disabilities. The data were gathered from an analysis of standardized test scores in reading and math of fourth-grade students in 172 elementary schools located in 21 East Tennessee school systems. The data were collected from the 2002-2003 *Terra Nova* Standardized Assessment Test scores. The *Terra Nova* test is a standardized test used to evaluate academic progress in the state of Tennessee.

In summary, there were some differences between Title I and NonTitle I fourth-grade students in the subject areas of reading and math. When differences were noted, NonTitle I schools performed higher than Title I schools. Significant differences were noted within the subcategory of gender in both reading and math. Significant differences were also noted within the subcategory of students with disabilities in the content area of math. No significant differences were found in reading for students with disabilities. There were no significant differences

between Title I and NonTitle I schools in reading and math within the subcategory of economically disadvantaged students.

DEDICATION

From the bottom of my heart, I would like to thank those who made this experience possible for me. John, Jordan, and John Thomas are some of my most precious gifts on this earth. They have given me support when I needed it most. Stan and Margaret Morrell are wonder parents. They have given me words of encouragement and provided flexible childcare for many years.

It is with a heavy heart that I dedicate this project to Betty Lady McClelland. Although Betty is no longer on this earth, she celebrates this achievement with me from the windows of heaven. My dear friend, we will ride again...on the other side!

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CHAPTER 1

INTRODUCTION TO THE STUDY

In January 2002, President George W. Bush signed the *No Child Left Behind* legislation into law. The law established new standards of accountability for individual students, schools, and school systems. The stated purpose of this legislation was to help the neediest students within the most disadvantaged schools reach the same challenging standards expected of all children (U.S. Department of Education, 2001). Individual schools and school systems can be placed on probation if students fail to produce adequate yearly progress as determined by the state Board of Education. If this occurs, parents receive written notification that their child's school has been placed on a list of schools needing improvement. Parents can choose to transfer their children from a school needing improvement to a public school that is performing better. Because of the link between academic achievement and economic status, many of the schools on this list are Title I schools (U.S. Department of Education, 2003).

In order to ascertain schools' and students' achievement, the state of Tennessee implemented mandatory achievement tests for elementary-school students in grades three through eight (Tennessee Department of Education, 2001). The term Title I school refers to "those schools that receive funds under Title I of the *Elementary and Secondary Education Act* (ESEA). Title I supports programs to improve the academic achievement of children of low-income families in the United States" (U.S. Department of Education, 2003). According to the U.S. Department of Education (2001), Title I is the nation's largest federal assistance program for schools. The Title I program was reauthorized under the *No Child Left Behind Act* of 2001.

This study focused on the comparison of Title I schools and NonTitle I schools in the academic content areas of reading and math. The schools were located in East Tennessee. Data were gathered from the 2002-2003 *Terra Nova* Standardized Assessment Test scores to

determine if there is a significant difference in the two types of schools. The *Terra Nova* test is a standardized test used to evaluate academic progress in the state of Tennessee. The scores from this test are reported to the Tennessee Department of Education, the local school systems, and the parents.

Statement of the Problem

Currently, the *No Child Left Behind Act* lists penalties for schools with poor academic performance in our country are the loss of reputation, student enrollment, and financial support. This makes school effectiveness more important than ever before.

The purpose of this study was to determine if there is a difference in standardized test scores in reading and math between fourth-grade students in Title I schools and those in NonTitle I schools. The study focused on the following subgroups: gender, economically disadvantaged students, and students with disabilities. The data were gathered from an analysis of standardized test scores in reading and math of fourth-grade students in 172 elementary schools located in 21 East Tennessee school systems. Each city school system listed is separate from the neighboring county system except for Knoxville where the city and county systems are consolidated. The data were collected from the 2002-2003 *Terra Nova* Standardized Assessment Test scores.

Definitions of Terms

The following are definitions of terms used in this study:

1. *Academic Accountability*: A system of comparing students' growth within a system of rewards and sanctions (Executive Summary Accountability, 2003).
2. *Adequate Yearly Progress*: States must establish a definition of adequate yearly progress that each district and school is expected to meet. States must specify annual objectives to measure progress of schools and districts to ensure that all groups of

- students reach proficiency within 12 years. States must set intermediate goals that provide for annual adequate yearly progress targets with the first increase to occur no later than 2004-05. In order to show adequate yearly progress, schools must test at least 95% of the following groups: low-income students, students from major racial and ethnic groups, students with disabilities, and students with limited English proficiency (U.S. Department of Education, 2002, p. 17).
3. *Alignment With State Standards:* State assessments must be aligned with challenging academic content standards and challenging academic achievement standards. States were required under the previous law to develop or adopt standards in mathematics and reading/language arts, and the new law also requires the development of science standards by 2005-2006 (U.S. Department of Education, 2002, p. 15).
 4. *Economically Disadvantaged:* As pertaining to the study, this group consists of students receiving free or reduced-price lunches (U.S. Department of Education, 2002, p. 16).
 5. *Highly-Qualified Teachers:* States must develop plans with annual measurable objectives that will ensure that all teachers of core academic subjects are highly qualified; this means that they have state licensure, hold a bachelor's degree, and have demonstrated subject area competency (U.S. Department of Education, 2002, p. 1).
 6. *Identification of Schools and Districts in Need of Improvement:* States must annually review the progress of each school and school district receiving Title I funds to determine whether they are making adequate yearly progress and disseminate the results of the review. Title I schools and districts that fail to make adequate yearly progress for two consecutive years must be identified as in need of improvement. (U.S. Department of Education, 2002, p. 17).

7. *No Child Left Behind Act*: A federally mandated bill that requires all states to establish an accountability plan that holds all schools and districts accountable for students' performance (Executive Summary Accountability).
8. *NonTitle I Schools*: Public schools that do not receive federal funding to support economically disadvantaged students (U.S. Department of Education, 2002, p. 13).
9. *Public School Choice*: Students in schools identified for improvement must be given the option to transfer to another public school that has not been identified for improvement (U.S. Department of Education, 2002, p. 17).
10. *Race/Ethnicity*: For the purpose of the study, this comprises White, Hispanic, African American, Native American, and Asian/Pacific Islander students (U.S. Department of Education, 2002, p. 16).
11. *Reporting*: State assessment systems must produce results disaggregated by gender, major racial and ethnic groups, English proficiency, migrant status, disability, and economically disadvantaged status. This assessment system must produce individual students' interpretive, descriptive, and diagnostic reports. States must report itemized score analyses to districts and schools (U.S. Department of Education, 2002, p. 16).
12. *School Wide Programs*: High-poverty schools (those with 40% or more students from low-income families) are eligible to adopt school-wide programs to raise the achievement of low-achieving students by improving instruction throughout the entire school, thus using Title I funds to serve all students (U.S. Department of Education, 2002, p. 15).
13. *State Report Card*: The state must produce and disseminate annual report cards that provide information on how students are achieving overall as well as information disaggregated by race, ethnicity, gender, English proficiency, migrant status, disability status, and low-income status (U.S. Department of Education, 2002, p. 18).

14. *Students With Disabilities*: Students with Individualized Educational Plans (U.S. Department of Education, 2002, p. 16).
15. *Targeted Assistance Programs*: Schools that are not eligible for (or do not choose to operate) school-wide programs must use Title I funds to provide targeted services to low-achieving students (U.S. Department of Education, 2002, p. 15).
16. *Title I Schools*: Public schools that receive funding from the federal Title I program based on the number of students receiving free or reduced-priced lunches (U.S. Department of Education, 2002, p. 13).
17. *Title I*: A federal program that is intended to help ensure all children have the opportunity to obtain a high-quality education and reach proficiency on challenging state academic standard and assessments (U.S. Department of Education, 2002, p. 13).

Research Questions

The research questions in this study were developed to determine if there is a significant difference between Title I and NonTitle I schools in the area of academic achievement. These questions relate to fourth-grade students in the content areas of reading and math. The questions are categorized by the following subgroups: gender, economically disadvantaged students, and students with disabilities.

1. Is there a difference among fourth-grade reading scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?
2. Is there a difference among fourth-grade math scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?

3. Is there a difference between fourth-grade reading scores of economically disadvantaged students in Title I schools and NonTitle I schools?
4. Is there a difference between fourth-grade math scores of economically disadvantaged students in Title I schools and NonTitle I schools?
5. Is there a difference between fourth-grade reading scores of students with disabilities in Title I schools and NonTitle I schools?
6. Is there a difference between fourth-grade math scores of students with disabilities in Title I schools and NonTitle I schools?

Significance of the Study

On January 8, 2002, President George W. Bush signed the Federal *No Child Left Behind Act* (U.S. Department of Education, 2002). This act covered all states, school districts, and schools that accept Title I federal grant-funding programs for poor and disadvantaged children in public schools. The U.S. Department of Education clearly defined a Title I School as a school that receives federal funding because of the number of students receiving free and reduced-cost lunches (Brown, 2001; Executive Summary Accountability, 2003). “The Title I program is a federal education program that aims to close the achievement gap between disadvantaged children and their peers by supporting schools in providing extra help to more than 14 million disadvantaged children” (Brown, p. 11).

As recorded on the Internet Education Exchange (Executive Summary Accountability, 2003), there are four key principles stated in the *No Child Left Behind Act*. First, all schools will be held accountable for all students' performance. Second, more flexibility for states, school districts, and schools will be granted regarding the acquisition of federal funds. Third, more options for parents of children from disadvantaged backgrounds will be provided. Finally, *No Child Left Behind* states that children in all schools will be exposed to proven, successful teaching methods.

Since 1965, more than \$321 billion in federal funding has been dedicated to providing the best educational experience possible for disadvantaged students. Schools received their federal funding regardless of how the students were performing. During the 1970s and 1980s, the country was inundated with reports of American students not performing up to the level of standards of other countries. This prompted the federal government to legislate a need for academic accountability on a local level. The *No Child Left Behind Act* was designed to ensure that every child learns in a measurable way regardless of any personal disabilities (Executive Summary Accountability, 2003)

The No Child Left Behind Act requires that schools test all students on grade level and disaggregate the data that are generated. The subgroups identified by *No Child Left Behind* as mandatory divisions are gender, ethnicity, economically disadvantaged, students with disabilities, and limited English proficiency. The findings of this study could provide some clarification of how subgroups are performing in different settings and might allow for comparison of similar groups of students in different settings.

Educational factors that might be impacted by this study include change in current policies and contributions to further study. This study could have been more indepth if the Tennessee State Department of Education had released individual scores for research purposes. It seemed that the most reasonable way to analyze a set of data of this size would be to focus on the subcategories. Another policy that could be addressed would be the status of students who receive free and reduced-price lunches. Currently, this list of students is confidential. These data are only available with parents' approval. A more sophisticated study might be performed using individual student's data.

This study could contribute to further research. A replicate study could be done using a different grade level or a different region of Tennessee. Because of this study, further study could also be performed in the area of educational programs. Researching and analyzing the programs that are effective in the Title I setting and the NonTitle I setting could be academically

beneficial. Because of the extensive focus on accountability, growth in the area of educational programs could be extremely important.

As reported by Paige (2002), President George W. Bush made the following statement concerning academic standards, testing, and accountability:

Accountability is an exercise in hope. When we raise academic standards, children raise their academic sights. When children are regularly tested, teachers know where and how to improve. When scores are known to parents, they are empowered to push for change. When accountability for our schools is real, the results for our children are real. (p. 12)

Limitations

The number of students listed under each subgroup limited this study. The subcategories of this study were determined by The *No Child Left Behind* Act. The data were not collected from the *No Child Left Behind* portion of the state department's web site because if fewer than 45 students are tested in any subcategory, then the school is not required to report the data for that group. Thus, the school is not held accountable for the academic growth in the subgroup in question. The data for this study were collected from the disaggregated data section (state report card) of the Tennessee Department of Education's web site. To be listed as a subcategory under the guidelines of *No Child Left Behind*, there must be at least 45 students in the group. Because the focus of this study was schools in East Tennessee, the subcategories of ethnicity and English as a second language were for the most part not reported because the number of student in these categories was not sufficient to provide meaningful results. Consistently, among the 172 schools that were analyzed, the subcategories of gender, socioeconomic status, and disability status were reported.

