

A COMPARISON OF ACADEMIC ACHIEVEMENT OF ECONOMICALLY  
DISADVANTAGED ELEMENTARY STUDENTS SERVED IN TITLE I  
PART A PROGRAMS: TARGETED ASSISTANCE  
VERSUS SCHOOLWIDE MODELS

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This study analyzed test scores of economically disadvantaged students who attended two elementary schools implementing different types of Title I models from 1999-2001. Test scores from the Texas Assessment of Academic Skills (TAAS), the Iowa Test of Basic Skills (ITBS) and the Stanford Achievement Test (SAT-9) were analyzed. One school implemented the targeted assistance model (less than 50% poverty), which focused resources on students identified as failing or at risk of failing. The other a schoolwide model (95% poverty), which used resources to help all students in a school regardless of whether they were failing, at risk of failing, or economically disadvantaged.

The quantitative approach was used with a causal comparative design. A cohort of continuously enrolled students was identified for the TAAS ( $n=155$ ) and the ITBS/SAT-9 ( $n=135$ ). Descriptive statistics such as the frequency, mean, and standard deviation, were used to measure differences on the Texas Learning Index (TLI) for the TAAS, and Normal Curve Equivalent (NCE) on the ITBS/SAT-9. Analysis of Covariance (ANCOVA) was used to partially adjust for preexisting differences among the groups and because randomization was not possible. The independent variable was type of Title I model, targeted assistance or schoolwide. The dependent variable was the

achievement measure, and the covariate was the initial achievement scores in third grade (pretest).

The ANCOVA reports and descriptive statistics showed that economically disadvantaged students performed better in reading and math on TAAS and ITBS/SAT-9 at the targeted assistance school in 1999 and 2001, with mixed results in 2000. The academic performance of economically disadvantaged students at the targeted model was consistent all three school years. They scored slightly lower than the non-economically disadvantaged students, but higher than their peers at the schoolwide model. The students' third grade pretest score was the most significant predictor of future performance.

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES .....	vi
LIST OF FIGURES .....	ix
Chapter	
1. INTRODUCTION.....	1
Problem Statement	
Professional Significance of the Problem	
A Brief Overview of Title I	
Title I: Funding for Economically Disadvantaged Students	
Research Questions	
Hypotheses Used for this Study	
Null Hypotheses	
Title I History Summarization	
Organization of the Remaining Chapters of this Dissertation	
2. REVIEW OF THE LITERATURE.....	18
Search Process	
Title I Funding and Implications on Student Achievement	
Title I and State Politics	
Title I Instructional Delivery Models	
Targeted Assistance Model	
Schoolwide Model	
Title I Effectiveness: Mixed Findings	
Major Title I Effectiveness Studies	
Literature Review Lessons	
Definitions	
3. METHODOLOGY .....	38
Overview of the Methodology	
Phases of the Study	
Research Setting	
Data Collection and Analysis	
Delimitations of the Study	
Summary of Methodology	

4. PRESENTATION OF FINDINGS.....	49
Collecting and Coding of Data	
Analysis of Covariance	
Measurement Standards	
Research Questions Revisited	
Hypotheses Used for This Study	
Null Hypotheses	
2001 Reading and Math Data Analysis	
2001 Summary of Results	
2000 Reading and Math Data Analysis	
2000 Summary of Results	
1999 Reading and Math Data Analysis	
1999 Summary of Results	
Summary of Findings 1999-2001	
5. DISCUSSION OF FINDINGS AND RECOMMENDATIONS .....	84
Limitations and Generalizability of the Results	
Reading Achievement Discussion 1999-2001	
Math Achievement Discussion 1999-2001	
The Mixed Results in 2000	
Hypotheses Revisited	
Putting the Results in Perspective	
Discussion of the Findings	
The Importance of Ensuring Success for ALL Students	
Recommendations for Further Study	
Conclusions	
REFERENCES .....	101

## LIST OF TABLES

### Table

1. Title I Funds by School Poverty Level, 1997-98 .....	27
2. Targeted Assistance Title I Model: Enrollment 1999-2001 .....	41
3. Schoolwide Title I Model: Enrollment 1999-2001 .....	41
4. Targeted Assistance Title I Model: Ethnic Distribution 1999-2001 .....	42
5. Schoolwide Title I Model: Ethnic Distribution 1999-2001 .....	43
6. Descriptive Statistics, Dependent Variable: TAAS Reading TLI (04/01).....	56
7. Analysis of Covariance for TAAS Reading TLI (04/01), using Reading TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status.....	57
8. Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Reading NCE (04/01).....	58
9. Analysis of Covariance for ITBS/SAT-9 Reading NCE (04/01), using ITBS/SAT-9 Reading NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status .....	59
10. Descriptive Statistics, Dependent Variable: TAAS Math TLI (04/01) .....	60
11. Analysis of Covariance for TAAS Math TLI (04/01), using Math TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status.....	61
12. Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Math NCE (04/01).....	62
13. Analysis of Covariance for ITBS/SAT-9 Math NCE (04/01), using ITBS/SAT-9 Math NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status .....	63
14. Descriptive Statistics, Dependent Variable: TAAS Reading TLI (04/00).....	64



15. Analysis of Covariance for TAAS Reading TLI (04/00), using Reading TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status.....	65
16. Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Reading NCE (04/00).....	66
17. Analysis of Covariance for ITBS/SAT-9 Reading NCE (04/00), using ITBS/SAT-9 Reading NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status .....	67
18. Descriptive Statistics, Dependent Variable: TAAS Math TLI (04/00) .....	68
19. Analysis of Covariance for TAAS Math TLI (04/00), using Math TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status.....	69
20. Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Math NCE (04/00).....	70
21. Analysis of Covariance for ITBS/SAT-9 Math NCE (04/00), using ITBS/SAT-9 Math NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status .....	71
22. Descriptive Statistics, Dependent Variable: TAAS Reading TLI (04/99).....	72
23. Analysis of Covariance for TAAS Reading TLI (04/99), using Reading TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status.....	73
24. Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Reading NCE (04/99).....	74
25. Analysis of Covariance for ITBS/SAT-9 Reading NCE (04/99), using ITBS/SAT-9 Reading NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status .....	75
26. Descriptive Statistics, Dependent Variable: TAAS Math TLI (04/99) .....	76
27. Analysis of Covariance for TAAS Math TLI (04/99), using Math TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status.....	77

28. Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Math NCE (04/99) ..... 78

29. Analysis of Covariance for ITBS/SAT-9 Math NCE (04/99), using ITBS/SAT-9 Math  
NCE (04/98) as covariate, fixed variables: Title I model and Economically  
Disadvantaged status ..... 79

## LIST OF FIGURES

### Figure

1. Title I Funding, 1965-2001 .....	11
2. Title I Funding, 1996-2004 .....	12
3. Projected Title I Funding 2002-2007 .....	12
4. Change in Number of Title I Schoolwide Programs, 1991-1992 to 1998-1999 .....	25
5. TAAS Reading TLI Mean Comparison of Economically Disadvantaged Students by Title I Model, Schoolwide versus Targeted .....	81
6. ITBS/SAT-9 Reading NCE Mean Comparison of Economically Disadvantaged Students by Title I Model, Schoolwide versus Targeted .....	81
7. TAAS TLI Comparison of Economically Disadvantaged Students by Title I Model, Schoolwide versus Targeted .....	82
8. ITBS/SAT-9 Math NCE Mean Comparison of Economically Disadvantaged Students by Title I Model Schoolwide versus Targeted .....	82

## CHAPTER 1

### INTRODUCTION

According to the National School Boards Association (2000), “Title I success depends, ultimately, on the ability of local policymakers to develop and implement educational strategies that will best serve the needs of America’s disadvantaged school children” (p.19). Research on the effectiveness of the use of Title I is essential for federal, state, and local leaders to make policies that ensure that economically disadvantaged students succeed in school.

The federally funded Title I program provided schools with economically disadvantaged children \$12.4 billion in 2004 (No Child Left Behind Act, 2001). Funding has steadily increased since its inception in 1965, when President Johnson declared his “War on Poverty” and signed the Elementary and Secondary Education Act (ESEA) into law. This compensatory education program was designed to assist and remediate skills of economically disadvantaged children; that is, those who qualify for free or reduced lunch. Specifically, those economically disadvantaged students considered to be achieving below their counterparts or at risk of failing.

Over 90% of America’s schools participate in either a targeted assistance Title I model or a schoolwide approach (National School Board Association, 2000). Title I is the largest monetary investment in education made by the federal government to date. Researchers have pointed out that numerous Title I schools have come up short of their intended mission and have served to shed a negative light on the program as a whole (Rees, 1999; Slavin, 2001).

On the other hand, Jennings (2001) found the objectives of Title I impressive. Title I aims to make a positive difference in American society by assisting with the education of the most needy students in our schools. Jennings described Title I as “the principal embodiment of the nation’s commitment to educate economically and educationally disadvantaged children” (p. 1).

He concluded that if additional resources were directed to programs for disadvantaged students, “the cycle of poverty could be broken” (p.5).

Kozol (1991) proposes that, regarding equity, “...disparities in funding are enormous, equity after all, does not mean simply equal funding. Equal funding for unequal needs is not equity” (p.5). Greenwald, Hedges, and Leine (1996) contend that financial, material, and human resources are of critical importance, and that “school resources are systematically related to student achievement” (p.384). Shaul (2002) also found that not all economically disadvantaged children receive Title I funding, since funds at the local district are distributed according to the percentage of economically disadvantaged students. Schools with small percentages of economically disadvantaged students may not receive any funding within a school district.

The latest reauthorization of ESEA entitled the No Child Left Behind Act of 2001 (NCLB), aims to increase responsibility for student achievement as determined by state goals and standards. For this goal to be reached, careful consideration must be given to the targeting of educational resources for those students most in need. Economically disadvantaged students live in deprived areas that contribute to the challenge of attaining a well-rounded education and increase their chances of being left behind.

NCLB focuses on results, as well as accountability for student outcomes. A major emphasis is given to those schools that have been historically low-performing based on standardized testing. Most low-achieving schools have a number of characteristics in common, most notably is the correlation between community poverty, academic achievement of students, and the lack of qualified teachers (Puma, Karweit, and Price, 1997; U. S. Department of Education, 1998b).