The only instrument used to collect data in this study was the *TerraNova* State Assessment Test. The tests were administered by the classroom teacher during a three-week window in March. This test was scored by the *TerraNova* officials and returned to each school system. In 2004, the state department changed the reporting method of the state report card. The data were not reported in subcategories on the public report card. Each school system was given

this information individually, but it was not posted on the state's web page. Because of this change in reporting, the researcher analyzed data from the school year of 2002-2003 only. These were the most current data that were separated in the subcategories.

Delimitations

Although this study addressed data from 172 schools, it focused on fourth-grade students in the subject areas of reading/language and math. Data for this study were collected in the three subcategories of gender, ethnic status, and disability status. The students in this study attended schools that operated on a traditional calendar. Three schools were eliminated from the data list because they operated on a year-round calendar.

Restrictions have been placed on this study to allow for a complex analysis of data in specific areas of Title I and NonTitle I schools. This study focused only on East Tennessee schools. Generalizations might not apply to other groups. Scores of students in the fourth grade were analyzed in this study; therefore, generalizations were limited to this grade only.

Overview of the Study

Chapter 1 included the statement of the problem, definitions of terms, research questions, significance of the study, limitations, and delimitations of the study.

Chapter 2 contains a review of the literature pertaining to the history of Title I and NonTitle I Schools, standardized testing, and the *No Child Left Behind Act*. This chapter compares the three major issues listed above to modern-day public education.

The research design and method that were used in the study are detailed in Chapter 3. This chapter also includes population, sample and selection procedures, instrumentation, data collection methods, data analysis planning, and a summary.

Chapter 4 presents the analyses of the data in the form of narration, tables, and figures. This chapter also addresses the null hypothesis related to each of the six research questions.

Chapter 5 contains the summary of findings, the conclusions, and recommendations for further study.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

The *No Child Left Behind* Act of 2001 was signed by President Bush on January 8, 2002 (Executive Summary Accountability, 2003). This new law reinforced the most sweeping reform of the *Elementary and Secondary Education Act* (ESEA) since it was enacted in 1965 (McCargar, 2003a). The *No Child Left Behind* Act requires approved accountability plans to be established in all schools and school districts. The accountability plan must be directly related to the performance of all learners and must be submitted to the U.S. Department of Education in the form of an Accountability Workbook (Executive Summary Accountability).

I investigated the effects that *No Child Left Behind* has on Title I schools and NonTitle I schools. Today, Title I schools receive federal funding based on the percentage of students attending the school who qualify for free and reduced-price lunches. This funding was awarded to schools that had 40% or more of their students on free- or reduced-price lunch status. The extra funding was used to improve teaching and learning for high-poverty schools (McCargar, 2003b).

Educational History

According to Messerli (1972), a major leader in developing a plan for state-funded school systems requiring mandatory attendance in the United States was Horace Mann. Arguing that too much local control in education would not allow students to be educated equally, he also worked hard to reduce the number of schools that were not state funded. Mann, known as the “Father of American Education,” became the first Secretary of Education in Massachusetts in

1837 (Downs, 1974). Mann's focus was to establish and make available public schools that would be accessible for all children (Mason-King, 2001).

The United States Congress showed its support for public education in the late 18th century by setting aside land for the development of schools. The amount of land granted for this cause was 77 million acres. After the Civil War ended, congress mandated that all new states provide free, nonsectarian public schools (Synder & Shafer, 2001). Next, the federal government showed support in four major ways by (a) supporting schools and colleges by allowing federal income tax deductions, (b) promoting vocational education to train workers, (c) enacting the GI Bill of Rights, and (d) passing the *National Defense Education Act* to support science and math instruction (Jennings, 2000).

Educators in the 20th century witnessed massive changes within the public education system. John Dewey's philosophical writings made a noteworthy contribution to the development of educational ideas. According to Campbell (1995), he was an American philosopher and educator whose work in pragmatism was extremely influential and helped change educational practices. Dewey suggested that knowledge could be a means of controlling the environment and education was the ultimate way to improve the quality of human life (Smith, 2001). As an educator, he opposed the use of traditional methods of learning such as memorization or teaching independent of real life experiences. According to Tiles (1988), Dewey suggested that learning should include a student's physical and moral well being as well as intellectual development.

The launching of Sputnik I in 1957 sparked national interest in the curriculum of elementary and high school education. According to Roberts (1989), Sputnik referred to a series of satellites launched by the Soviet Union. The fact that these satellites were unmanned made them extraordinary. Sputnik number one was launched October 4, 1957. The successful creation of Sputnik created a frenzy of academic catch-up for American schools (Roberts). Legislators expressed the need for educational reform with the passing of the Title I of the

Elementary and Secondary Education Act (ESEA) of 1965. The act focused on two goals: to improve schooling in high poverty contexts and to advance the equality of educational outcomes for socioeconomically deprived children. During its 40-year history, Title I has achieved some notable success in reaching these goals (Borman, 2003).

Events Leading to Title I of ESEA

In 1954, the U.S. Supreme Court ruled that segregation of children by race in public schools was a violation of the 14th Amendment. The deciding case was *Brown v. Board of Education* (Hughes & Hughes, 1972). The ruling caused national debate relating to the quality of education being provided to African American children. The ruling eventually led to consideration of the needs of children who came from poor families or who had other disadvantages regardless of their race (Hughes & Hughes).

In 1961, President John Kennedy proposed large-scale federal aid to improve education. As a group, African American children were overwhelmingly poor, with 65% of all African American children in poverty conditions, compared with 20% of White children living in poverty (Synder & Shafer, 2001). Although President Kennedy had visions for improving public education for high-poverty children, his proposals were not enacted. Some in the country feared changes in federal funding for public education because of the mandated integration of White and African American students. Other concerns were whether federal support in elementary and secondary schools could lead to a takeover of control of these schools by the federal government. An additional obstacle that President Kennedy had was that the Catholic schools and other private sector schools objected to all federal support that did not support their own educational programs (Hughes & Hughes, 1972).

In November of 1964, President Johnson was elected president by an overwhelming margin. This gave him the power to overcome previous obstacles met by President Kennedy. President Johnson appointed a commission on education chaired by John Gardner. President of

the Carnegie Corporation, Gardner suggested tying education aid to the new war on poverty. The *War on Poverty Act* had been instituted in 1965. President Johnson approved this approach and the ESEA proposed Title I as a program to aid disadvantaged children. This act also supported other activities such as the purchase of library books and creation of supplemental education centers. The ESEA also funded the development of the state departments of education. The ESEA of 1965 became the most noted action taken by President Johnson to improve the education of poor and minority children (Jennings, 2000).

Legislation was often followed by lawsuits challenging the quality of education being provided to those with special needs or disadvantages. Prior to the passage of the *Education for All Handicapped Children Act* in 1975, several state supreme courts had required schools to admit children with mental and physical handicaps (Gilbert, 2000). In 1974, the U.S. Supreme Court ruled in *Lau v. Nichols* that Chinese American children in San Francisco had been denied a quality education because English was not their primary language (Gilbert). Expectations of the Title I program have helped shape the standards of what we know today as public education (Jennings, 2000).

History of Title I

After the implementation of Title I of the *Elementary and Secondary Education Act* of 1965, policy makers, educators, and other advocates of aiding disadvantaged children had high expectations for this program well into the 1970s. Proponents of this act supported the idea that the nation could fight the war on poverty through education. This could allow children to break out of the cycle of economically challenged and move into the middle-class realm of society (Jennings, 2000). Long-term trend data from the National Assessment of Education Progress indicated tremendous progress in the 1970s and 1980s. The progress of Title I programs seemed to be closing the achievement gaps between low-income and more economically advantaged children. In a study conducted by Grissmer, Flanagan, and Williamson (1998), the researchers

reported the gap between African American and White students did narrow in the 1970s and 1980s. This study from the Brookings Institute showed shrinkage of two grade levels between White and African American students over the course of the 10-year period (Grissmer et al.). Another comprehensive meta-analysis of the results from 17 federal evaluations and more than 40 million Title I students' test scores from 1966 through 1993 showed that the 1970s and early 1980s were also the periods of the greatest improvements in Title I students' reading and math achievement outcomes (Borman & D'Agostino, 1996).

In the late 1980s, the gain in academic growth of African American students and low-income students began to slow. Then, the closing of the gap between the two groups came to a halt (Grissmer et al., 1998). At the same time, Title I programs were receiving disappointing reviews from national evaluators (Puma et al., 1997). This caused lawmakers to question the effectiveness of the current Title I legislation. The late 1990s presented a crossroads for the Title I program.

Amid concerns about the current Title I program, President George H. W. Bush proposed a national school reform strategy that he called America 2000. Although this act did not pass, it laid the foundation for President Bill Clinton as he took office in 1993. In the same year, the first education proposal from the Clinton Administration was called "Goals 2000." This bill provided federal aid to the states in developing academic standards, defining levels of student mastery, and initiating testing to determine whether students had reached the set levels of attainment. In 1994, Congress passed the Goals 2000 bill that the Clinton Administration considered the framework for reshaping other federal programs. Higher accountability and higher academic expectations were applied to Title I during the regular reauthorization in 1993-1994. After several years of implementation on a local level and after several very rocky years of Title I changes, the National Assessment of Title I reported progress. In April of 1999, that progress was reported in the area of reading. In May of 1999, the Clinton Administration

submitted its proposal to Congress to renew Title I and related programs with the continuing focus on standards-based reform for all academic areas (McCargar, 2003b).

Use of Title I Funding Today

Since 1965, more than \$321 billion in federal funding has been spent on elementary and secondary education programs for disadvantaged students (Paige, 2002). This money was spent in an effort to help schools provide the best education possible for economically deprived children.

As stated by McCargar (2003a):

The purpose of Tennessee's Federally funded Title I Part A Program is to support local school districts as they improve teaching and learning for students in high-poverty schools so that these students meet the state's challenging content and performance standards. (p. 19)

Title I schools are categorized as "targeted assisted" or "school-wide" (McCargar, 2003b, n. p.). Targeted- assisted schools assess all students and identify those who are not making academic gains. Then these schools devise individualized instruction programs to aid in assisting these students to meet the state's standards. School-wide programs use their funds to improve their entire program to allow all students to be impacted by the improvement not just disadvantaged students (McCargar, 2003b).

There are currently 47,600 Title I schools in the United States. The number of Title I schools was 58% of elementary schools in 2003. Sixty percent of all schools that received Title I funding were school-wide programs and 40% of the schools were targeted-assisted programs. Over 14.9 million American students receive assistance from the Title I program every year. The U. S. government spent \$472 on each Title I student in the year 1997-1998. The money was spent directly on students' instruction or instructional materials. The overall budget for the year 2002 was \$10.4 million and the overall proposed budget for 2003 was \$11.4 million (McCargar, 2003b).

School-Wide Opportunities

At a time when some conservative lawmakers have questioned the value of Title I, a study showed significant academic improvements in urban schools (Gilbert, 2000). According to Gilbert, every school that was included in the “Hope for Urban Education: A Study of Nine High Performing, High Poverty Urban Elementary School” was a Title I school. These schools were participating in school-wide use of Title I funding and test scores steadily increased in reading and math over the course of the three-year period. “These schools are a powerful affirmation of the power of Title I to support comprehensive school improvement efforts. In these schools, many important change efforts were enhanced through the use of federal education resources” (Gilbert, p. 123).

Although the nine schools analyzed in Gilbert's (2000) study were very different, they had common threads that helped explain some of their success. First, they all had a strong focus on serving children. This often meant overcoming conflicts among the adults in the schools. Second, each school provided an environment in which discipline and appropriate behavior were expected. Next, these schools increased quantity and quality of instruction and instruction clearly aligned with state or district standards and assessments. Finally, all schools provided opportunities for teachers and other staff to work together around instructional issues (Gilbert).

Early Intervention Programs

Recent national data indicate that there is an obvious achievement gap as early as kindergarten between students attending high-poverty schools and students attending more affluent schools (Borman, Brown, & Hewes, 2002). In 2002, half of the African American-White achievement gap at the end of high school could be attributed to the fact that African American students began school with fewer skills than White students. The other half of this gap could be attributed to the fact that African Americans learned less than Whites as they progressed through the school process (Borman, 2003). This evidence indicates that closing the

gap must begin with a strong educational foundation of high-poverty preschools and equally as strong kindergarten programs. According to Barnett (1995), preschool interventions help high-poverty students gain the academic abilities they need to develop long-term learning habits that will impact their learning through middle school, high school, and even into adulthood.

Since 1967, the Chicago Child-Parent Center has been an example of a high-quality Title I funded preschool and early education program (Reynolds, Temple, Robertson, & Mann, 2001). This center provides comprehensive child education and family support services to promote school readiness. Another goal of the Chicago Child-Parent Center was to promote positive adjustment among preschoolers, kindergarteners, and students in grades one through three for up to six years of intervention. Reynolds et al. showed that Title I preschool programs could make important differences in students' short- and long-term outcomes including a 20% reduction in the high school dropout rate.

Summer School Opportunities

According to Borman (2003), the growth in the achievement gap between those with economic challenges and those who are not economically challenged could be attributed to many variables; among those were differences in parenting skills and differing attitudes among families regarding school. These factors cannot be controlled by the school systems. Entwisle and Alexander (1992, 1996) reported that data based on a long-term study of students in Baltimore indicated that the widening of the gap between poor- and middle-class students was not explained by differences in learning rates nor the type of programs presented to students by the schools. Their research suggested the gap was most affected by the differences in the students' summer learning experiences (Entwisle & Alexander, 1996).

Cooper and his colleagues (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996) noted that over the course of a traditional summer break, most children would lose about a month's worth of academic retention from the previous year. In the Cooper et al. (1996) study, this

proved to be true in the areas of math and reading/language arts. Making gains toward closing the gap for low-income students was very challenging because fewer out-of-school opportunities were provided to these children by their families. Borman (2003) contended that the major factor in this situation could be attributed to the lack of resources that are available to these children. As a result of the lack of enriching experiences low-income children receive, they often fall farther behind their more advantaged peers. In a study conducted by Entwisle and Alexander in 1996, the researchers suggested that almost all of the achievement differences between high school seniors coming from low-income settings and seniors coming from advantaged settings could be attributed to two factors. These factors were: the gap that these students already had because of a lack of prekindergarten experiences and the gap created over summer break (Entwisle & Alexander, 1996).

Cooper, Charlton, Valentine, and Muhlenbruck (2000) conducted a narrative review and meta-analysis of 93 evaluations of the effects of summer school on students' achievement outcomes and concluded that both remedial summer school programs and accelerated learning programs had a positive impact on students' performance. These improvements were noted in the areas of general knowledge and skill mastery of the participants. The researchers suggested that because of their short sessions, summer-school programs were more effective in closing achievement gaps between middle-class and disadvantaged students than were the traditional yearlong schedule (Cooper et al., 2000).

Proactive approaches were being used in Chicago at the Summer Bridge Intervention Center. This center was made up of large-scale summer programs that offered summer activities and academic remediation for students who had fallen behind (Roderick, Jacob, & Bryk, 2003). This program supported the extension of learning opportunities into the summer months (Borman, 2003).

For-Profit Private Support Programs

Private involvement in public schools is an option being explored by educators in cities such as Chicago, Los Angeles, Baltimore, and El Paso. The teachers in these programs are employed by for-profit companies. Executives at these companies strived to prove that a cost-conscious business committed by contract to improve students' achievement could succeed where decades of work by public employees had brought limited success. About 1,500 school systems across the country are paying an estimated \$200,000 per system in federal funds to private enterprises. Officials at these companies claim that they can do a better job of serving low-income students than the current Title I programs do that exist in more traditional school settings (Mathews, 2000).

In Chicago, the Success Lab Learning Center has 22 locations within city schools that serve students with the greatest academic needs. These children are provided with two extra hours of intense preparation each week. Mathews (2000) pointed out that Hazel Steward, who supervised 87 public schools on Chicago's West Side, expressed that each Success Lab located in Chicago showed academic improvement. Mathews noted that between the years of 1996 and 1998, Success Labs showed an improvement of 1.385 years each year in the subject areas of reading and math.

Mathews (2000) also reported that Stan Paz, a former El Paso, Texas, school superintendent, has publicly shared his views on Sylvan Learning Systems as a for-profit company. He explained that the key to the company's Title I success was its well-known brand name. Paz, who was employed by Sylvan after he served as superintendent in Texas, also noted that some parents were already paying for Sylvan's services for their children. These parents were generally comforted by the introduction of Sylvan into their children's learning experience. In 2000, Sylvan served 117 public and 809 private schools with contracted services (Mathews).

Reading Intervention Funded by Title I

Of the billions of federal dollars that have been dispensed for Title I funding since 1965, a sizeable amount of this money has been allocated for remedial reading programs. In pull-out programs, students are removed from the regular classroom setting for a portion of their instruction. Lack of congruence between regular education and special education created questions in students' overall reading instruction (Allington, 1987). Because of this problem, researchers began to explore supplemental reading programs (Winfield, 1986).

The PUSH-UP for learning program (Previewing, Using Sentences, Helps for Upward Scoring) was analyzed in a research project in 1997 by Golembesky, Bean, and Goldstein. This program provided a general story schema and it allowed for rehearsal of decoding, vocabulary, and specific sentences. The process allowed poor readers to focus more attention to the message instead of being bogged down with the process of reading the story. For poor readers, this gave an opportunity to integrate parts of a story into a coherent, complete story.

In the Push-Up study, five Title I students in third grade were randomly selected. Three were male and two were female. These students demonstrated weakness in the areas of decoding, word recognition, comprehension, and fluency in daily performance. All of these students received lessons from the PUSH-UP program prior to the daily reading lesson for a period of four months (Pearson & Spiro, 1992).

The benefits of this program can be summarized into three categories. First, the students were able to focus on their content reading program. This is often called a basal reader (Allington, Boxer, & Broikow, 1987). Second, PUSH-UP provided the needed decoding practice that was not being received in the regular classroom setting (Juel, 1990). Third, the students are actively involved in their learning and displayed appropriate reading behaviors (Garcia & Pearson, 1990).

Success for All (SFA) was another program being used widely in Title I schools to address deficient reading outcomes. Slavin and Madden (1995) along with a team of developers

from Johns Hopkins University founded this program. SFA restructured elementary schools to help ensure that all children learned to master reading. Most of the schools using this program were Title I schools (Adams, 1990). This program facilitated a strong curriculum, effective practices for beginning readers, and cooperative learning strategies (Slavin & Madden).

Greenlee and Bruner (2001) conducted a comparative analysis of Title I schools that had implemented SFA and Title I schools using standard reading instruction methods from a traditional reading basil. Their study took place from 1998 to 2001. Although the outcomes of the study were favorable, students at the schools who did not participate in the SFA program performed at a higher level than did those who took part in the SFA program.

From the beginning of Title I funding, school administrators were encouraged to use a portion of their federal funds for a reading specialist. This individual traditionally helps struggling readers in a pull-out setting. These students are removed from their regular classroom and taught in a small group setting that is completely funded by Title I. Over the course of time, the reading specialist's position has changed greatly (Dole, 2004).

No longer is the reading specialist just working in pull-out settings. He or she is often expected to work directly with the teachers as a coach or a mentor (Quatroche, Bean, & Hamilton, 2001). The new role of the reading specialist is to support teachers in planning instruction, modeling, team-teaching, and providing feedback on lessons taught by the regular classroom teacher. The reading specialist also aids in the development of assessments and organizing classroom instructions.

There was limited research about the role of a reading specialist used as a coach or mentor. In 2004, Dole presented the roles of reading specialists in the development of teachers. According to this researcher, the five main types of support that could be given to a teacher from a reading specialist were: (a) growth in theory, (b) demonstrations, (c) guided practice, (d) ongoing feedback, and (e) in-class coaching. This method allowed the reading specialist to be a constant staff development support person for the classroom teacher (Dole).

Math Intervention Funded by Title I

American students have consistently fallen behind students from other industrialized countries in mathematics (Beaton et al., 1996). A widening of the gap between high- and low-poverty students has been noted over the years of 1980 to 1999 (U.S. Department of Education, 2001). In mathematics, the gap between the two groups widened from a 20-point difference in 1986 to a 29-point difference in 1999 (U.S. Department of Education, 2001).

Mathematics teachers across the United States face daily instructional challenges as they attempt to meet the needs of students in their classrooms. Federal education resources such as Title I can be used to aid math instructors as they strive to improve learning in math (Algozzine & Ysseldyke, 1992). In 1994, with the reauthorization of ESEA, improving high standards in reading and math became a central focus. During this time, the use of Title I funding for math instruction began to change (Ysseldyke, Betts, Thill, & Hannigan, 2004).

Trends for using Title I funding to meet math instruction goals seemed to fall into distinct categories. Educators began to strive for a curriculum and a set of instructional materials that focused on depth, rigor, and meaning to improve mathematics learning instead of unconnected, isolated math practice. Helping teachers master new content and instructional strategies throughout their entire teaching careers became a major staff development concern. In addition, time for planning and collaboration became a priority for many Title I schools. Innovative ideas were developed to emphasize collaboration, flexibility, and professionalism with the goal of improving math instruction. Mathematics specialists and master teachers were also used to assist classroom teachers as they began to adjust to the changes in Title I. These specialists offered peer-coaching, planning assistance, modeling of instructional strategies, and guidance regarding the instruction of special needs students (Ysseldyke et al., 2004).

According to Ysseldyke et al. (2004), Memphis, Tennessee, City School officials began a committed focus on preparing students to be successful workers and citizens in 1999. This effort directed the school system to focus on improving students' achievement in mathematics and

science. The school system developed two goals for mathematics and science curricula: to increase students' achievement and to increase the number of students enrolling in courses beyond algebra 1 and physical science. Memphis City school educators developed a partnership with the National Science Foundation's Urban Systemic Initiative to improve mathematics and science programs. In Memphis, every school-wide program was allocated an instructional facilitator. This position provided support for the classroom instruction and staff development related to the school-wide program. Educators have also created Saturday academies and algebra labs for seventh and eighth graders. They have developed summer programs that focus on algebra, science, and technology. All of these programs use hands-on learning methods for math and science instruction (Ysseldyke et al.).

Also, according to Ysseldyke et al. (2004), the Dallas Independent School District in Dallas, Texas, and the Urban Systemic Initiative have collaborated with Title I funding to implement a district wide, standards-based mathematics and science curriculum. This partnership supported professional development, provided innovative materials and technology, and cultivated family and community involvement. The Project Seed program was developed in the Dallas schools to enrich the instruction of math and science. This program placed expert engineers and mathematicians in classrooms to help ensure a real-life connection to math and science. Individuals in these three-way partnerships have also purchased new computers and trained teachers on the use of technology in the classroom setting. In 1998, Dallas students achieved all time high scores in mathematics on the Texas Assessment of Academic Skills Test in five out of six grades tested. A decrease in the achievement gap between African American and Hispanic students was also noted (Ysseldyke et al.)

Educators at Kenton Elementary School in Portland, Oregon, emphasized interactive writing and vocabulary development through programs such as *Math Their Way* produced by The Center for Innovation in Education, *Every Day Counts* produced by Great Source, and *Visual Math* developed and supported by The Visual Math Institute. Kenton's teachers used

peer-tutoring and cooperative-learning methods as they taught students to analyze and interpret information. According to Beaton et al. (1999), "The percentage of third-, fourth-, and fifth-grade students who met the state benchmarks on the mathematics portion of the Portland Public Achievement Test increased from 57% in 1996-1997 to 71% in 1997-1998" (p. 17).

Ysseldyke et al. (2004) conducted a study that analyzed the use of a curriculum-based instructional system for math instruction. The researchers compared the math scores on standardized achievement tests of students in third through sixth grade in a Title I setting and the scores of third- through sixth-grade students in a NonTitle I setting. Title I students who participated in the instructional management system significantly out performed those who did not participate. *Accelerated Math* (Renaissance Learning, 1998) was the curriculum-based instructional management system used in the study.