## Problem Statement

Accountability for results has become the expectation. Today, more than ever, it is critical that funding sources are used effectively to improve student achievement. Improving the academic achievement of economically disadvantaged students presents a big challenge to educators and policymakers. The federal government has attempted to help with these students by spending billions of dollars yearly to help schools that have economically disadvantaged students. Title I schools have been the subject of intense criticism, because of their low academic performance and achievement, particularly on standardized test measures. These schools have tremendous challenges that may not all be addressed simply by a formulaic federal funding mechanism.

For the purposes of this study, economically disadvantaged (poor) students were defined as those students receiving free or reduced lunch. The aim of this study was to compare the academic achievement of poor students enrolled in two Title I schools. These two schools implement two different types of Title I program models. The district also identified eligible students as *served* or *not served* by the Title I program.

Several studies have been conducted to determine the effectiveness of Title I programs and its impact on the academic achievement of economically disadvantaged students (Etheridge, 2000; Fashola and Slavin, 1998; General Accounting Office, 2000; Orland and Stullich, 1997; Puma et al., 1997; Rees, 1999; Wong and Meyer, 1998, 2001). A few of these studies look at the performance of targeted and schoolwide models and make generalizations of the results of their overall student achievement. This study attempts to clarify the differences that may exist when a school has a lower percentage of economically disadvantaged children, and can therefore *target* its assistance compared to a school with a larger number of economically disadvantaged children

where the funds are used *schoolwide* to assist more students than just the economically disadvantaged.

### Professional Significance of the Problem

The careful examination of the standardized testing results provide a gauge of the effectiveness of the two different types of Title I models. Most importantly, however, this study adds to the body of research on schools with economically disadvantaged students that utilize Title I funds to put forth sustained and systematic efforts to improve the academic achievement of economically disadvantaged students.

Lessons can be learned from high-poverty schools that have succeeded in increasing academic achievement and have research-based classroom practices which can be highlighted for replication to reach students at-risk (Bell, 2001; Etheridge, 2001). Jennings (2001) points out that African American and Hispanic children are twice as likely to be economically disadvantaged as are Caucasian children. He also points out that most African American and Hispanic children attend schools with students of similar socioeconomic status, and receive inadequate classroom instruction. According to Danielson (2002):

Schools can help students to surmount any negative influences they may encounter at home, years of research, initially through the effective schools movement and continuing today, have demonstrated that students from economically disadvantaged or limited backgrounds fare much better in some schools than in others (p. 14)

The public expects schools to be accountable and responsible for improved student achievement. Consequently, the educational system in the United States will continue to receive much public and media attention because of its importance in the future of our country.

As noted specifically in chapter 2, substantial research has been done that generalizes results of hundreds and sometimes thousands of Title I schools in the United States. Studies that look at one, two, or a small number of specific Title I schools can add clarity to the overall broad body of literature regarding Title I effectiveness. The differences, if any, of the effectiveness of a schoolwide Title I model versus a targeted Title I model to impact the academic achievement of economically disadvantaged students has not been dealt with extensively in the literature.

The General Accounting Office (GAO) conducted a study entitled *Title I Program: Stronger Accountability needed for Performance of Disadvantaged Students. Report to Congressional Requesters* (2000). This study found that schools using the schoolwide approach offered more services to their students. They pointed out that targeted assistance schools offered less extended instructional time, such as after school, weekend, or summer school programs. The study concluded that research on the general effectiveness of the schoolwide approach for improving student achievement in high-poverty schools was inconclusive. According to the same report, “The U. S. Department of Education should implement additional measures to improve research on the effectiveness of specific services in both schoolwide programs and targeted assistance schools” (p. 12).

This study concentrates on two Title I elementary schools in an urban school district in Texas. Both of these schools are upper elementary schools serving approximately 500 students each in grades 4-6. Both schools are in the same geographical area within the urban school district, serving similar type of students. One of these Title I schools was designated *targeted assistance* by the district during the 1998-1999, 1999-2000, and 2000-2001 school years. Forty-seven to 50% of the school’s student population was designated as economically disadvantaged all three of the selected school years. The other elementary school was designated as a



*schoolwide* Title I model for the same school years, since it had 95% of its students were identified as economically disadvantaged. During these school years, a campus could be designated as schoolwide if at least 50% of its students were identified as economically disadvantaged.

This study measures the academic achievement of economically disadvantaged students in math and reading as determined by two standardized tests. The standardized state test Texas Assessment of Academic Skill (TAAS) was administered in 4th through 6th grade. This criterion-referenced test had been administered in Texas for eight years. Therefore, its validity and reliability had been clearly established for measuring purposes. The national norm-referenced tests given during these three school years were the Iowa Test of Basic Skills ITBS® (Houghton Mifflin Company Corporation, Boston, MA, [www.education.uiowa.edu](http://www.education.uiowa.edu)) in 1999 and 2000, and the Stanford Achievement Test SAT-9™ (Harcourt Brace Educational Measurement, San Antonio, TX, [www.hbem.com](http://www.hbem.com)) in 2001.

#### A Brief Overview of Title I

McDaniels (2002) points out that the federal involvement in education stems from the government's desire to have an educated citizenry in order to ensure its success. It is in this vein that the federal government created the Department of Education in 1867 and expanded its reach over the years to include equity issues and academic achievement as its goals. In 1954, *Brown vs. Board of Education, Topeka, Kansas* dealt with the need to integrate students and provide adequate educational facilities for all students. Since this decision, the courts and Congress have tried to address the improvement of the quality of education of minority students and especially economically disadvantaged students.

In 1965, President Johnson launched his War on Poverty with the signing of the Elementary and Secondary Education Act (ESEA). The aim of this law was to help economically disadvantaged students attain higher academic achievement. Title I, Part A was one of the grants included in ESEA. Because of its increased funding over the years, it has become the single most important commitment to education from the federal government to date. Title I was intended to help economically disadvantaged students with the learning deficiencies associated with poverty.

ESEA required states to match funds and to focus the resources on students identified as economically disadvantaged. States were supposed to use these funds to supplement not supplant funding intended for these students. Some districts did not comply with this requirement, and by the early 1970s Congress added rules barring the use of Title I to supplant state and local funding. It imposed strict oversight and detailed reporting, which had the unintended result of segregating economically disadvantaged students via “pullout” programs that provided a good audit trail.

The schoolwide option of delivery of services was introduced in 1978. This option was available to schools with at least 75% poverty levels. It allowed the school to use the funds to benefit all students, not just economically disadvantaged students. At this time, the state was still required to match funds, which prevented almost all eligible schools from implementing schoolwide programs.

The election of President Ronald Reagan had a major impact on Title I allocations. He believed that the federal government should not be overwhelmingly involved in the education business, which should be left to the states. Funding for Title I was reduced with the passage of the Education Consolidation and Improvement Act (ECIA), and Title I was renamed Chapter 1 in 1980.

President George H. Bush signed the Hawkins-Stafford Amendments to the Elementary and Secondary Improvement Act into law in 1988. The most important component of these amendments was the elimination of the local fund-matching requirement. With this passage, Congress mandated a comprehensive longitudinal study of the effects of Chapter 1 on student achievement, it became known as the *Prospects Study*. Puma, Karweit, and Price issued a preliminary report in 1993. They concluded that Chapter 1, as it was configured, was not closing the gap in academic achievement between economically disadvantaged and their more advantaged peers.

In 1994, President Bill Clinton signed the reauthorization of ESEA, naming it the Improving America's Schools Act (IASA). This law returned Chapter 1 to its original name, Title I and lowered the poverty requirement from 75% to 50% for schoolwide model designation. This was a very significant change in the focus of Title I. At this point having half of the school designated as economically disadvantaged now benefited the whole school, and this was not the initial intention of ESEA.

In 2001, President George W. Bush signed the latest reauthorization of ESEA, entitled the No Child Left Behind Act (NCLB). It lowered the poverty level further for schoolwide designation to 40% and required rigorous testing and academic improvement of each student subgroup. All students are required to make adequate yearly progress (AYP) as measured by state standardized testing (NCLB, 2001). It provides parents with the opportunity to move students out of low-performing schools if the school is not making AYP.

From 1965 to 2001, the emphasis of who gets the benefit of the federal funding through Title I, Part A has moved from only economically disadvantaged students to all students in a school with at least 40% of its students in poverty. Not surprisingly, schoolwide programs grew

from 1,629 in 1991 to 19,701 in 1999. According to the General Accounting Office (2000), approximately 82% of Title I schools eligible for the schoolwide option chose this approach to deliver services to their students. Consequently, economically disadvantaged students, the intended beneficiaries of these funds, are not the only ones benefiting from the additional resources. Therefore, it is critical for educators to know how economically disadvantaged students are performing in schoolwide and targeted assistance Title I models. Again, the focus of this study is the performance of economically disadvantaged students at two Title I elementary schools with the two different service delivery approaches. Only those students identified as failing or at-risk of failing, are the recipients of additional resources at the targeted model, while all students benefit at the schoolwide Title I model.

#### Title I Focus: Funding for Economically Disadvantaged Students

Title I was designed to compensate for or help alleviate the disadvantages in learning associated with poverty in the home, school, or community. Its aim was to provide equal funding and programming designed to combat the effects of poverty. According to Payne (1998), poverty is defined as “the extent to which an individual does without resources” (p. 16). These include the lack of support systems, relationships or role models, and knowledge of the *hidden rules* of middle class society. It also includes a high association with low financial, emotional and mental resources. Poverty is most often associated with family income level. It is often made up of single-parent households, tied to the mother’s level of education, and the family’s lack of earning power.

Most children in poverty reside in working families, with 20% of American children under the age of 18 living in poverty (Payne 1998). The initial basic premise of Title I was to help those dealing with the disadvantages of poverty. A major cause of variation in schooling

outcomes is a result of different levels of funding among schools. This issue continues to resurface since the Equality of Educational Opportunity survey (Coleman et al., 1966). The consensus is that there should not be great disparity in funding among school districts in the United States (Smith and Jenkins, 1982).