The *Accelerated Math* program, produced by Renaissance Learning (1998), was composed of an assessment of students' skill levels, development of matched instruction, personalized goal setting processes, and significant practice opportunities. The *Accelerated Math* program also offered immediate feedback to students and teachers on the students' performances. This program allowed for the enhancement of instructional outcomes for diverse students in the traditional elementary setting (Spicuzza et al., 2001).

In a large nationwide experiment, the use of *Accelerated Math* was analyzed by focusing on achievement outcomes of grades 3 through 10 in 67 classrooms in 47 schools in 24 states. This study was conducted by Ysseldyke who was a Birkmaier professor of educational leadership and associate dean of research (Ysseldyke & Tardrew, 2002). The students who were exposed to *Accelerated Math* interventions as a supplemental program to their regular math instruction consistently demonstrated higher math achievement gains than students who were not exposed to *Accelerated Math* as a supplement to their regular math curriculum (Ysseldyke et al., 2004).

Background of No Child Left Behind

In 1994, the federal government ordered a reauthorization of the 1965 *Elementary and Secondary Education Act*. According to Rose (2004), this reauthorization focused on higher standards, testing based on those standards, and higher levels of accountability. This restructuring of the ESEA was named “Goals 2000” (Rose, p. 118). Over the course of the next five years, federal lawmakers became frustrated with the lack of progress made in standards-based education. This issue led to another reauthorization of the ESEA known as The *No Child Left Behind Act* (Rose).

The *No Child Left Behind Act* of 2001, signed into law by President George W. Bush on January 8, 2002, is potentially the most significant educational plan to have been devised in decades. According to Jennings (2000), *No Child Left Behind* requires all students to have qualified teachers and to be given the opportunity to attend high-quality schools. States must make plans with annual measurable objectives that will ensure that all teachers of core academic subjects are highly qualified. This means they have state certification, hold a bachelor’s degree, and have demonstrated subject area competency. Core academic subjects include English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography. All newly hired teacher as of the 2002-2003 school year must meet these requirements; all existing teachers must meet these requirements by the end of the 2005-2006 school year (U.S. Department of Education, 2002). *No Child Left Behind* mandates that no teachers be permitted to teach outside their tested certification area (Jennings). This act requires states to raise academic achievement levels for all students, including those with disabilities (Wayne & Youngs, 2003).

No Child Left Behind requires all schools to demonstrate adequate yearly progress. This progress is determined in every state for every grade level in every subject. Each year, the schools that do not meet the AYP are labeled as “not performing.” After two years of not performing, sanctions that include loss of federal funding, termination of staff, and dissolving of

school districts can be enforced. After three years on the not-performing list, more of the above sanctions can be enforced. Although the central theme of the *No Child Left Behind* Act appears to focus on the best interest of children, it has been plagued with controversy because of a lack of state, local, or federal funding (Rose & Gallup, 2003).

Current Implementations of No Child Left Behind

Federal officials of The *No Child Left Behind* Act identified four major components as being priorities. The first component was accountability for students' performance. Then, the Act allowed for more flexibility for states, school districts, and schools regarding the use of federal funding. Next, this law provided more options for parents of children from disadvantaged backgrounds. Finally, *No Child Left Behind* encouraged and supported the use of proven methods of instruction (Paige, 2002).

Accountability directly relates to the academic performance of all students. Disaggregation into subgroups allows for more indepth analysis of students' performance. All schools are expected to have academic attainment in the following subgroups: ethnic background, economically disadvantaged, students with disabilities, migrant status, English language status, and gender (Sims & Zollie, 2002). Schools that repeatedly fail to reach academic attainment in any of the listed subgroups are placed on a nonperforming school list. By the school year 2005-2006, approved standardized tests must be given in all grades from three through eight (Paige, 2002). Academic attainment must be achieved in the areas of reading and math. By the school year 2007-2008, science achievement must be added to the list. Within 12 years, all students must perform at a proficient level based on their state's standards. Results of these tests must be made public in annual state and district report cards. This allows parents to evaluate their school's performance and their state's progress. According to Paige:

These report cards must list results for every student group. The report cards also must identify achievement gaps between students who are economically disadvantaged and their more affluent peers, between racial and ethnic minority groups, those with disabilities, or those with limited English proficiency. The report cards must list results

by gender and migrant status. The NCLB Act's intent is to collect and release this information to spotlight achievement gaps between different groups of students and to spur state and local action to help close those gaps, thus making sure, as the Act's name promises that no child is left behind. (p. 6)

Although federal financial support is supposedly available for bridging the achievement gap, the schools are responsible for improving the academic performance of all students.

President George W. Bush proclaimed, "There will be real consequences for districts and schools failing to make progress" (as cited in Helms, 2003). McCargar (2003b) explained those consequences. Schools not making progress are to be placed on a nonperforming school list. A school that falls into a nonperforming category for one year would be put on a probation list. For this first year, the situation of the school would be somewhat private. A progress plan would be filed with the state in hopes that the school would show the appropriate growth the next year. If a school remains in the nonperforming category for another year, then it is mandatory that school administrators notify the parents of the students who attend that school. This process gives the parents the right to make a change in the educational plan for their children. If a school remains on the nonperforming list for the third year, then the administrative duties can be taken over by the state department. Tennessee is now in the second year of the performance plan; Phase III of this plan has not yet been implemented. As the Tennessee Department of Education makes this list public, parents of students in such schools will be allowed to transfer to higher performing schools within the system. Parents will also be offered the opportunity to participate in the Supplemental Education Service Program. This allows parents financial support to participate in such programs as tutoring, after-school programs, and summer programs (McCargar 2003b).

Academic Trends of High-Poverty Students

The North Carolina Charlotte Observer published a disturbing media report in September 2003 (Helms, 2003). The writer stated that test scores and poverty levels for 2002-2003 had great correlation. By every measure, the lowest performance came from the highest poverty schools. Students from low-income settings performed better on standardized tests when

they were integrated with students from more affluent families. However, students from affluent backgrounds were more likely to perform poorly when they were receiving instruction with students in a lower socioeconomic status (Helms). Because of the above media report, more parents in Charlotte, North Carolina, have taken advantage of the funding offered in the *No Child Left Behind* Act. This funding allows parents to move their children from a nonperforming school to a school that is making the appropriate gains and where children are being more successful.

When President Bush delivered his education reform proposal in 2004 to Congress, he noted that we, as Americans, must confront illiteracy in America. He also pointed out that nearly 70% of fourth graders were unable to read at a basic level (McCargar, 2003a). The National Assessment of Educational Progress (NAEP) claimed that reading scores on standardized tests have not improved in the United States since 1970 (McCargar, 2003a). Long-term trends of NAEP showed the scores of high-poverty students were decreasing and scores of low-poverty students were increasing from the late 1980s to 1999. Instead of closing the gap, the gap seemed to be getting bigger (Sims & Zollie, 2002).

History of Standardized Testing

The *No Child Left Behind* Act was not responsible for introducing standardized testing to Americans. According to Lockwood and Cleveland (1998) in 1917, Alfred Binet's intelligence tests gained widespread use at the beginning of World War I. Young men in mass numbers had enlisted in the American armed forces. The military used standardized IQ tests to evaluate and identify potential officers. Men were assigned to duty according to their performance on the standardized tests.

In 1896, the Supreme Court decision in the case of *Plessy v. Ferguson* supported the separate but equal principle of schooling both African American and White children. During this

period, school officials claimed the African American children would perform as well in a separate school setting as they would in a setting mixed with White children (Warren, 2003).

The landmark United States Supreme Court decision of *Brown v. Board of Education* in 1954 addressed the segregation of White and African American children in the public school setting (Manning & Lucking, 1990). In 1954, this case awarded African American children equal protection of the laws guaranteed by the 14th Amendment (Warren, 2003). This case also caused even more focus to be placed on standardized testing to educationally sort students according to their performance on one test. Based on standardized test scores, the *Brown v. Board* case challenged whether separate could ever be equal (Manning & Lucking). Soon after this practice started, American schools began using standardized tests to track students in an educational format that was supposed to best help them be productive members of society (Manning & Lucking).

In 1957, Americans were stunned when the Soviet Union successfully launched Sputnik, the first spaceship, into space. The United States had fallen second in the race for space. As Americans searched for answers, they were stunned by the idea that American children were not performing to their fullest potential academically. Accountability in the academic areas of science and math came to the forefront for educational institutions (Moriarty, 2002). However, during the 1980s, according to Lockwood and Cleveland (1998), a series of alarming publications were made available including: *A Nation at Risk*, by The National Commission on Excellence in Education in 1983; *A Nation Prepared*, by The Federal Emergency Management Agency in 1985; and *Workforce*, by The Texas Workforce Commission in 1987. These publications called for America's educational systems to make radical changes (Lockwood & Cleveland).

Accountability soon became a political issue. Local politicians claimed that public schools were a waste of taxpayers' money. National politicians used the education issue as a plank in election platforms. In the past, teachers had held students accountable for their learning

by using assessment tools such as quizzes, homework, oral presentations, portfolios, and chapter tests. Teachers then appraised the students' learning to decide if further instruction or testing was needed (Moriarty, 2002). Currently, the assessment required by the federal government has become a single standardized norm-referenced test. Norm-referenced tests produce scores that are compared to a national control group. The results of this single test have been used to identify students' growth and evaluate teachers' performance (Moriarty).

Prior to the emphasis brought out by *No Child Left Behind*, standardized test data had been most frequently presented to the public in the form of National Percentiles and Grade Equivalency. The National Percentiles identified the placement of a student's scores on a bell-shaped curve as related to a sample group. Grade Equivalency helped develop a comparison between a student's score and the mean of students in each grade level. A fourth-grade student who performed on a 7.4 level in reading comprehension performed as well as the average seventh-grade student did on the same test. Contrary to popular belief, this did not mean that the fourth-grade student could perform at a satisfactory level in a seventh-grade classroom. A seventh-grade reading class includes more than just one reading comprehension test (Moriarty, 2002).

Standardized Testing in the State of Tennessee

Since 1989, the state of Tennessee has used the Tennessee Comprehensive Assessment Program (TCAP) as its standardized testing tool. This tool was last revised in the year 2000 and has been used to evaluate schools, teachers, and students across the state. The TCAP measures the state's accountability standards. Sanders (1998), the creator of the value-added component of the TCAP tests, stated, "By statistically aggregating the dimples and bubbles, the assessment tool can be used to determine the impact of school systems, individual schools, and individual teachers" (p. 341).

TerraNova is a bank of test items developed by CTB/McGraw-Hill (1997). The elementary portion of the TCAP achievement tests, *Terra Nova*, includes the cognate areas of reading/language arts, mathematics, science, and social studies. The selection of the *TerraNova* test as Tennessee's testing tool was based on the close alignment of the test to Tennessee's state educational curriculum plan (CTB/McGraw-Hill).

In the state of Tennessee, all students in grades three through eight take the *Terra Nova* test. This test is administered in April of every school year. Students are tested for a required 555 minutes in third grade; 530 minutes in grades four, six, and seven; and 570 minutes in fifth and eighth grades. All content areas are given to all students on grade level (Brown, 2001).

The Tennessee test has a second component called value-added; these scores provide information that allows comparisons for time-on-task and level of performance. This component allows parents, educators, and leaders to look at past and current scores to determine the amount of academic growth that has occurred with students. Value-added scores provide projections as to the amount of attainment students should achieve in one academic year (Sanders, 1998).

Summary

This chapter offered a presentation of The *No Child Left Behind Act* (Executive Summary Accountability, 2003). The reader was exposed to the history of *No Child Left Behind* and the current implications of this act on public education today. This chapter also explained the federal Title I program of funding for public schools, facts about Title I schools, and academic trends of economically disadvantaged children. Finally, this chapter addressed the history of standardized testing and standardized testing in the state of Tennessee.

CHAPTER 3

METHODOLOGY

The purpose of this study was to determine if there is a difference in standardized test scores for reading and math between fourth-grade students in certain Title I schools and NonTitle I schools. The study focused on the following subgroups: gender, economically disadvantaged students, and students with disabilities. The data were gathered from an analysis of standardized test scores in reading and math of fourth-grade students in 21 school systems comprising 172 elementary schools located in Upper East Tennessee

Chapter 3 describes the research design, population, and sample selection procedures. The instrumentation, data collection planning, and data analysis planning are also explained.