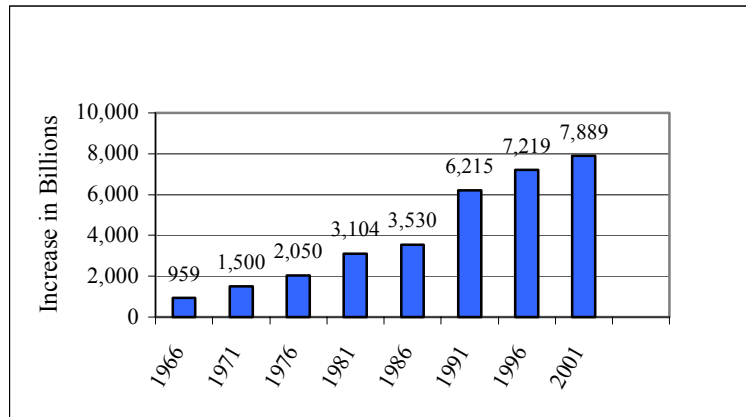
Jennings (1991) attributes Title I's survival and major growth to Congress' belief in positively impacting public education. From its inception policymakers have recognized that "the program has focused on helping children furthest behind in school - generally, those in the lowest quartile of achievement, and those are the children who have shown solid educational progress over the years" (pp. 335-336).

Urban school districts have special problems when dealing with high-poverty children. Anyon (1997) argues that urban districts deal with problems beyond their control and should not be held responsible for low-performing schools. He contends that these problems are a result of economic devastation, racial stigmatization, and political isolation. According to Donahue (2000), urban districts tend to lack the conditions conducive to school reform. He states:

They are plagued with shortages of qualified teachers, high turnover of both teachers and administrators. Schools with demoralized and self-defeating cultures, inadequate and often derelict building and equipment, inadequate resources, sometimes-inept central administrators engaged in endless series of reforms du jour, and dysfunctional political systems including vicious racial and union politics (p. 75).

Even with all of the challenges of poverty in urban and rural districts, Title I grants continue to be a popular attempt to address these problems. Funding for Title I programs have increased steadily since 1965. The increases in funding in 5-year intervals for the period FY

1966-FY 2001 are shown in Figure 1. It reveals that the funding levels increased 800% over the first 25 years.



*Figure 1. Title I Funding, 1965-2001*

Source: U.S. Department of Education, Compensatory Education Program 2003

Since Title I's inception, the program has been the cornerstone of federal support to education, and its annual appropriation of approximately \$7 billion from 1996-2001 (U. S. Dept. of Ed., 2004) takes up the largest portion of the federal elementary and secondary education budget. With NCLB, Title I grants increased substantially from \$7.8 billion in 2001 before the reauthorization of the act to \$12.4 billion in 2004, with considerable increases projected yearly. Figure 2 tracks the steady yearly increase of Title I allocation from 1996 to 2004.

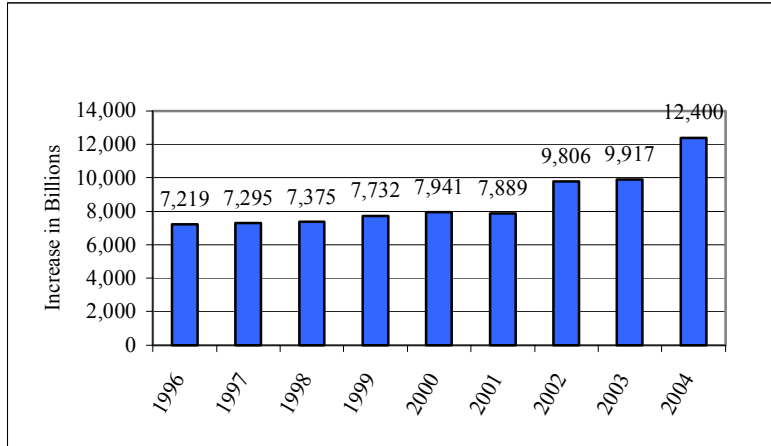


Figure 2. Title I Funding, 1996-2004

Source: U.S. Department of Education, Compensatory Education Program 2003

Figure 3 shows the projected allocations from 2002 – 2007 at the signing of NCLB (U.S. Department of Education, 2004). Actual funding has been lower for the first two years of NCLB implementation because of the increased spending on the military and defense since the unforeseen events that occurred September 11, 2001, as well as combat actions in Afghanistan and Iraq.

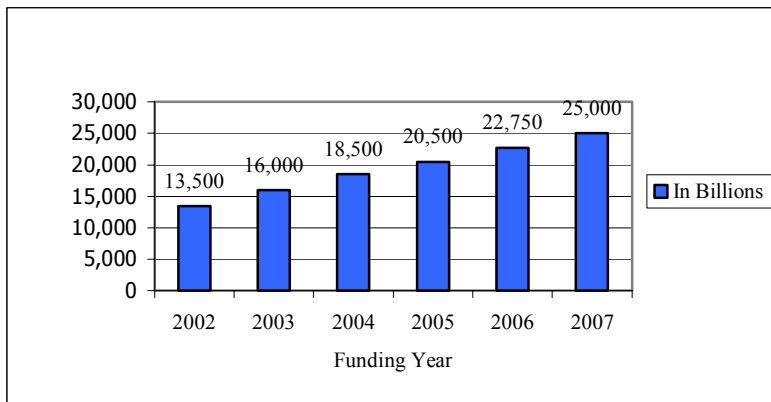


Figure 3. Projected Title I Funding, 2002-2007

Source: U.S. Department of Education, Compensatory Education Program 2003

The span of the program's impact on public education is extensive. Title I reaches over six million children annually, primarily in the early elementary grades (one in five first graders participates in Title I programs), three-quarters of all elementary schools, about half of all middle schools, and one quarter of all high schools (Puma, Karweit, and Price, 1997).

Legislation allocates funds primarily based on the number of school-age students from low-income families who reside in school districts. Districts must decide how to best use their funds once they reach their allocations. They must serve schools with 75% or more economically disadvantaged students. The remaining schools that have less than 75% economically disadvantaged students are served in rank order as funding allows. All schools with at least a 35% poverty level may receive funds. All students within a district who are economically disadvantaged are served through Title I, based on this distribution mechanism (Stullich, Donly, and Stolzberg, 1999). A school designated as targeted assistance, must focus their Title I resources only on students who have been identified as failing or at-risk of failing, regardless of income level. Schoolwide programs use their funding to address the needs of all students regardless of income level or educational need.

### Research Questions

The test results of a cohort of economically disadvantaged students entering 4th grade at the two upper elementary schools were analyzed for the school years 1999-2001, to determine if any differences exist. These are the main research questions that provided a framework for this study:

1. Is there a difference in the academic achievement of economically disadvantaged students, as measured by a state criterion-referenced reading section of the TAAS test in grades 4-6 at the schoolwide Title I model in comparison to the targeted Title I model?



2. Is there a difference in the academic achievement of economically disadvantaged students in reading, as measured by a national norm-referenced test (ITBS and SAT-9) at the schoolwide Title I model in comparison to the targeted Title I model?

3. Is there a difference in the academic achievement of economically disadvantaged students, as measured by a state criterion-referenced math section of the TAAS test in grades 4-6 at the schoolwide Title I model in comparison to the targeted Title I model?

4. Is there a difference in the academic achievement of economically disadvantaged students in math, as measured by a national norm-referenced test (ITBS and SAT-9) at the schoolwide Title I model in comparison to the targeted Title I model?

#### Hypotheses Used for This Study

1. Economically disadvantaged students at the targeted assistance Title I model perform better on the criterion-referenced standardized test in the reading section of the Texas Assessment of Academic Skills (TAAS) for the school years 1999-2001, than the economically disadvantaged students at the schoolwide model.

2. Economically disadvantaged students at the targeted assistance Title I model perform better on the norm-referenced Iowa Test of Basic Skills (ITBS) and Stanford Achievement Test, Ninth Edition (SAT-9) tests in reading for the school years 1999-2001, than the economically disadvantaged students at the schoolwide model.

3. Economically disadvantaged students at the targeted assistance Title I model perform better on the criterion-referenced standardized test in the math section of the TAAS for the school years 1999-2001, than the economically disadvantaged students at the schoolwide model.

4. Economically disadvantaged students at the targeted assistance Title I model perform better on the norm-referenced ITBS and SAT-9 tests in math for the school years 1999-2001, than the economically disadvantaged students at the schoolwide model.

#### Null Hypotheses

1. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the criterion-referenced standardized test TAAS in reading for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

2. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the norm-referenced ITBS and SAT-9 tests in reading for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

3. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the criterion-referenced standardized test TAAS in math for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

4. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the norm-referenced ITBS and SAT-9 tests in math for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

#### Title I History Summarization

The original intent of the Title I Part A programs was to assist with the education of economically disadvantaged students. Funds were to be targeted to assist economically disadvantaged students. This focus soon shifted to helping with the education of students, which were identified as failing or at risk of failing by the early 1970s, they did not have to be economically disadvantaged. The introduction of the schoolwide model in 1978 opened up the possibility of helping all students in a school with 75% of students designated as economically

disadvantaged. Schoolwide models could serve all students attending the school, not just the ones failing or at risk of failing, and not only the economically disadvantaged students it was intended to help in the first place. The state was required to match funds for schoolwide models in 1978, so it was not widely embraced.

The Hawkins-Stafford Amendments in 1988, dropped the state matching fund requirement for schoolwide model adoption. In 1994, IASA lowered the required poverty rate to 50% for schoolwide models and continued not to require state matching. Because of the record-keeping requirements of Title I Targeted models, the schoolwide approach became very attractive. Schoolwide models skyrocketed 1200% from 1,629 in 1990 to 19,701 in 1998. NCLB lowered the required poverty level to 40%, because of this change, schoolwide Title I models are expected to continue to escalate. What is lost in an effort to help all students in a school with 40% poverty, is the emphasis on the needs of the economically disadvantaged students, which Title I programs were intended to assist.

It is critical that research is conducted to investigate the performance of economically disadvantaged students in schools receiving Title I funding. These students generate the funding for a particular school, but are not the only ones benefiting from the additional resources. The academic achievement of economically disadvantaged students cannot be overlooked.

### Organization of the Remaining Chapters of this Dissertation

Chapter 2 of this dissertation provides an overview of the broad and extensive perspective of pertinent literature available regarding the Title I Part A programs. In Chapter 3, the methodology for the study is presented, including the setting, participation, population description, and methodological tools that were utilized to obtain and analyze the data. These

tools were specifically selected to assure accuracy in describing the differences in population means using descriptive statistics and Analysis of Covariance (ANCOVA).

Chapter 4 describes the results of the ANCOVAs for reading and math for both the TAAS and the ITBS by school year. It also includes a description of the reading and math mean comparisons for the same three school years, 1999-2001. Chapter 5 takes a look back at this study and offers an interpretation and conclusion of the findings. It includes a list of recommendations that would enhance this study. It also includes suggestions that would shed further light on the subject of measuring academic student achievement of economically disadvantaged students, and some of the causes for their academic achievement.

## CHAPTER 2

### REVIEW OF THE LITERATURE

In the pages that follow, literature pertinent to the Title I program in the United States and the program's influence on academic achievement is given detailed treatment. The study examines the student achievement for economically disadvantaged students attending two different types of Title I school models. It also discusses the distribution mechanism from the federal government, to states, to districts and finally to schools, including the effect of state politics on this process. Title I schoolwide model and targeted assistance model are described in this chapter. Lastly, major empirical data on the effectiveness of Title I schools on improving student achievement is addressed.

#### Search Process

The following review was developed through a systematic word search of computerized reference databases and citations in related documents. Access to ERIC educational reports was made available through the University of North Texas' library. Some of the research available on the effectiveness of schoolwide and targeted assistance Title I programs was accessed through ERIC SilverPlatter, other reports had to be ordered through the ERIC Document Reproduction Service. In order for the research to be properly understood, a background on funding parameters was established. Data was obtained from the Texas Education Agency and the urban school district. Title I district reports were used, including U.S. Department of Education studies and the General Accounting Office reports.

## Title I Funding and Implications on Student Achievement

Title I sets out to fund programs that will help improve the impact that poverty has in the lives of children, while balancing the interests of the states. The number of school-age children in poverty within a state, school district, and school, determines the amount of funding to be allocated (Orland and Stullich, 1997). Title I funding was distributed from the federal government to state education agencies, who would then that pass it on to school districts until 1999. It is now sent directly to the school districts. The amount each school district receives is determined by a complex formula that incorporates the average per-pupil expenditure in the state, the number of students in poverty within its attendance boundaries, and previous allocations (General Accounting Office, 2000).

In 1994, the Improving America's Schools Act (IASA or P.L. 103-382) contained four different formulas for distributing funds, though only two were funded. The *basic grant* formula has been the primary avenue through which funding has been allocated since 1965; 90% of Title I funds were allocated through basic grants by 1996 (Orland and Stullich, 1997). In 2004, districts were eligible for basic grants if they had at least 10 economically disadvantaged children and the number of economically disadvantaged children is more than 2% of total enrollment. Approximately 92% of all school districts nationally receive basic grants. This is around 99% of economically disadvantaged children, which accounted for 85% of Title I funds distributed in fiscal year 1999 (Shaul, 2002).

In 1978, a *concentration grant* formula was added, but funded only for three years. In 1988 it was funded again and since then, has seen incremental increases over the years to account for approximately 10% of total Title I funds. In 1999, concentration grants were

allocated to the 60% of school districts that contained about 85% of economically disadvantaged children.

The *targeted grant* program was not funded until fiscal year 2003. This grant aims to direct more funding to high-poverty states and districts. The amount of the targeted grant increases as the number and percentage of economically disadvantaged children in the district increases both in dollar amounts and proportionally to other districts (Shaul, 2002).

An education finance *incentive program* was also added in 1994 but not funded until 2003. The basis of this allocation is the amount of effort that a particular state exercises to equalize funding for all school age children. The state must show what it is doing to provide higher levels of funding to improve instruction for all students in their state.

Title I funds have been allocated directly to school districts instead of to counties since 1999. This change occurred because of the concern that economically disadvantaged school districts in wealthy counties were not receiving the Title I funds that they needed. According to Orland and Stullich (1997), all schools with poverty rates of 75% or more must receive Title I funds. Schools with poverty levels of 35% also receive funds, but are placed in rank-order of need from highest to lowest. With this type of allocation mechanism, some economically disadvantaged students in low poverty schools do not benefit from the additional resources.

Districts are not required to allocate the same per-pupil amount to each school, but if they do not, they must allocate a higher amount to schools with higher concentration of economically disadvantaged children. Districts may also apply for and receive waivers for any Title I allocation rules.

As of 2001, NCLB held that if 40% or more of the students in an individual school are economically disadvantaged, the school could be designated as a *schoolwide* campus. The school

must have a plan to demonstrate how funds would be used to improve the overall quality of the school. All students in the schoolwide campus benefit from the Title I funding, regardless of family income or educational need. The number of such schoolwide programs increased 98 times from around 200 in 1988-89 to 19,701 in 1998-99, an exponential increase of 9800%.

Since 2001, schools with fewer than 40% of their students in poverty and those that do not choose to implement a schoolwide approach (since they can get a waiver for this) can select a targeted assistance model of instructional delivery. With this model, assistance is given to students who are identified as failing or at-risk of failing regardless of family poverty level. During the three years of this study, schools were required to have less than 50% of students designated as economically disadvantaged in order for them to select the targeted assistance model of instruction.

Local districts receiving Title I funds must comply with three requirements. First, districts cannot supplant funds, which are already allocated from local and state sources. The funding must be used to supplement the existing funded instructional program. Most districts use pullout programs in targeted assistance school to address this requirement. Orland and Stullich (1997) contend that students missing regular classroom instruction may be viewed as supplanting the normal services of the school, since they are missing normal classroom instruction. This is the biggest challenge for targeted assistance schools.

Secondly, districts are required to spend the same amount of funding for Title I schools as they do for non-Title I schools. Districts usually set funding formulas to allocate funds to schools based on the number students, size of school, age of facility, etc. They also allocate equal amounts of funding for teacher and staff development, materials, and equipment based on



student enrollment. By setting these guidelines, districts demonstrate their equal treatment of all schools (Orland and Stullich, 1997).

Thirdly, Title I funds cannot be used to reduce state and local funding. Districts can show this by ensuring that their local and state expenditures are above the 90% threshold in comparison to the prior year.

In 1994, IASA required that allocations be distributed based on biennial census data because of the drastic population shift from the 1980 to 1990 census. Title I allocations in 1993-94 were based on 1990 census data, which was very out dated. Southwest, northwest, and Rocky Mountain States had substantial increases of economically disadvantaged students, but did not receive additional funding due to the outdated census data used as the basis for the allocations (Riddle, 1995).

As of 1999, the Department of Education allocated Title I funds directly to school districts based on census poverty data and figures from 1997. Funding was based on the number of economically disadvantaged school-aged children ages 5-17 in a county or district (U. S. Department of Education, 1999). According to the Independent Review Panel on the Evaluation of Federal Legislation (1999), state and local funds make up approximately 90% of educational funding, which was the majority of education funds. Federal government funding comprises approximately 10% of the local district's budget.

#### Title I and State Politics

According to Shaul (2002), Title I allocations to states are not allocated fairly because of two provisions in the law. The first one is the hold-harmless provision, which guarantees each state and district a minimum level of funding based on past allocations. This provision was intended to protect states with declining number of economically disadvantaged children, but

without a substantial increase of funding, it leaves less funding for those states with growing numbers of economically disadvantaged children. The second provision is outdated poverty Census data. The U. S. Department of Education uses Census Bureau estimates of economically disadvantaged children to calculate Title I allocations. The data lags behind the actual movement of economically disadvantaged children between states and leaves the recipient state without sufficient Title I funding.

There is research that shows a substantial relationship between Title I participation and students' ethnic and racial backgrounds (Birman, Orland, and Jung, 1987). The percentage of African American students served by Title I in 1987 was 29%, which is much higher than their 15% of school age population. The percentage of Hispanic students served by Title I in 1987 was 22%, which was again much higher than their representative 8% of school age population. The percentage of White students that participated in Title I programs was 45%, which was much lower rate than their overall school-age population of 72% (Birman, et al., 1987). Evidence from the Prospects study (Puma, et. al., 1993) reinforces the 1987 results: across three grade cohorts. "...between 40 and 50% of Chapter I (Title I) participants were White, not of Hispanic origin. In contrast, about three-quarters of the non-participants are White, a difference of 50 to 80% higher" (p.152).

### Title I Instructional Delivery Models

A lot of debate focuses around the effectiveness of the different types of Title I delivery models, specifically schoolwide versus targeted assistance models. Since 1994, beginning with IASA and continuing with NCLB, the emphasis has moved from serving students who have been identified as failing or at-risk of failing, not necessarily only economically disadvantaged students to serving all students. The initial intent of Title I was to help economically

disadvantaged students, it then moved to targeting assistance to all students who were failing or at-risk of failing. With the introduction of the schoolwide programs, the focus in those schools is now helping the entire school, not just economically disadvantaged students or those identified as failing or at-risk of failing. Depending on the type of Title I model, whether schoolwide or targeted assistance, there are four basic means of assisting students:

1. Prevention and Intervention Programs that provide extended time or tutoring programs, including after-school programs
2. Family, School, and Community Partnerships, whose aim is to enlist parents to become more involved in children's education, as well as fostering community support to promote student achievement
3. School-wide Programs that allow high-poverty schools the discretion to use their funding to help all students regardless of economic level
4. Targeted Assistance Programs that use funding for assisting those students identified as failing or at-risk of failing regardless of economic level.

The focus of this study is the effectiveness of a schoolwide model versus a targeted model and its impact on the academic achievement of economically disadvantaged students as measured by standardized tests. The following is a brief description of each of the two educational approaches.

#### Targeted Assistance Model

Title I schools designated as targeted assistance models concentrate their allocation from the federal government on those students who were identified as failing or in danger of failing. The group of students served may include those who are not economically disadvantaged. Many schools still use the pullout model of instruction regardless of research that points out more

effective ways to provide instruction for disadvantaged students (Levine, 1991; Wang and Kovach, 1996).

The goal of targeted Title I schools is to effectively coordinate efforts with the regular education program in order to assist those in danger of failing, but at the same time not deprive those students of effective classroom instruction with the regular curriculum. In a targeted assistance school, only those students identified as failing or at-risk of failing, receive the additional assistance regardless of income level. This model also focuses on staff development for all staff, and increased parental involvement in the education of their children.