Research Design

This project was a quantitative study in which the researcher examined standardized test data in a retrospective manner. A retrospective comparative design was used to gather, analyze, and interpret existing school data. The data were gathered in this order: school system, school, grade level, subject, and the three focus subcategories: (a) gender, (b) economically disadvantaged versus non-economically disadvantaged students, and (c) students with disabilities versus students without disabilities. Each school was coded as Title I or NonTitle I. The data were analyzed using a two-factor ANOVA. The analysis of the data allowed the researcher to infer whether a difference in academic achievement could be identified between Title I and NonTitle I schools and each of the subcategories (gender, economic status, and disability status).

Population

The population used in this study was elementary school students in Upper East Tennessee. This study focused on school aggregate data for fourth-grade students and their

performance on the *TerraNova* test in the content areas of reading/language and math. The data reflected the academic performance of students in the school year 2003-2004.

Selection Procedures

Data for fourth-grade students were used from the schools that were selected. The data were retroactively collected for the year 2002-2003. Data were selected from 17 counties that had elementary schools operating on a traditional school year calendar (August – May), used a traditional grading scale (A, B, C or O, S, N, and U), and were geographically located in Upper East Tennessee.

The schools systems included in this study were: Blount County, Bristol City, Carter County, Claiborne County, Elizabethton City, Grainger County, Greene County, Greenville City, Hamblen County, Hancock County, Hawkins County, Jefferson County, Johnson City, Johnson County, Knox County, Maryville City, Sevier County, Sullivan County, Unicoi County, Union County, and Washington County. The Rogersville City School system, located in Hawkins County, is operated by the town of Rogersville and was not included in this study. All elementary schools chosen for the study were on traditional school schedules. They had a summer break, winter break, and a spring break. These schools shared a similar grading scale for communicating academic growth to parents. The students at these schools received instruction in physical education, music, art, and library use in some form during the school year. Some schools had computer labs and others had extended services for children before and after school.

Each school was classified as Title I or NonTitle I for the purpose of this study. Title I schools receive federal funding if the number of students receiving free or reduced-price lunch is greater than 40%. NonTitle I schools have some students receiving free and reduced-price lunches but they do not have enough to receive federal financial support from the government.

The *Terra Nova* test data were analyzed for these students in the content areas of reading and math. The collected data only represented the learning that took place over the school year of 2003-2004. After each school was coded Title I or NonTitle I, the data were collected on fourth-grade students in the curriculum areas of reading and math. These data were then disaggregated into subcategories. The subcategories were gender, economically disadvantaged, and students with disabilities. These subcategories were defined in *No Child Left Behind*. All comparisons were made using national means (the averages of actual reading and math scores).

Phases of Data Collection

Phase 1: All fourth-grade students were present during the first twenty days of a traditional school year calendar.

Phase 2: All fourth-grade students attending the selected schools took the *TerraNova* Test within the window of time provided by the Tennessee State Department of Education.

Phase 3: The data were reported to the state Department of Education and disaggregated into content areas and subgroups.

Phase 4: The data were collected by the researcher and entered into the SPSS program for analysis.

Instrumentation

Tennessee students participate in the Tennessee Comprehensive Assessment Program (TCAP). The *TerraNova* test is the component of the TCAP test in which students in grades one through eight participate. It is mandatory that all schools administer the *TerraNova* test and it must be given during a three-week window (Brown, 2001). Normally this window takes place in March.

The *TerraNova* test is considered reliable and valid (Moriarty, 2002). Reliability refers to the test's construction. Reliability is the degree of consistency that the instrument

demonstrates. This means that the test measures what it is intended to measure in a consistent manner. Reliability is usually expressed numerically as a correlation coefficient (U. S. Department of Education, 2002). The state's Department of Education assumes the responsibility of making sure that this test is free from error in the areas of construction and measurement. Validity is the degree to which the instrument measures what it is supposed to measure (U. S. Department of Education, 2002). Validity factors are always somewhat harder to control. The manufacturer of this test issued the following components: directions, class conditions, and testing time allowed. The manufacturer is not able to control the manner in which these components are presented to students. The list of acceptable testing conditions from the Tennessee State Department of Education allows for a variety of testing conditions. For example, yearly instructional materials do not have to be removed from the classroom if they have been a part of the teacher's classroom for the entire year. It is acceptable for a teacher to test individually, in small groups, and to play music (Moriarty).

This test was implemented in 1989 and was revised in 2000. The third- through eighth-grade testing program is under development to meet the requirements of the *No Child left Behind Act* (Brown, 2001). The test is designed to evaluate the implementation of the Tennessee Curriculum Frameworks. Table 1 identifies the content areas tested in fourth grade. This table also identifies the number of items on each subtest as well as the time allowed for each subtest. According to this table, fourth-grade students tested for 530 minutes.

Table 1

Terra Nova Achievement Testing Content Areas in Grade 4 in the Year of 2002-2003

Content Area	Sub-Tests	# of Items	Testing Time in Minutes
Reading/Language	Test A, Part 1	38	50
	Test A, Part 2	40	50
	Test B	48	60
Mathematics	Test A, Part 1	15-Jan	15
	Test A, Part 2	39	55
	Test B	48	60
Science	Test A	40	40
	Test B, Part 1	32	40
	Test B, Part 2	32	40
Social Studies	Test A	40	40
	Test B, Part 1	32	40
	Test B, Part 2	32	40

Data Collection Planning

Because of the public nature of the information involved in this study, no formal permission was needed to collect or analyze the data. The data were collected from the Tennessee Department of Education's web page under the *Report Card* option. No pass or clearance was needed to source these data. Because it will not be the intent of the researcher to identify any one Title I or NonTitle I school, information gathered from this study was presented in a general manner. This allowed the schools to remain anonymous. Likewise, because the unit of analysis was the school and not individual students, no data on specific students were collected. Educators from all schools and systems used in the study were given the opportunity to view and receive copies of the study upon request.

Data Analysis Planning

For each of the following six research questions, the null hypothesis and the appropriate statistical test are presented:

Research Question #1

Is there a difference among fourth-grade reading scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?

H01: There is no difference in fourth-grade reading scores among gender groups in Title I and NonTitle I schools.

A One-way ANOVA was used to test the null hypothesis. If the ANOVA was statistically significant, the Tamhane's T2 post hoc test was used to determine which pair or pairs of reading means were different.

Research Question #2

Is there a difference among fourth-grade math scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?

H02: There is no difference in fourth-grade math scores among gender groups in Title I and NonTitle I schools.

A One-way ANOVA was used to test the null hypothesis. If the ANOVA was significant, the Tukey post hoc test was used to determine which pair or pairs of math means were different.

Research Question #3

Is there a difference between fourth-grade reading scores of economically disadvantaged students in Title I schools and NonTitle I schools?

H03₁: There is no difference in fourth-grade reading scores between economically disadvantaged students who attend Title I schools and NonTitle I schools.

The *t* test for independent samples was used to test the null hypothesis.

Research Question #4

Is there a difference between fourth-grade math scores of economically disadvantaged students in Title I schools and NonTitle I schools?

H04: There is no difference in fourth-grade math scores between economically disadvantaged students who attend Title I schools and NonTitle I schools.

The *t* test for independent samples was used to test the null hypothesis.

Research Question #5

Is there a difference between fourth-grade reading scores of students with disabilities in Title I schools and NonTitle I schools?

H05: There is no difference in fourth-grade reading scores between students with disabilities who attend Title I schools and NonTitle I schools.

The *t* test for independent samples was used to test the null hypothesis.

Research Question #6

Is there a difference between fourth-grade math scores of students with disabilities in Title I schools and NonTitle I schools?

H06: There is no difference in fourth-grade math scores between students with disabilities who attend Title I schools and NonTitle I schools.

The t test for independent samples was used to test the null hypothesis.

Summary

The methodology and procedures used in this study have been presented in Chapter 3. The research design was presented and explained. The population and selection procedures were described. The instrument used in this study was the *TerraNova* portion of the TCAP test. Facts about the *TerraNova* test as well as the issues of reliability and validity were also discussed in this chapter.

CHAPTER 4

DATA ANALYSIS

Introduction

The research questions and hypotheses introduced in Chapters 1 and 3 are addressed in Chapter 4. The purpose of this study was to determine if there is a difference between fourth-grade students in Title I schools and fourth-grade students in NonTitle I schools in the content areas of reading and math. This study focused on 172 schools in 21 East Tennessee school districts and addressed the following subcategories: gender, economically disadvantaged, and students with disabilities. The study was guided by six research questions and the corresponding null hypotheses.

Analysis of Research Questions

Data for this study were compiled from the results of the 2002-2003 fourth-grade *Terra Nova* Tests. One-way ANOVA, Tukey post hoc test, Tamhane's T2, and *t* tests were used to analyze the data. Presentation of these data follows the organizational format of Chapters 1 and 3.

Research Question #1

Is there a difference among fourth-grade reading scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?

Ho1: There is no difference in fourth-grade reading scores among gender groups in Title I and NonTitle I schools.

Figure 1 shows the distribution of reading scores for each of the four gender groups.

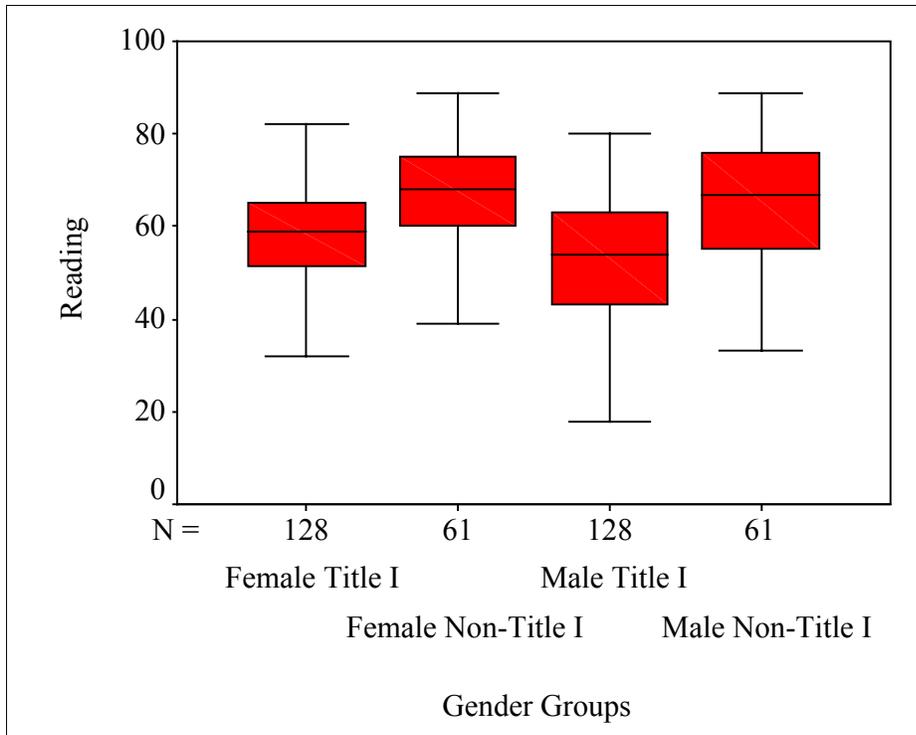


Figure 1. Distribution of Reading Scores for Gender Groups

A one-way ANOVA was used to evaluate the relationship between gender groups and fourth-grade reading scores. The independent variable, gender groups, had four levels: female students who attended Title I schools, female students who attended NonTitle I schools, male students who attended Title I schools, and male students who attended NonTitle I schools. The ANOVA was significant, $F(3, 374) = 22.26, p = .01$. The strength of the relationship, as measured by $\eta^2 = .15$, indicated that 15% of the variance in reading scores was accounted for by gender groups.

Because the overall F test was significant, post hoc tests were used to determine which pairs of gender group means were different. Levene's test of equality of variances showed the variances of the groups were not equal, $F(3, 374) = 3.129, p = .026$. Therefore, Tamhane's T2 post hoc test was selected to evaluate the pair wise differences among the gender group means.