#### Schoolwide Model

The National School Boards Association (2000) notes that schoolwide programs began in 1978. The Hawkins-Stafford Elementary and Secondary School Amendments in 1988 specified a required poverty level of 75% for a school to qualify for the schoolwide designation. In 1994, the requirement was lowered to 50% for the 1996-97 school year (Wong and Meyer, 2001). NCLB, as the latest reauthorization of ESEA, further decreased the required percentage of students in poverty for a school to meet schoolwide qualifications to 40%.

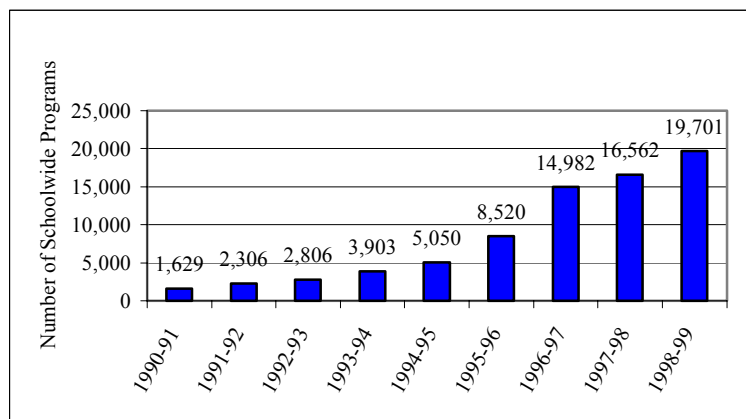


Figure 4. Change in Number of Title I Schoolwide Programs, 1991-1992 to 1998-1999

Source: U.S. Department of Education, Compensatory Education Programs, 2001

In 1993-94, the number of schools with schoolwide programs was 3903. By 1996-97, that number grew to approximately 15,000 (U. S. Department of Education, 1999). As of 1999, the number of schoolwide programs had reached 19,701. Approximately half of all Title I schools were eligible to choose the schoolwide option, as shown in figure 4. An estimated 82% of Title I schools eligible for the schoolwide option chose this approach. From 1990-91 to 1998-99, schoolwide programs increased by 1200%.

Fashola and Slavin (1998) found that Title I schools in the schoolwide category have great latitude in decision-making by “having the freedom, the resources, and in most cases the motivation to fundamentally change their practices by adopting or developing schoolwide strategies to meet the needs of all their students” (p.371). Schoolwide programs added an element of flexibility, which allowed Title I funding to be combined with other funding from local, state, and federal sources in an attempt to raise the academic performance of all students in a school.

According to a General Accounting Office study in 2000, “under the schoolwide approach, schools can provide Title I services to more students, some of whom would not be eligible under targeted assistance” (p.29). Table 1 shows the proportion of schools receiving Title I funds and the distribution of all schools. This same study found that many school district officials favored schoolwide programs because it fostered increased collaboration between regular and Title I teachers and flexibility to address the needs of the whole school.

Table 1

*Title I Funds by School Poverty Level, 1997-98*

School Poverty Level	Percentage of Sch. Receiving Title I Funds	Percentage Distribution of All Schools	Percentage Distribution of Title I Schools	Percentage Distribution of Title I Funds
75-100%	96%	16%	35%	46%
50-74%	80%	17%	31%	27%
35-49%	49%	13%	13%	9%
0-34%	28%	54%	21%	18%
All Schools	57%	100%	100%	100%

Source: U.S. Department of Education, Planning and Evaluation Service, Study of Education Resources and Federal Funding: Final Report (2000)

#### Title I Effectiveness: Mixed Findings

Etheridge (2001) conducted a study of 21 rural schools that implemented a systemic approach to Title I schoolwide model. He found that because of the flexibility of school planning and program implementation under the schoolwide approach, the opportunities of enhancing student achievement greatly increased.

Despite the popularity of Title I schoolwide programs, the General Accounting Office (2000) found that research efforts have provided limited information on the effectiveness of this approach. The study points out that “because of data and methodological limitations, neither the national evaluations nor smaller studies have been able to support any conclusions on whether schoolwide programs are effective” (p.47). It further notes that the research on the general

effectiveness of the schoolwide approach for improving student achievement in high-poverty schools is inconclusive.

In 1998, Wong and Meyer evaluated 13 research studies on the effectiveness of schoolwide Title I programs. They found that program effectiveness was “mixed and inconclusive” (p. 132). In another study, the U. S. Department of Education (1999) found that a substantial achievement gap remained between students in the highest and lowest poverty schools. As noted by Puma et al. (1997) in their final Prospects report:

Chapter 1 (Title I) assistance was, on average, insufficient to close the gap in academic achievement between advantaged and disadvantaged students. The observed lockstep pattern of student growth clearly demonstrated that where students started out relative to their classmates is where they ended up in later grades (p.9).

They contend that this was not to say that Chapter 1 was not helpful, but that it was not enough to bring students up to par. Their findings support the data that the individual student and family poverty account for the largest part of the variation in student achievement as measured by test scores, but that schools enhance and make an important contribution to their learning (Puma et. al., 1997).

#### Major Title I Effectiveness Studies

The Prospects Study (Puma, et al, 1993 and 1997) was conducted in response to the 1988 Hawkins-Stafford Amendments. The purpose of the study was to examine the effects of Chapter 1 (Title I) on student achievement. The Interim Report was released in 1993 and the Final Report in 1997. The Interim Report influenced subsequent change in Title I through the Improving

America's School Act (IASA) of 1994. In the Act, poverty requirements for schoolwide model dropped from 75% to 50%.

The Prospects Study collected student achievement data from a sample of approximately 400 schools during the schools years 1991-1994. The concentration was in grades 1, 3, and 7. The Interim Report released in 1993 found that Chapter 1 was not sufficient to close the gap in academic achievement between Chapter 1 students, and their more advantaged peers.

In the early 1990s when this study was conducted, only 3-5% of the students included in the study participated in a schoolwide program. Approximately 95-97% of the students included in this study attended targeted assistance model. Students designated as "served" by Chapter 1 included both economically disadvantaged and non-economically disadvantaged students, which had been identified as failing or at-risk of failing. The basis for the Interim Report was data collected during the 1991 and 1992 school years; the report found that there was a gap in achievement between the two groups. The Final Report published in 1997 continued to point out that Chapter 1 students were lagging behind non-Chapter 1 students in academic achievement. The summary conclusions stated:

- Students selected to receive Chapter 1 assistance had test scores, or were rated by their teachers, below their nonparticipating classmates
- Those students who received more Chapter 1 assistance (i.e., more years of service) had test scores, or were rated, below those who received less help
- Chapter 1 students did not, over time, close the performance gap between themselves and their more advantaged classmates (p.55)

According to this study, Chapter 1 students started below their counterparts and after receiving additional Chapter 1 services, they remained behind. The researchers point out that the



study was not designed to measure whether the Chapter 1 students benefited from Chapter 1 service.

Federal law requires each district receiving Title I funding to conduct a yearly evaluation of the effectiveness of their program. Nechworth, Cisneros, and Sanchez, (1990) conducted an evaluative study of Chapter 1, analyzing the effects of schoolwide models on achievement gain in reading and math scores for the 1989-1990 school years in the Houston Independent School District (HISD). Data were analyzed from 42 schoolwide models and 68 targeted assistance models. The 1989-90 school year was the first in which the schoolwide approach was implemented in HISD. Scores from students in 2nd through 5th grades were compared between selected schoolwide models and targeted assistance models and few significant differences were found. Where significant differences did exist, they were small.

Using a different assessment tool for Limited English Proficient (LEP) students, the study found no significant differences in reading scores between students in the two different types of Title I models, and only slight differences in math scores. Schoolwide models scored slightly higher than the targeted assistance models in math. This study found that non-LEP students performed better in schoolwide programs than in non-schoolwide programs (p.4).

Another study conducted by Davidoff and Pierson in 1991 analyzed data from 62 schoolwide models and 66 targeted assistance models in the Philadelphia School District for the school years of 1985-1991. This study found that a higher percentage of schoolwide models met state required measures of reading and math achievement than schools with traditional Title I targeted assistance models. The evidence favored the schoolwide model over targeted Title I model in six out of seven tested grades. This study looked at the overall performance of the

school, not just the particular students served in targeted assistance model versus all students at the schoolwide model.

A comparison of average achievement gains in reading and math for the period before and after implementation of schoolwide programs found significant differences. Approximately one fourth of schoolwide models had higher average gains in math scores and about half had higher reading scores after implementation. They also found that schoolwide models showed improvement in student attendance after becoming schoolwide models.

Wong and Sunderman conducted a study in 1996, which compared student achievement gains of students in schoolwide models and targeted assistance models in the Minneapolis Public Schools system and the Houston Independent School District. The study covered the school years from 1989-90 to 1992-93. Minneapolis Public Schools included 35 schools, four of them with schoolwide programs (K-3), and a total student population of 43,932. The Houston Independent School District had 198,013 students with 164 schools, 116 of those had schoolwide programs.

The California Achievement Test (CAT) scores in reading and math were used to measure improvement for the Minneapolis school district. The cohort consisted of students who started the first grade in 1990 and remained in the same school until 3rd grade in 1993. In Houston, the Texas Assessment of Academic Skills (TAAS) test scores in reading and math were collected for two years, 1993-1995, for students in the 3rd and 4th grades. The cohort included students who started the 3rd grade in 1993 and remained in the same school until 4th grade.

TAAS achievement test scores from Houston and CAT achievement test scores from Minneapolis were converted to normal curve equivalent (NCE) scores to compare academic growth in different types of schools. In analyzing the data collected from the Houston

Independent School District and the Minneapolis Public School District the following findings were noted:

- In general, students who were placed in different institutional settings - schoolwide, targeted assistance, and non Title I schools – showed similar, incremental gains in both reading and math
- Schoolwide projects in Minneapolis tended to reduce the learning gap between Title I and non-Title I students
- In Houston, there was a high degree of polarization between Title I and non-Title I student scores in all three types of schools - schoolwide, targeted assistance, and non Title I schools

An analysis of variance (ANOVA) of both sets of schools found no significant differences between mean gain scores for students attending different types of Title I models. The analysis of NCE gain scores for students in Minneapolis indicated positive and incremental growth in reading for all classification of students. This was attributed to the fact that Minneapolis had only four schoolwide Title I schools and provided support for adequate program implementation. The Houston Independent School District “showed little or no progress in reducing the performance gap between Title I and non-Title I students no matter which school students attended” (p. 68). The researchers attributed this to the accelerated expansion of schoolwide programs over a two-year period from 51 in 1991 to 124 in 1993. They concluded that, “increasing the number of schoolwide projects may not bring desired results if resources are diluted and spread more thinly” (p. 72).

Wong and Meyer (1998) reviewed major research studies dealing with the effectiveness of Title I schoolwide programs in improving student achievement. The review focused on the

characteristics of schools and districts implementing schoolwide programs, characteristics of the schoolwide model, and evidence of the effectiveness of schoolwide program schools. Thirteen evaluative studies were reviewed in the analysis, spanning the years 1985 to 1995. Analysis of student performance measures, in most cases, was longitudinal, comparing cohorts of students in schools with and without schoolwide programs. The poverty level of the students in these studies averaged 85%. An average of 70% economically disadvantaged students were served by the program.

Wong and Meyer point out that without sufficient reliable evaluation data, the explosion of schoolwide Title I schools took place after the 1988 Hawkins-Stafford Amendments and the additional lowering of the poverty rate to 50% in 1994 with IASA. They conclude that the research of the effectiveness of Title I schoolwide programs in terms of student performance had yielded mixed and inconclusive results.

Ethridge (2001) conducted a case study of a rural district in Berkeley County, South Carolina, which implemented a systemic approach to the Title I schoolwide model. The process used by the district included a comprehensive planning, budgeting, supervising, and compliance monitoring of the Title I schoolwide model. According to Ethridge, this process enhanced student achievement. The Berkeley County School District (BCSD) had 26,000 students and 34 schools. Twelve thousand of these students attended 21 Title I schoolwide model schools (11 elementary, 2 intermediate, 6 middle, and 2 high schools).

BCSD initiated schoolwide programs during the 1993-1994 school year with four elementary schools. Seven additional schools were added in 1994-1995. The additional 10 schools became schoolwide Title I schools in the 1995-1996 school year. Through the 1999-2000 school year, all Title I schools in BCSD either met or made substantial yearly progress toward

meeting state standards in all measured objectives. Ethridge concluded that flexibility for school planning and program implementation accompanied by school-based funding, and district support, facilitated increased opportunities for enhancing student achievement.

Of the six major research studies mentioned in the previously, three found little or no difference in student achievement gains of students served by Title I (Prospects Study, 1993 and 1997; Houston ISD, 1990; and Houston ISD - Minneapolis, 1996). Two of the studies found a positive correlation between Title I schoolwide programs and student achievement of students served by Title I (Davison and Pierson, 1991; Ethridge, 2001). One of the studies (Wong and Meyer, 1998) found that the results of thirteen studies yielded mixed and inconclusive results.

#### Literature Review Lessons

The General Accounting office (2000) recommended that the “U. S. Department of Education should implement additional measures to improve research on the effectiveness of specific services in both schoolwide and targeted assistance schools” (p. 12). It also pointed out that research on the effectiveness of the schoolwide model was “inconclusive” (p. 10). Many studies that focus on Title I programs usually compare the academic results of the whole school, not just the economically disadvantaged students that Title I intended to help at its inception (Etheridge, 2000; Fashola and Slavin, 1998; General Accounting Office, 2000; Orland and Stullich, 1997; Puma, et al., 1997; Rees, 1999; Wong and Meyer, 1998, 2001). It is the intent of this study to add to the body of knowledge regarding the effectiveness of both Title I schoolwide and targeted assistance models. This study focuses only on the academic achievement performance of economically disadvantaged students enrolled in each type of Title I school, as measured by a state criterion-referenced test and a national norm-referenced test in math and reading. Economically disadvantaged students were the intended beneficiaries of the federal

funding when ESEA was first signed into law in 1965. Wong and Meyer (1998) recommend that more research must be done on the effectiveness of Title I models. They also recommend that additional studies that look at the performance of one, two, or a small sample of Title I schools would be useful.

This study provides information to practitioners and policymakers on the academic achievement of economically disadvantaged students enrolled in two elementary schools with different Title I program approaches. One of the selected schools implements a schoolwide approach, while the other a targeted assistance model. Only the academic achievement of economically disadvantaged students at the two models was compared.

### Definitions

#### *Academic Achievement:*

Improved performance on norm-referenced and standardized tests as measured by yearly assessments in math and reading and compared to previous performance experience. The standardized tests used in the district during the three years of this study were the Texas Assessment of Academic Skills (TAAS), the Iowa Test of Basic Skills ITBS® (Houghton Mifflin Company Corporation, Boston, MA, [www.education.uiowa.edu](http://www.education.uiowa.edu)), and the Stanford Achievement Test SAT-9™ (Harcourt Brace Educational Measurement, San Antonio, TX, [www.hbem.com](http://www.hbem.com)).

#### *At Risk Students:*

Students that are subject to any combination of the following characteristics: living in high-growth states, living in unstable school districts, living in a low-income or single-parent family, are deficient in academic skills, have parents that lack a high school diplomas, English is their

second language, or have negative self-perception or self esteem (Northwest Regional Education Laboratory, 1997)

*Challenging Schools:*

Challenging Schools are those in which academic performance tends to be low and the obstacles to raising performance are the greatest, such as community poverty, lack of continuous school leadership, and high teacher turnover. (National Parent and Teachers Organization, 2002).

*Economically Disadvantaged Children:*

Determined by Census data or, when indicated, children eligible for free or reduced-price lunch. Ninety-six percent of all children classified as Title I formula-eligible would also be classified as eligible for Title I using Census poverty estimate.

*Parental Involvement:*

The participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities, including ensuring that parents play an integral role in assisting their child's learning. Parents are encouraged to be actively involved in their child's education at school, are included as full partners in their child's education, and participate in decision-making advisory committees to assist the education of their child (NCLB, 2001).

*Poverty:*

The extent to which an individual does without resources, whether financial, physical, emotional or mental resources or any combination thereof is used to determine whether a family is living in poverty. It also includes the lack of support systems, relationships or role models and knowledge of the "hidden rules" of middle class society.(Payne, 1998, Revised Edition).

*Professional Development:*

Activities that improve and increase teacher knowledge of academic subjects and instructional delivery and are an integral part of broad schoolwide and districtwide educational improvement plans. It gives teachers, principals, and administrators the knowledge and skills to provide students with the opportunity to meet challenging state academic content standards, improve classroom management skills, and classroom focus in order to have a positive and lasting impact on classroom instruction. (NCLB, 2004).

*Texas Learning Index (TLI):*

The Texas Learning Index (TLI) is used as the measurement standard for the TAAS. TLI is a score that is generated by the Texas Education Agency (TEA) that describes the overall performance on a test. It does not represent a percentage of items correct; it signifies whether or not the student met the passing standard for that school year. The index is adjusted by the level of difficulty of the questions on a test. A TLI of 70 or better indicates a passing score for that school year.



## CHAPTER 3

### METHODOLOGY

This study explores the difference in academic achievement of economically disadvantaged students in two Title I upper elementary schools in an urban school district in Texas. One of these schools was designated a schoolwide model and the other one was designated as a “targeted assistance” model for the 1998-1999, 1999-2000, and 2000-2001 school years. The methodology used for this study was a quantitative approach. This research measured the relationship of one independent variable; Title I models, at two levels 1) schoolwide model, and 2) targeted assistance model and two dependent variables (standardized test scores in reading and math) in two groups (economically disadvantaged and non-economically disadvantaged). The research design chosen for this study was causal-comparative.

#### Overview of the Methodology

The primary focus of this study was to compare the academic achievement of economically disadvantaged students enrolled in a Title I school with a schoolwide model to the economically disadvantaged students in a Title I school with a targeted assistance model. An analysis of the Title I applications of an urban school district in Texas from 1994 to 2003 found that there was only one school in this district that had three consecutive years in which it was designated a “targeted assistance” model. During this same period, nine other campuses were designated targeted assistance for one or two years at a time, but not for three consecutive years. Approximately 97% of schools in this urban school district were designated “schoolwide” Title I campuses during the same three school years.

The targeted assistance Title I school served students in grades four through six in the southeastern section of the district. A second 4th through 6th grade elementary school in the

same geographical area was found for comparison. This school was designated as a schoolwide Title I campus by the district. Students in 4th grade come from other district schools that serve pre-k through 3rd grade. The district had only 10 of their 152 elementary schools designated as targeted-assistance for the school years 1994 to 2003. Only the selected targeted school was designated targeted-assistance for three consecutive school years 1999-2001. Because of the small number of targeted assistance schools, randomization was not feasible.

The state criterion-referenced standardized test, Texas Assessment of Academic Skills (TAAS), was administered in grades 3-6. The norm-referenced national test, Iowa Test of Basic Skills, ITBS® (Houghton Mifflin Company Corporation, Boston, MA, [www.education.uiowa.edu](http://www.education.uiowa.edu)) was administered in 1998-2000; the Stanford Achievement Test SAT-9™ (Harcourt Brace Educational Measurement, San Antonio, TX, [www.hbem.com](http://www.hbem.com)) was administered in 2001 in grades kinder through 8th grade.

The district provided academic achievement data from 3rd through 6th grade for the students of two selected Title I schools. The student identification number was masked and reassigned to identify the students who attended the selected schools for all three school years. A cohort of students was created from each school containing those students who attended and tested during all three selected school years. Their performance on the 3rd grade standardized tests in 1997-98 was used as the pre-test or covariate. The pre-test was compared and measured as students moved from 4th through 6th grade at their respective schools.

### Phases of the Study

The study was conducted in three phases; the first phase was to seek approval to conduct this study from the advisory committee and the University of North Texas (UNT). Included in this phase was securing approval from the Institutional Review Board (IRB) at UNT to conduct

this study. The first phase included a thorough literature review on the history of Title I and effectiveness studies. The second phase of this study consisted of obtaining the standardized testing data from the school district of economically disadvantaged students and non-economically disadvantaged students for comparison purposes.

Phase three of this study consisted of a careful and detailed examination of the information collected from student achievement reports, statistical analysis of the data, summarization of the findings, and drawing conclusions. The Statistical Package for the Social Sciences (SPSS) software was utilized to calculate the frequency, mean, and standard deviation for each dependent variable. An analysis of covariance (ANCOVA) was performed on each variable to determine if significant differences existed between the two groups (targeted Title I model versus schoolwide Title I model). An additional ANCOVA was performed on the economically disadvantaged status in order to compare the academic achievement of this group between the two models. Homogeneity was established by ensuring the similarity of linear regression of the academic performance of economically disadvantaged students at the two selected Title I schools. All economically disadvantaged students were taken from each school's testing population for each of the two standardized tests (math and reading).