Tamhane's T2 was chosen because this post hoc test does not assume equal variances and it is a conservative test.

There was a significant difference between females in Title I schools and females in NonTitle I schools ($p = <. 01$). Females in Title I schools ($M = 58.13, SD=11.84$) had a lower mean on reading than females in NonTitle I schools ($M = 67.05, SD=11.18$) a difference of almost 9 points. There was a significant difference between females in Title I schools and males in Title I schools ($p = .01$). Males in Title I schools ($M = 53.02, SD=13.99$) had a reading mean over 5 points lower in reading than females in Title I schools ($M = 58.13, SD=11.84$). There was a difference between females in Title I schools and males in NonTitle I schools ($p = .05$). Females in Title I schools had a lower mean ($M = 58.13, SD=11.84$) than males in NonTitle I schools ($M = 64.93, SD=13.05$) a difference of almost 7 points. There was a difference between females in NonTitle I schools and males in Title I schools ($p = <. 01$). Males in Title I schools had a mean on reading ($M = 53.02, SD=13.99$) that was 14 points lower than females in NonTitle 1 schools ($M = 67.05, SD=11.18$). There was a difference between males in Title I schools and males in NonTitle I schools ($p = <. 01$). Males in Title I schools had a mean reading score ($M = 53.02$) that was almost 12 points lower than the mean for males in NonTitle I schools ($M = 64.93$). There was no difference in the reading means of females and males in NonTitle I schools ($p = .92$). Table 2 shows the means and standard deviations, as well as 95% confidence intervals for the pair wise differences for the reading means of the four gender groups.

Table 2

Reading Means and Standard Deviations With 95% Confidence Intervals of Pair wise Differences Among Gender Groups

Reading	N	M	SD	Female	Female	Male
				Title I	NonTitle I	Title I
Female Title I	128	58.13	11.84			
Female NonTitle I	61	67.05	11.18	-13.7 to -4.2		
Male Title I	128	53.02	13.99	.8 to 9.4	9.0 to 19.1	
Male NonTitle I	61	64.93	13.05	-12.1 to -1.5	-3.78 to 8.0	-17.5 to 6.4

Research Question #2

Is there a difference among fourth-grade math scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?

Ho2: There is no difference in fourth-grade math scores among gender groups in Title I and NonTitle I schools.

Figure 2 shows the distribution of math scores for each of the four gender groups.

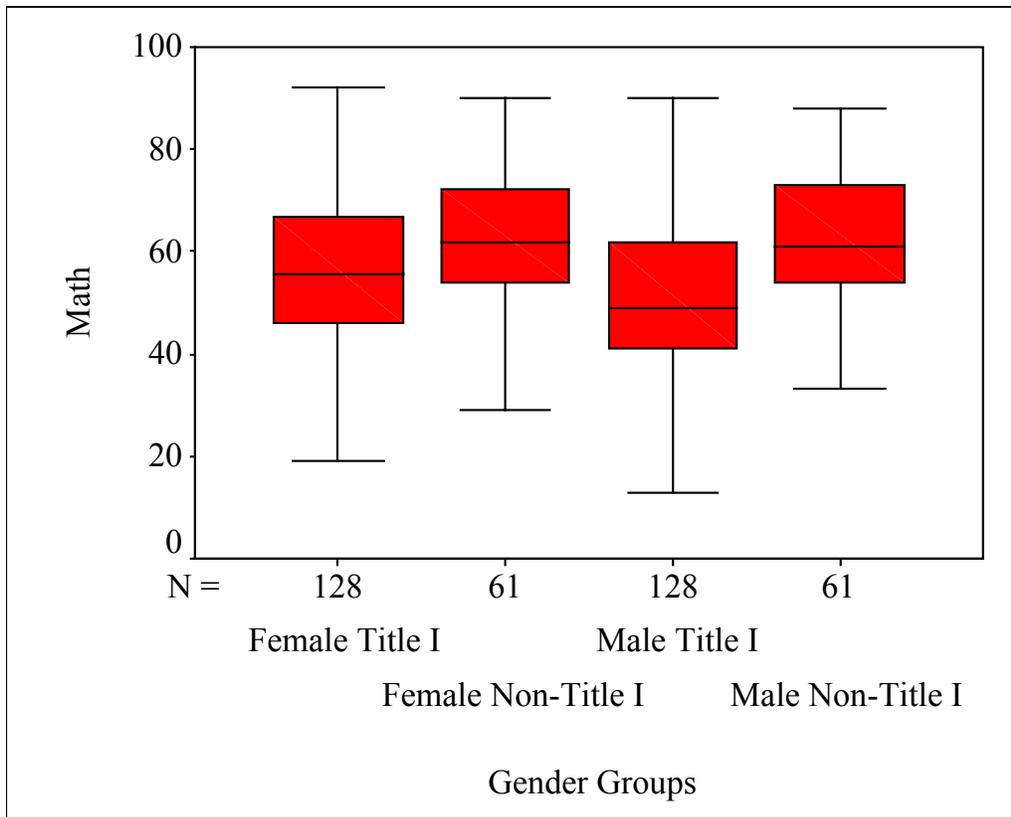


Figure 2. Distribution of Math Scores for Gender Groups

A one-way analysis of variance was conducted to evaluate the relationship between gender groups and math scores. The independent variable, gender groups had four levels: female students who attended Title I schools; female students who attended No-Title I schools; male students who attended Title I schools; and male students who attended NonTitle I schools. The ANOVA was significant, $F(3, 374) = 11.92, p = <. 01$. The strength of the relationship, as measured by $\eta^2 = .09$, indicated that close to nine percent of the variance in reading scores was accounted for by gender groups.

Because the overall F was significant, post hoc multiple comparisons were conducted to determine which pairs of reading gender group means were different. A Tukey procedure was selected because equal variances were assumed, $F(3, 374) = 1.32, p = .27$.

There was a difference between females in Title I schools and females in NonTitle I schools ($p = .009$). The math mean for females in Title I schools ($M = 55.60, SD = 15.08$) was 7.5 points lower than the math mean for females in NonTitle I schools ($M = 63.13, SD = 13.09$). There was a difference between females in Title I schools and males in NonTitle I schools ($p = .05$). The math mean for females in Title I schools ($M = 55.60, SD = 15.08$) was six points lower than the math mean for males in NonTitle I schools ($M = 61.70, SD = 14.52$). There was a difference between females in NonTitle I schools and males in Title I schools ($p < .01$). The math mean for males in Title I schools ($M = 51.01$) was 12 points lower than females in NonTitle I schools ($M = 63.13, SD = 13.09$). There was a difference between males in Title I schools and males in NonTitle I schools ($p < .01$). The mean for males in Title I schools ($M = 51.01, SD = 16.55$) was almost 11 points lower than the mean for males in NonTitle I schools ($M = 61.70, SD = 14.50$). There was no difference between males and females in Title I schools ($p = .08$), or between males and females in NonTitle I schools ($p = .96$).

Table 3 shows the math means and standard deviations with 95% confidence intervals for the pair wise differences among gender groups.

Table 3

Math Means and Standard Deviations With 95% Confidence Intervals of Pair wise Differences

Math	N	M	SD	Female	Female	Male
				Title I	NonTitle I	Title I
Female Title I	128	55.60	15.08			
Female NonTitle I	61	63.13	13.085	-13.64 to -1.42		
Male Title I	128	51.01	16.55	-.31 to 9.50	6.0 to 18.2	
Male NonTitle I	61	61.70	14.52	-12.21 to 0.00	-5.7 to 8.5	-16.8 to -4.6

Research Question #3

Is there a difference between fourth-grade reading scores of economically disadvantaged students in Title I schools and NonTitle I schools?

Ho₃₁: There is no difference in fourth-grade reading scores between economically disadvantaged students who attend Title I schools and NonTitle I schools.

A *t* test for independent samples was conducted to evaluate whether the means for reading were different for economically disadvantaged students who attended a Title I school and economically disadvantaged students who attended a NonTitle I school. The *t* test showed there was no difference between economically disadvantaged students in Title I and NonTitle I schools on reading, $t(185) = -1.37, p = .18$. The η^2 index was .01, which indicated a very small effect size. The reading mean for economically disadvantaged students who attended Title I schools ($M = 48.20, SD = 11.16$) was similar to the reading mean of economically disadvantaged students who attended NonTitle I schools ($M = 50.66, SD = 12.45$). The 95% confidence interval for the difference in means was -6.03 to 1.11. Figure 3 shows the distribution of reading

scores for economically disadvantaged students who attended Title I schools and NonTitle I schools.

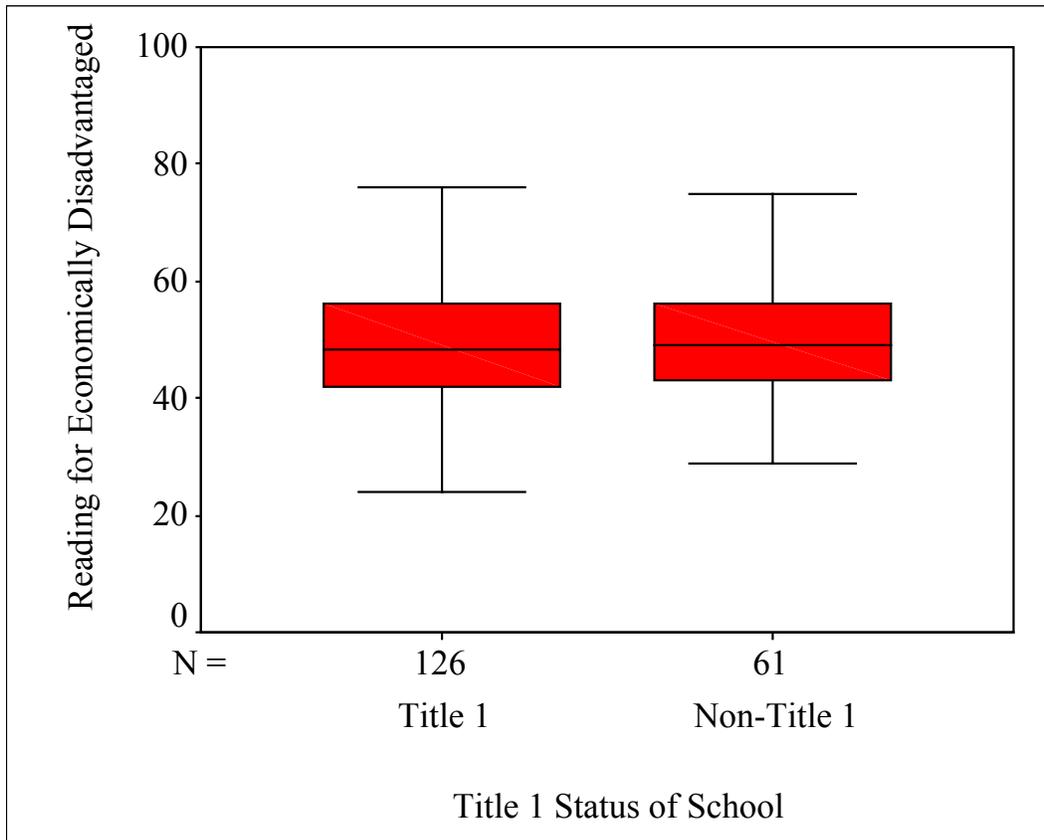


Figure 3. Distribution of Reading Scores for Economically Disadvantaged Students Who Attended Title I and NonTitle I Schools

Research Question #4

Is there a difference between fourth-grade math scores of economically disadvantaged students in Title I schools and NonTitle I schools?

Ho4: There is no difference in fourth-grade math scores between economically disadvantaged students who attend Title I schools and NonTitle I schools.

A *t* test for independent samples was conducted to evaluate whether the means for math were different for economically disadvantaged students who attended a Title I school and economically disadvantaged students who attended a NonTitle I school. The *t* test showed there was no difference between economically disadvantaged students in Title I and NonTitle I schools on math, $t(185) = .15, p = .88$. The η^2 index was .001, which indicated a very small effect size. The math mean for economically disadvantaged students who attended Title I schools ($M = 46.22, SD = 14.70$) was similar to the math mean of economically disadvantaged students who attended NonTitle I schools ($M = 45.89, SD = 15.09$). The 95% confidence interval for the difference in math means was -4.23 to 4.9. Figure 4 shows the distribution of math scores for economically disadvantaged students who attended Title I schools and NonTitle I schools.

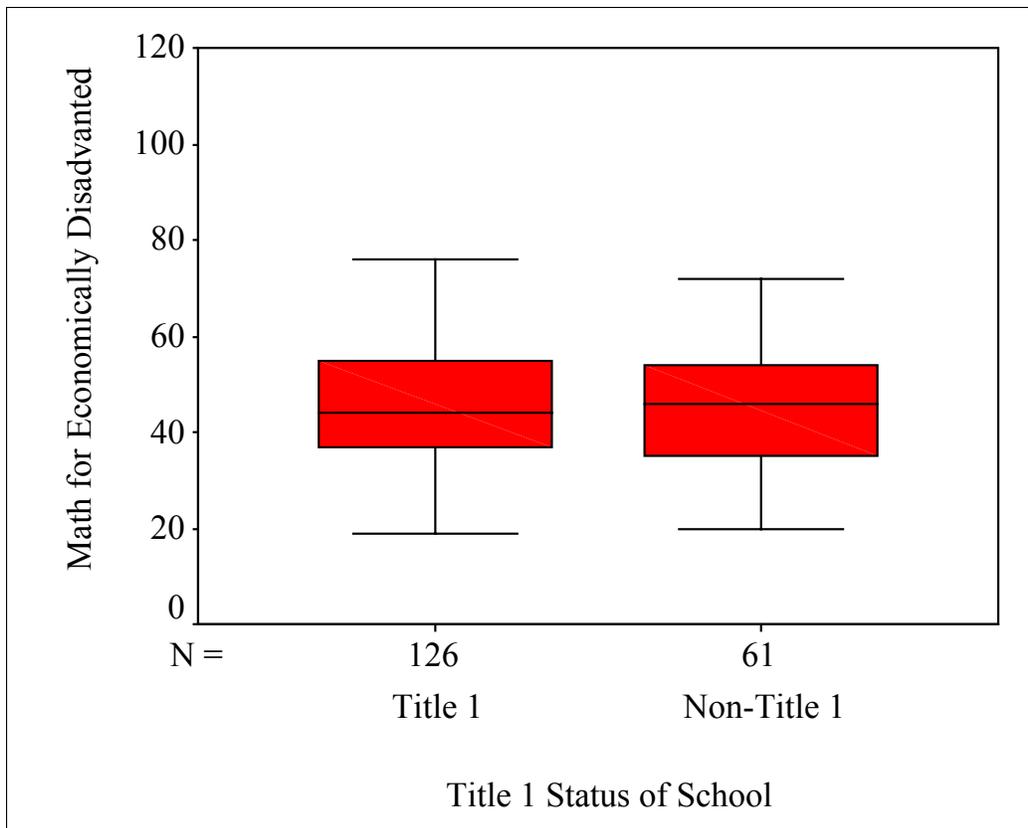


Figure 4. Distribution of Math Scores for Economically Disadvantaged Students Who Attended Title I and NonTitle I Schools

Research Question #5

Is there a difference between fourth-grade reading scores of students with disabilities in Title I schools and NonTitle I schools?

Ho5: There is no difference in fourth-grade reading scores between students with disabilities who attend Title I schools and NonTitle I schools.

A *t* test for independent samples was conducted to evaluate whether the means for reading were different for students with disabilities who attended a Title I school and students with disabilities who attended a NonTitle I school. The *t* test showed there was a difference between students with disabilities in Title I and NonTitle I schools in reading, $t(185) = -2.25, p = .03$. The η^2

index was .027. The reading mean for students with disabilities who attended Title I schools ($M = 20.20$, $SD = 13.16$) was different from the reading mean of students with disabilities who attended NonTitle I schools ($M = 25.07$, $SD = 15.13$). The 95% confidence interval for the difference in math means was -9.13 to -.60. Figure 5 shows the distribution of reading scores for students with disabilities who attended Title I schools and NonTitle I schools.

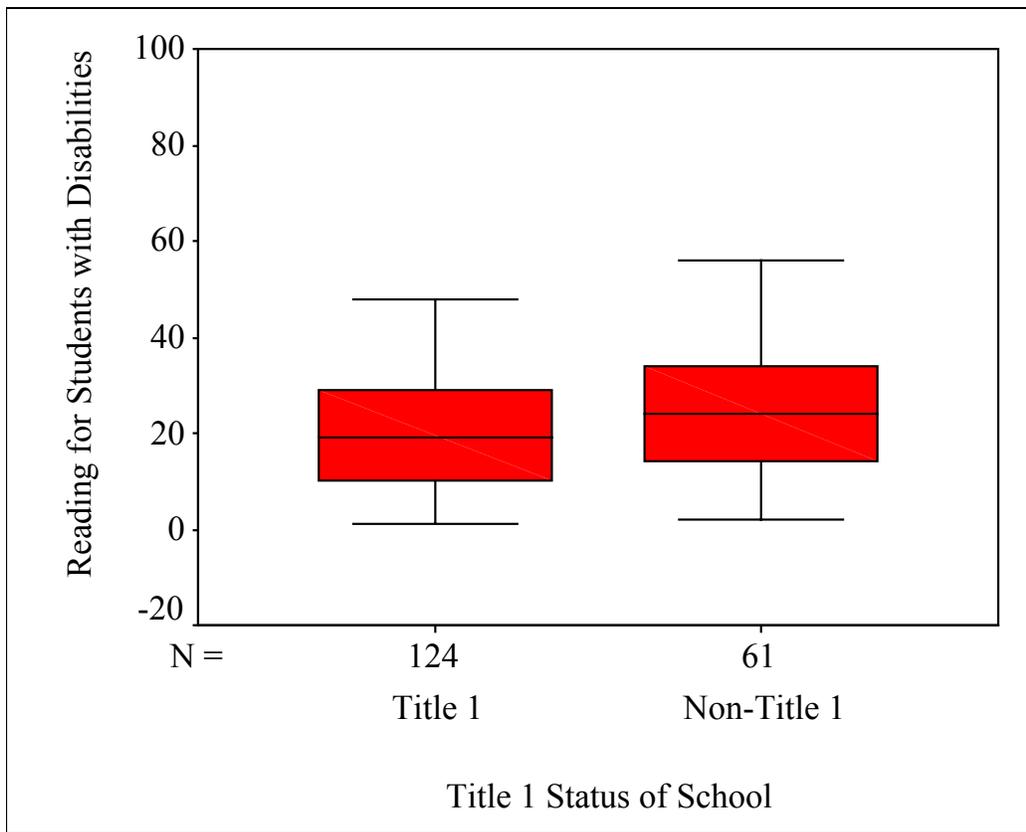


Figure 5. Distribution of Reading Scores for Students With Disabilities Who Attended Title I and NonTitle I Schools

Research Question #6

Is there a difference between fourth-grade math scores of students with disabilities in Title I schools and NonTitle I schools?

Ho6: There is no difference in fourth-grade math scores between students with disabilities who attend Title I schools and NonTitle I schools.

A *t* test for independent samples was conducted to evaluate whether the means for math were different for students with disabilities who attended a Title I school and students with disabilities who attended a NonTitle I school. The *t* test showed there was a difference between students with disabilities in Title I and NonTitle I schools in math, $t(185) = -.50, p = .62$. The η^2 index was .001. The math mean for students with disabilities who attended Title I schools ($M = 22.09, SD = 13.30$) was similar to the math mean of students with disabilities who attended NonTitle I schools ($M = 23.21, SD = 16.12$). The 95% confidence interval for the difference in math means was -5.53 to 3.28. Figure 6 shows the distribution of math scores for students with disabilities who attended Title I schools and NonTitle I schools.

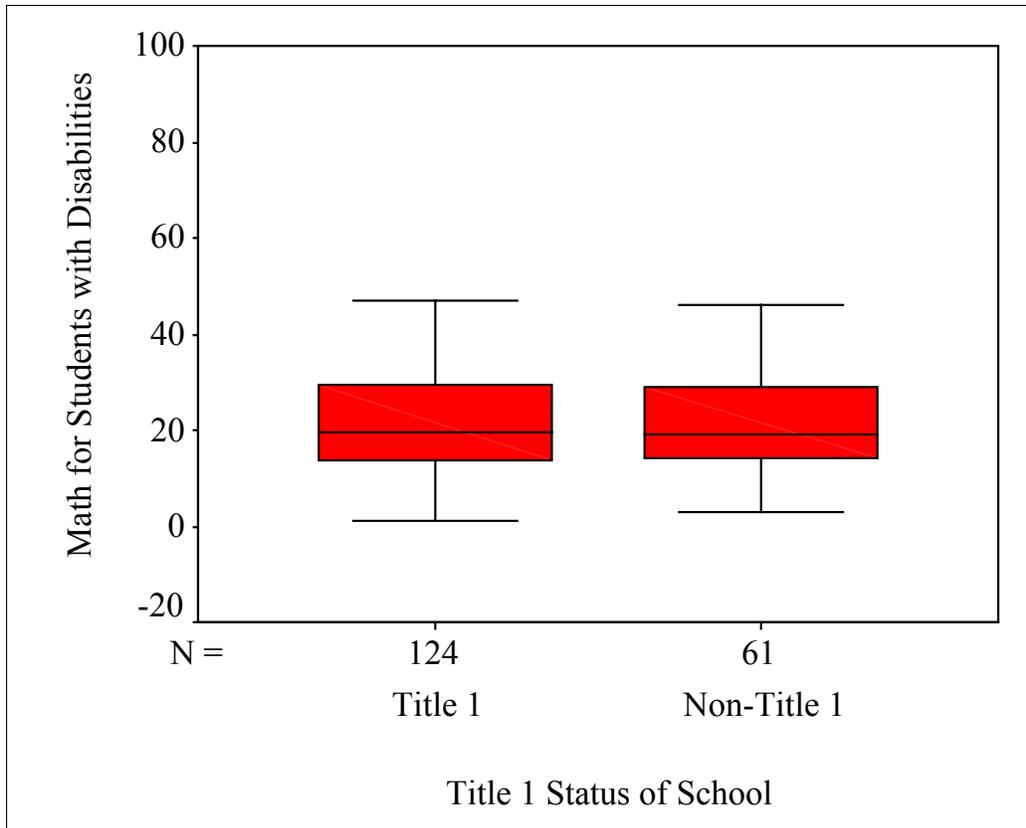


Figure 6. Distribution of Math Scores for Students With Disabilities Who Attended Title I and NonTitle I Schools

In summary, there are some differences between Title I and NonTitle I fourth-grade students in the subject areas of reading and math. Significant differences were noted within the subcategory of gender in both reading and math. Significant differences were also noted within the subcategory of students with disabilities in the content area of math. No significant differences were found in reading for students with disabilities. There were no significant differences between Title I and NonTitle I schools in reading and math within the subcategory of economically disadvantaged students.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine if there is a difference between fourth-grade students in Title I schools and fourth-grade students in NonTitle I schools. The study focused on the content areas of reading and math. The data were collected from 172 schools in 21 East Tennessee school districts. To make the study more specific, the schools were compared using three of the five categories listed in *The No Child Left Behind Act*. The categories of gender, economically disadvantaged, and students with disabilities fit the demographics of this study. The categories of ethnicity and English as a second language were not used because of a lack of students represented in the categories.

Summary of Findings

Research Questions #1 and #2

1. Is there a difference among fourth-grade reading scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?

The null hypothesis for reading in the subcategory of gender was rejected. The Tamhanes's T2 post hoc test was used to test for pair wise differences. A summary of these findings indicates that Title I females scored higher than Title I males with a difference of 5.11 points. This was the only pair of comparisons that indicated a Title I school out performed a NonTitle I school in reading. NonTitle I females out performed both Title I females (8.92) and Title I males (14.03). NonTitle I males out performed both Title I females (6.81) and Title I males (11.92). In comparison of these pairs of gender groups, NonTitle I students always performed higher than Title I students.