#### Research Setting

The ethnicity of students in the district in 1999-2000 was 61% Hispanic, 31% were African American, 6% were Anglo, 1% were Asian, and less than 1% were American Indian. There were nine 4-6 grade elementary schools in the district for the 1999-2001 school years. Two of them were selected for this study.

Leadership was stable at both Title I schools for the three years included in this study. The student population did not fluctuate much during the three years selected. A detailed description of the two schools follows on tables 2-5.

Table 2

*Targeted Assistance Title I School: Enrollment 1999-2001*

School Year	Total Enrollment	Grade 4	Grade 5	Grade 6	Economically Disadvantaged
1998-1999	507	169	182	156	240
1999-2000	504	162	178	164	252
2000-2001	497	156	152	189	242

Source: Texas Education Agency 2004

The student population was stable at the targeted assistance model. Student enrollment in 1999 was 507, 504 in 2000, and 497 in 2001 (see Table 2). The percentage of economically disadvantaged students ranged from 47% in 1999 to 50% in 2000 (see Table 4). It decreased slightly in 2001 to 48%.

Table 3

*Schoolwide Title I Model: Enrollment 1999-2001*

School Year	Total Enrollment	Grade 4	Grade 5	Grade 6	Economically Disadvantaged
1998-1999	532	189	183	160	505
1999-2000	515	177	166	172	486
2000-2001	504	180	167	157	475

Source: Texas Education Agency 2004

The student population was also stable at the schoolwide model. Student enrollment in 1999 was 532, 515 in 2000, and 504 in 2001 (see Table 3). The percentage of economically disadvantaged students was constant with approximately 94% of the student population identified as receiving free or reduced lunch (see Table 5).

Table 4

*Targeted Assistance Title I Model: Ethnic Distribution 1999-2001*

School Year	African American	Hispanic	White	Economically Disadvantaged	Limited English Proficient
1998-1999	34 (6.7%)	66 (13%)	407 (79.7%)	240 (47.3%)	16 (3.2%)
1999-2000	43 (8.5%)	86 (17.1%)	375 (74.4%)	252 (50.0%)	25 (5.0%)
2000-2001	55 (11.1%)	87 (17.5%)	354 (70.6%)	242 (48.5%)	21 (4.2%)

Source: Texas Education Agency 2004

The majority of students at the targeted assistance school were White. They ranged from 79.7% in 1999 to 70.6% in 2001. Hispanic students made up the second largest group at this school ranging from 13% in 1999 to 17.5% in 2001. African American students made up the third group of students ranging from 6.7% in 1999 to 11.1% in 2001. There was a small percentage of Limited English Proficient (LEP) students at this school ranging from 3-5%.

Table 5

*Schoolwide Title I Model: Ethnic Distribution 1999-2001*

School Year	African American	Hispanic	White	Economically Disadvantaged	Limited English Proficient
1998-1999	261 (49.2%)	264 (49.6%)	7 (1.3%)	505 (94.9%)	168 (31.6%)
1999-2000	271 (52.6%)	238 (46.2%)	6 (1.0%)	486 (94.4%)	141 (27.4%)
2000-2001	264 (52.4%)	234 (46.4%)	6 (1.2%)	475 (94.2%)	101 (20.0%)

Source: Texas Education Agency 2004

The majority of students at the schoolwide model were minority students. African American students made up 49.2% to 52.4% of the student population from 1999 to 2001. Hispanic students accounted for 46.4% to 49.6% of the student population during the same three school years. White students made up only 1% of the student population. There was a large percentage of LEP students at the schoolwide model ranging from 20% to 31.6% of the student population.

#### Data Collection and Analysis

Data for this study came from the Texas Education Agency from the Academic Excellence Indicator System Reports (AEIS). It included demographic information and overall academic campus results, including student performance by group. Student achievement data provided by the district were analyzed; this data included campus results and individual student performance. A detailed description follows in the next chapter. Only those students who entered 4th grade and stayed through 6th grade in these two schools were included in this study. Since the district does administer a state criterion-reference test and national norm-referenced test in

3rd grade, they were used as the baseline score for the selected students in order to measure improvement while enrolled during the three school years at the two Title I schools. Campus reports from the Texas Education Agency were used to verify the accuracy of the data received from the district.

Several statistical procedures were used to analyze the data and provide a holistic understanding of the sample schools. The aim was to determine whether significant relationships exist between the variables. The two student groups were compared by running descriptive statistics reports that included the frequency, percent, mean, and standard deviation. Frequency indicates the number involved in a particular measurement, while percent shows this number relative to the total involved. This procedure provides a more in-depth understanding of the two student samples since percentages can be misleading if the number of individuals included is not provided.

Comparing the means of both student groups in a particular subject is important because it is a measure of central tendency and is considered stable for the scores in a group. The standard deviation measures the extent to which the scores in a distribution deviated from the mean. Combined, mean and standard deviations provide a good description of how the individuals within the sample scored in a particular measure.

An analysis of covariance (ANCOVA) was performed on each student achievement data set for math and reading to determine if significant differences exist between the two groups of students. ANCOVA was used mainly to partially adjust for preexisting differences between the two cohorts. This method provides a degree of statistical control by adjusting the student post-test scores by subtracting their pretest score. This adjustment statistically places the students at the same starting point, which allows for a comparison based on progress made without taking

into consideration the exact starting point. This procedure was used for reading and math with TAAS and ITBS/SAT-9 test scores. Since there was only one Title I school designated as targeted assistance for three consecutive school years (1999-2001) in the district, randomization in the control of variables was not feasible. The statistical control provided by ANCOVA was the best alternative in this study. Data were not analyzed with repeated measures because although the analysis is over four years (1998 pretest, plus 1999-2001), they are not true repeated measures since the standardized tests vary in content, level of difficulty and errors of measurement.

The null hypotheses for this study indicate that there is no difference between the academic achievements of economically disadvantaged students in the schoolwide Title I model and a targeted assistance Title I model in reading and math. The .05 level of significance was used; most research studies use the .05 level of significance to test their hypothesis. It signifies that the decision to reject the null hypothesis was incorrect 5% of the time, or that the decision not to reject the hypothesis may be correct 95% of the time.

#### Delimitations of the Study

The scope of this study is narrow. It is limited to the examination of the academic achievement performance of economically disadvantaged students in two Title I upper elementary schools in an urban school district in Texas. It is the intention of this study to shed further light on the significance, if any, of the difference in academic achievement gains of economically disadvantaged students enrolled in a Title I elementary school that used its funding on a schoolwide model and a comparable school that used its funding on a targeted assistance approach. The intent of this study was not to explain the cause and effect of academic achievement results; rather to determine if economically disadvantaged students served in a Title



I schoolwide model show greater academic achievement than do economically disadvantaged students served in a targeted model.

The two selected schools do not offer a solution to the problems associated with the use of Title I funding to effect improved academic achievement. Every school that is examined for this purpose must be viewed in context and on an individual level. In order to understand the factors that make one Title I model more effective than another, it is recognized that many variables are at work concerning how a school operates within the context of a larger organization, which is the school district.

The lack of randomization of this study makes it difficult to generalize its findings to other Title I schools. This study uses a very small sample with the possibility that the results are impacted by chance. There are other confounding factors that could not be controlled or measured, such as the educational attainment of the parents, differences in educational emphasis in the home, differences in teacher effectiveness, teacher experience, teacher attrition, and leadership style.

The scope of this study did not concentrate on district compliance with Title I requirements in this particular urban school district in Texas. It only looked at the academic performance of two Title I schools and the performance of economically disadvantaged students enrolled for the three schools years of this study. This study did not attempt to link any Title I policy of the district to student achievement or the overall quality of the two selected schools. Despite the small sample size of this study (N=300, approximately 150 from each school), generalization of the findings could be made (Gall, Gall and, Borg, 2003) between the two campuses.

## Summary of Methodology

This study adds to the knowledge base of research on the performance of Title I schools. Most of the existing research on Title I looks at the overall school performance and not specifically at the academic performance of economically disadvantaged students. These students are usually in similar neighborhood surroundings, since the poverty level largely determines the overall composition of a neighborhood, which translates to the school population. The intent of this study is to compare the performance of economically disadvantaged students that attend two different types of Title I schools.

At the time of the three selected school years for this study, schools with 50% or more of their student population identified as economically disadvantaged could select the schoolwide approach. Schools with less than this requirement still qualified for funding as a targeted assistance model. Both of the selected upper elementary schools were in the same urban school district in Texas. Both schools were in the same geographical area with approximately the same number of students (500) that attended during the three years. The selected targeted assistance model had an economically disadvantaged student population of 47-50% for each of the three school years. The comparison schoolwide upper elementary school has a larger economically disadvantaged population of at least 94% each of the three years.

The purpose of this study was to determine if there was a difference in academic achievement of economically disadvantaged students attending the two different types of Title I models. The findings presented could help principals, teachers, and policymakers get a better understanding of the impact of Title I funding at two different type of Title I models and its effect on the academic achievement of economically disadvantaged students. Information of this nature is critical to maximize the impact of our attention and resources on the academic

improvement of economically disadvantaged students. Analysis of Covariance was used to measure student academic achievement during the three selected school years, without taking into consideration the fact that some students will have higher beginning scores than others. ANCOVA allows measurement of gains from a same starting point. Descriptive statistics, specifically group means allowed for accurate comparison of differences between two groups.

## CHAPTER 4

### PRESENTATION OF FINDINGS

The data analysis that follows is a description of the exact data used in this study; how it was coded, the basis for selection of student cohorts for each of the two schools, and the statistical techniques used to draw conclusions. There is a systematic analysis of the data based on specific parameters set for each method of analysis. Conclusions were based on the data meeting the assumptions for each method of analysis, adequate sample sizes, and the pre-determined statistical level of significance for testing the null hypotheses.