2. Is there a difference among fourth-grade math scores of gender groups in Title I schools and NonTitle I schools (Title I boys to NonTitle I boys, Title I girls to NonTitle I girls, Title I boys to NonTitle I girls, and Title I girls to NonTitle I boys)?

The null hypothesis for math in the subcategory of gender was rejected. The Tukey HSD post hoc test was used to further test for significant differences. In the content area of math, it appeared that NonTitle I students consistently performed better than Title I students. Female NonTitle I students scored higher than both female and male Title I students. The difference between the female students was 7.53 points and the difference between NonTitle I females and Title I males was 12.12 points. Male NonTitle I students also scored higher than both female and male Title I students. The difference between the male students was 10.10 points and the difference between NonTitle I male and Title I female was 6.10 points.

The federal government claims that the purpose of the Title I Part A Program is to support local school districts as they strive to improve teaching and learning for students in high-poverty schools. This process should help students meet the state's challenging content and performance standards (McCargar, 2003a). Since 1965, more than \$321 billion in federal funding has been spent on elementary and secondary education programs for disadvantaged students. The results from the gender portion of this study should raise concern in the minds of state and federal officials. Based on this portion of this study, it is safe to say that Non Title I schools are out performing Title I schools in the subcategory of gender in the content areas of reading and math

Research Questions #3 and #4

3. Is there a difference between fourth-grade reading scores of economically disadvantaged students in Title I schools and NonTitle I schools?

The *t* test for reading showed there was no significant difference between economically disadvantaged students in Title I schools and economically disadvantaged students in NonTitle I schools. This outcome goes against some of the research presented in Chapter 2 of this paper.

Some of the research suggested that economically disadvantaged students attending NonTitle I schools performed higher than did economically disadvantaged students who attended a Title I school. It appears based on this study, that there is no relationship between the Title I status of the school and the reading scores of fourth-grade students who are economically disadvantaged. This outcome is not surprising given the focus that the state of Tennessee has placed on teaching reading.

4. Is there a difference between fourth-grade math scores of economically disadvantaged students in Title I schools and NonTitle I schools?

The *t* test for math showed there was no significant difference between economically disadvantaged students in Title I schools and economically disadvantaged students in NonTitle I schools. This result indicates that Title I status of the school does not affect the math scores of fourth-grade students who are economically disadvantaged. It appears that the mastery of math skills is similar between Title I and NonTitle I schools in the state of Tennessee for students who are economically disadvantaged

The outcome of this subcategory total contradicts the results of the gender subcategory. Based on this study, it appears that the students receiving free or reduced-priced lunches in Title I schools have similar scores in math and reading when compared to students receiving free or reduced-priced lunches in NonTitle I schools. The outcome of this study suggests that the programs and strategies being implemented with Title I funding are being effective. This does not match the federal concerns expressed by President George H. W. Bush's administration in the early 1990s as they tried to develop a reform bill called America 2000. Although this act did not pass, President Bill Clinton followed up with the "Goals 2000" act in 1993 (McCargar, 2003b). This was also a reform bill to address the gap noted between economically disadvantaged and noneconomically disadvantaged students (Grissmer et al., 1998). Based on the results of this study, there is not a gap between Title I schools and NonTitle I schools in the subcategory of

economically disadvantaged students in the content areas of reading or math. Although this outcome is surprising, it helps validate the efforts made by Title I schools in East Tennessee.

Research Questions #5 and #6

5. Is there a difference between fourth-grade reading scores of students with disabilities in Title I schools and NonTitle I schools?

The *t* test showed there was a significant difference between the reading scores of students with disabilities in Title I schools and students with disabilities in NonTitle I schools. The null hypothesis was rejected. Students with disabilities who attended Title I schools had a lower mean in reading than students with disabilities who attended NonTitle I schools. It appears that fourth-grade students with disabilities who attend NonTitle I schools are performing higher in reading than those students with disabilities who attend Title I schools.

6. Is there a difference between fourth-grade math scores of students with disabilities in Title I schools and NonTitle I schools?

The *t* test showed there was no significant difference in the math scores of students with disabilities who attended Title I schools and NonTitle I schools. The null hypothesis was retained. It appears based on this study that Title I status of the school does not affect the math scores of fourth-grade students with disabilities. Based on the evaluation of this subcategory, the mastery level of math skills appears similar in Title I and NonTitle I schools for students with disabilities

When *The No Child Left Behind Act of 2001* was signed by President George W. Bush on January 8, 2002, it had the potential to make special education departments all across the United States very nervous. This act requires states to raise achievement levels for all students, including those with disabilities (Wayne & Youngs, 2003). Although the central theme of the *No Child Left Behind Act* appears to focus on the best interest of children, it has been plagued with controversy because of a lack of state, local, or federal funding (Rose & Gallup, 2003).

This is the part that makes special educators nervous. Not only are these educators responsible for having students with severe disabilities reading on grade level, they are also expected to make this happen with limited funding and support. The outcome of the students with disabilities portion of this study suggests there are not significant differences in the Title I and the NonTitle I settings in the content area of math. This statistical outcome is exciting for special educators in the Title I setting as they strive to compete with the NonTitle I schools. Reading scores were not as compatible. The content area of reading for students with disabilities may be an area where East Tennessee could be labeled as “not performing” (Rose & Gallup). The penalties of not meeting Adequate Yearly Progress (AYP) are presented in Chapter 2 of this study.

Conclusions

Based on the analysis and findings of this study, educators, parents, and administrators can determine that there are mixed differences in Title I and NonTitle I learning settings. As school systems strive to meet the demands of *The No Child Left Behind Act*, the educational community should be aware of the following conclusions that can be drawn from this study.

Information related to gender groups was collected from students who were in fourth grade and attended an elementary school located in East Tennessee. These schools were classified as being a Title I school or a NonTitle I school. Title I schools receive federal funding based on the number of students receiving free or reduced-price lunches. NonTitle I schools have some students who receive free or reduced-price lunches but not enough of these students to receive federal funding to help educate them. All schools, regardless of their Title I status, are meant to serve students who are economically disadvantaged and who are not economically disadvantaged. All schools may have students with and without disabilities represented in their student body. The enrollment of students with disabilities does not affect Title I status or

funding. However, students with disabilities who are formally classified as requiring special education services have an individualized education plan that focuses on their specific needs. The research and presentation of the comparison gender groups can be very confusing. There are some general conclusions that can be made from this study related to gender groups.

Based on this study, it appears that NonTitle I students always scored higher than Title I students in the content areas of reading and math. Female Title I students scored higher than did Title I males in reading. There was not a significant difference between females and males in Title I schools in the content area of math. This information is of concern when evaluating the effectiveness of Title I funding. In the following subcategories, there are areas where it appears that Title I schools are competitive with NonTitle I schools.

For years, the driving force behind Title I funding has been to close the gap between economically disadvantaged students and students who are not economically disadvantaged. As the country continues to evaluate the effects of Title I funding, educators have found themselves evaluated by the standards of The *No Child Left Behind Act*. This act allows for comparison of schools using subcategories. In this study, economically disadvantaged students who attended Title I schools were compared to those in NonTitle I schools. This comparison was made in the subject areas of reading and math. Because no differences were noted in these areas, it appears that Title I schools are stretching the economically disadvantaged students to the same levels as the NonTitle schools. This outcome supports that the math and reading programs being used in Title I school may be effective. These programs are being funded in the Title I schools to help meet the demands of educating high numbers of students who are economically disadvantaged. The concept behind Title I funding is to help level the field between Title I schools and NonTitle I schools. Even though the demographics between Title I schools and NonTitle I schools are very different, it appears that economically disadvantaged students are performing at similar levels in the areas of reading and math.

Although no differences for students with disabilities were detected in the content area of math, there were differences in the content area of reading. Students with disabilities attending NonTitle I schools appeared to out perform students with disabilities attending Title I schools in the area of reading. Because *No Child Left Behind* expects all students to be reading on grade level, this outcome could be a problem for school systems in East Tennessee. There is a possibility that reading programs and teaching strategies used in NonTitle I schools are more effective than those being used in Title I schools. An indepth evaluation between the reading and math programs used in Title I and NonTitle I schools may be necessary to obtain any generalizations about why there were differences in the content area of reading and not math.

Recommendations for Practice

“For too long, many of our schools did a good job educating some of our children,” said Paige (2002), U. S. Secretary of education, when President Bush signed the *No Child Left Behind Act* into law on January 8, 2002. Paige further explained that this law would help ensure that all children would have access to a high-quality education (U.S. Department of Education, 2002). As noted before in this study, the central theme of the *No Child Left Behind Act* appears to focus on the best interests of children, but it has been plagued with controversy because of a lack of state, local, or federal funding (Rose & Gallup, 2003). As always, the biggest issue for educators is support and funding. As public educators embark on this landmark reform, it will be vital to embrace programs that are successful and abolish those that are not. As a result of this study, specific recommendations can be made to the public education world.

A continuation of using Title I funding to close the gap between students who are economically disadvantaged and those who are not economically disadvantaged is recommended in all subject areas. It appears that Title I funding has helped to close this gap in fourth-grade reading and math. Title I programs like after school care, intervention instead of retention strategies, remedial programs for reading and math, and preschool programs are being effective.

These programs should be seriously considered by all schools. They appear to have a positive effect on classroom performance. School systems should develop partnerships with area systems to share ideas and help train teachers in how to make programs successful.

Individualized reading programs that are challenging should be offered to all students including those with disabilities. Many Title I and NonTitle I schools are experiencing success with programs like *Reading Counts* and *Accelerated Reading*. These programs are not designed to replace the structured reading programs; rather, they are designed to support the structured reading programs with individualized options. Some schools are finding success with skill grouping for organized reading instruction. Based on the gender portion of this study, Title I males were outperformed in every comparison. Teachers should be very careful with the stereotype that females are better readers than males. Students will rise or settle to our expectations.

My final recommendation is directed to the Tennessee Department of Education. It is very difficult to conduct studies of this nature because of the constant changes of the reporting methods used by our state. It is impossible to conduct an ongoing study for the same reason that is stated above. In my judgment, the Tennessee Department of Education should fully support all approved research topics in the area of data analysis. If this does not happen, large-scale research projects will not be possible. In return, the state department would have access to a much greater pool of significant data related to students' performance.

Recommendations for Further Research

As a result of *No Child Left Behind*, all students must meet high academic standards. All states will be required to create and administer annual assessments in grades three through eight. Data from these tests will be disaggregated for students by poverty levels, race, ethnicities, disabilities, and limited English proficiencies to ensure that all students are performing to the best of their ability. Annual school report cards will provide comparative information on the

quality of schools within a given area. This will make a school's performance available to the general public (U.S. Department of Education, 2002). As a result of this widespread collection and presentation of data, many recommendations can be made for future research projects.

A continuation of analyzing subcategories within Title I and NonTitle I schools could help ensure a positive outcome for students. This same study could be replicated using different grades, subcategories, and content areas. This study could also be replicated in other regions across the state of Tennessee. This would allow for different demographics and possibly different subcategories for comparison. Although these data are not public at this point, they are provided to each school system from the Tennessee Department of Education. Sample size of future studies may be affected by the method of reporting used by the state department.

A comparison of Title I and NonTitle I schools could be done using specific programs as the unit of comparison. This should help to define which programs are being effective in both school settings. It could also help educators define the programs that are not being effective. This type of study should be performed using a quantitative or a qualitative method of research.

Summary of the Study

In conclusion, this study appeared somewhat stereotypical at first. It is a common assumption that NonTitle I schools should outperform Title I schools. Within the subcategory of gender for reading and math, this was the case. Title I males consistently performed the worst when compared to the other groups. The most profound outcome of this study was found when taking a closer look at the desegregated data. The assumption that NonTitle I schools should outperform Title I schools was apparently proven incorrect in the subcategories of economically disadvantaged students in reading, economically disadvantaged students in math, and students with disabilities in the content area of math. In these categories, no significant differences were found. These outcomes support the ongoing efforts made by Title I schools as they continue to create a learning environment that is comparable to the NonTitle I learning setting.

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