#### Collecting and Coding of Data

Title I applications to the federal government from 1994 to 2003 were reviewed at an urban school district in Texas. Records showed that ten schools were designated as targeted assistance over the ten selected years. The district was required to declare program delivery designations for each school either schoolwide or targeted assistance based on the poverty level of each school. The district uses the designation of “economically disadvantaged” based on the student qualifying for free or reduced lunch. There were nine schools whose designations were changed over the ten-year period because their poverty level was steadily at or near the 50% threshold. Schoolwide status could be declared if the poverty level at the school was 50% or higher for 1994-2001, and 40% for 2002-2003 and beyond. Of these ten schools, one had three consecutive years of targeted assistance model designation 1999-2001. This school served approximately 500 students in 4th through 6th grades. A second school was identified, which had been designated as a schoolwide Title I model for the same years, and that was in the same geographical area of the district.

The district had a Research and Evaluation department that handled data analysis for the district including program evaluations. It provided reports for personnel at all levels to make decisions about the overall effectiveness of instruction of particular programs. An official request to conduct this study was submitted to the district. After a district committee evaluated the study proposal and the possible benefits of this study to the district, permission was granted to conduct this study.

The data for this study were obtained from existing student records at the district level. The district provided a database for use with the Statistical Package for the Social Sciences (SPSS) program. The file contained all students that attended the two schools for the school years 1999-2001 (including the 1998 pretest year). This file already had labels included from the state for TAAS and the district for Iowa Test of Basic Skills ITBS® (Houghton Mifflin Company Corporation, Boston, MA, [www.education.uiowa.edu](http://www.education.uiowa.edu)) and the Stanford Achievement Test SAT-9™ (Harcourt Brace Educational Measurement, San Antonio, TX, [www.hbem.com](http://www.hbem.com)). Labels included, student identification numbers, which were masked to protect the individual students, test scores for each test, and participation in programs such as Chapter I (Title I). It also included further designation as “served” or “not served” by Title I.

The “economically disadvantaged” label included those students that were participating in the free or reduced lunch program or not participating. This category was compressed to two choices either they received free or reduced lunch, which was coded as a “yes” with a “1,” or not participating as a “no” with a “0.” The compression of this category was necessary in order to adequately compare the two economically disadvantaged groups from both schools.

A cohort of students was selected for each school. The parameters used for selections included two requirements. First, they must have attended the particular school for all three of

the school years 1999-2001, and attended the district in 1998 to use these scores as the pretest. Secondly, they must have tested and the test had to be scored for each of the three years. A cohort was created for the TAAS test with 155 students, for reading and math for all three years. The ITBS/SAT-9 had 135 students for reading and 131 students for math.

### Analysis of Covariance

This study used intact groups of students that could not be randomly assigned to treatment groups. The ANCOVA was selected to use in this study to adjust for preexisting differences in knowledge and performance on the TAAS and ITBS/SAT-9 in 3rd grade (1998), before the selected students attended each of the two schools. Wildt and Ahtola (1978) point out two benefits for using ANCOVA:

First, analysis of covariance provided a method to adjust for preexisting differences among the intact groups employed in the experiment. In this respect, analysis of covariance may remove bias attributable to the fact that the intact groups are not similar or matched, on certain important test unit characteristics.

Second, the use of analysis of covariance in these situations may result in the same benefit as in a completely randomized experiment, that is, increase the precision of the experiment by reducing the error variance (p. 14).

In order for ANCOVA to be used, two assumptions must be met. First, the relationship of both comparison groups must be linear. If this assumption is violated, the adjustments made in the ANCOVA will be biased, and the degree of the bias will depend on the degree of departure from linearity. Second, homogeneity of regression must be established. This means that the slope of the regression line of each comparison group must be parallel. This procedure is done by placing each group of cases in a separate scatter plot and establishing a regression line, which is

then compared by group. Both regression slopes must be similar in order to use ANCOVA. As stated by Hinkle (2003):

The assumption is often called homogeneity of regression or *parallelism* and is necessary in order to use the pooled within-groups regression coefficient ( $b_w$ ) for adjusting the sample means. Failure to meet this assumption implies that there is an interaction between the covariate and the treatment (p. 513).

Both ANCOVA assumptions were met in this study. The relationship between the two groups was determined to be linear. Homogeneity of regression was established and the independent variable and covariate was determined not to be correlated. The .05 level of significance was used as the criterion for either retaining or rejecting the hypotheses.

When using ANCOVA, the statistical significance of the results must be carefully analyzed. To further understand the portion of the variance that is attributed to a particular variable, eta-squared was used to determine the effect size of practical significance of the source. According to Hinkle, Wiersma, and Jurs (1998), the square of the eta coefficient ( $\eta^2$ ) is the portion of the variance in the dependent variable that can be attributed to the variance in the independent variable. Pedersen, (2002) assigned specific meaning to significance values of relative effect sizes. A large effect size would be above .138, a medium effect size would be between .059 and .138, and an effect size less than .059 would be considered trivial.

### Measurement Standards

The Texas Learning Index (TLI) was used as the measurement standard for the TAAS. TLI is a score that is generated by the Texas Education Agency (TEA) that describes the overall performance on a test. It does not represent a percentage of items correct; it signifies whether or not the student met the passing standard for that school year. The index is adjusted by the level

of difficulty of the questions on a test. A TLI of 70 or better indicates a passing score for that school year. It represents an equal amount of academic achievement at each grade level for each test administration. It is assigned with the grade level digit preceding the TLI. A TLI of 3-65 indicates that a third grade student did not meet the passing standard for that school year. A TLI of 4-65 indicates that a fourth grade student had a year of academic growth, but still did not pass the test. A TLI of 4-75 would indicate that the student passed the test and received more than a school year of academic growth that school year. The exit level (graduation) standard is approximately equivalent to the achievement level required to score 70 on the TLI at all grade levels.

The data received from the district already had the Normal Curve Equivalent (NCE) score for each student that took the ITBS or SAT-9. The ITBS was used in the district for the 1999 and 2000 school years and the SAT-9 was used in 2001. The tests are similar, in that both measure the amount of knowledge known in a particular subject and grade. The ITBS measures ability rather than specific curriculum knowledge. The NCE is used each year, to determine performance compared to all students who took that test nationwide. A NCE score of 40 indicates that the student is learning at grade-level. Scores above or below 40 are either below grade level or above it. According to Hinkle (2003):

The NCE scores range from 1 to 99 with a mean of 50 and a standard deviation of 21. A score of 1 corresponds to a percentile of 1, a score of 50 to the 50<sup>th</sup> percentile, and a score of 99 to the 99th percentile (p.91).

#### Research Questions Revisited

The focus of this dissertation was to determine if there was any difference in the academic achievement of economically disadvantaged students who attended two Title I schools



with different models. It would be helpful at this point, to restate the original research questions before describing the ANCOVA reports.

1. Is there a difference in the academic achievement of economically disadvantaged students, as measured by a state criterion-referenced reading section of the TAAS test in grades 4-6 at the schoolwide Title I model in comparison to the targeted Title I model?

2. Is there a difference in the academic achievement of economically disadvantaged students in reading, as measured by a national norm-referenced test (ITBS and SAT-9) at the schoolwide Title I model in comparison to the targeted Title I model?

3. Is there a difference in the academic achievement of economically disadvantaged students, as measured by a state criterion-referenced math section of the TAAS test in grades 4-6 at the schoolwide Title I model in comparison to the targeted Title I model?

4. Is there a difference in the academic achievement of economically disadvantaged students in math, as measured by a national norm-referenced test (ITBS and SAT-9) at the schoolwide Title I model in comparison to the targeted Title I model?

#### Hypotheses Used for This Study

1. Economically disadvantaged students at the targeted assistance Title I model perform better on the criterion-referenced standardized test in the reading section of the TAAS for the model years 1999-2001, than the economically disadvantaged students at the schoolwide model.

2. Economically disadvantaged students at the targeted assistance Title I model perform better on the norm-referenced Iowa Test of Basic Skills (ITBS) and Stanford Achievement Test (SAT-9) tests in reading for the school years 1999-2001, than the economically disadvantaged students at the schoolwide model.

3. Economically disadvantaged students at the targeted assistance Title I model perform better on the criterion-referenced standardized test in the math section of the TAAS for the school years 1999-2001, than the economically disadvantaged students at the schoolwide model.

4. Economically disadvantaged students at the targeted assistance Title I model perform better on the norm-referenced ITBS and SAT-9 tests in math for the school years 1999-2001, than the economically disadvantaged students at the schoolwide model.

#### Null Hypotheses

1. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the criterion-referenced standardized test TAAS in reading for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

2. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the norm-referenced ITBS and SAT-9 tests in reading for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

3. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the criterion-referenced standardized test TAAS in math for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

4. There is no difference in the academic achievement performance of economically disadvantaged students as measured by the norm-referenced ITBS and SAT-9 tests in math for the school years 1999-2001 at the schoolwide and targeted assistance Title I models.

The remainder of this chapter consists of a detail description of the analysis of covariance reports and descriptive statistics. The TAAS and ITBS/SAT-9 analysis was conducted by subject and school year. A summarization of all data follows at the end of this chapter.

## 2001 Reading and Math Data Analysis

As stated earlier in this study, about 95% of students in the schoolwide Title I model, and 47-50% in the targeted assistance model were *designated* as “economically disadvantaged.” The cohorts were selected based on student attendance and test participation at these two schools for all three years 1999-2001.

Economically disadvantaged students at the schoolwide model had a reading TLI mean of 74 for 2001 and the targeted assistance model a reading TLI mean of 80 (see Table 6). The non-economically disadvantaged students and the economically disadvantaged students at the schoolwide model had almost the same TLI mean of 74. There was a slight difference on TLI means of four points, between non-economically disadvantaged students (84), and the economically disadvantaged students (80) at the targeted assistance Title I model.

Table 6

*Descriptive Statistics, Dependent Variable: TAAS Reading TLI (04/01)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	74.90	10.87	10
	Yes	74.03	17.30	58
Targeted	No	84.50	18.27	60
	Yes	80.41	17.75	27
Totals	No	83.13	17.67	70
	Yes	76.06	17.59	85

The results of the ANCOVA for TAAS TLI reading scores in 2001 adjusted for preexisting differences in reading TLI in 1998, show a calculated value of  $F 44.38$ , which exceeded the  $F$  critical value  $(3, 151) = 2.65$  at  $p < .05$ . Participation in the different type of Title I model was not significant; the calculated value of  $F 3.84$  did not exceed the predetermined  $F$

value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 7). The 22.8% variance of TAAS reading achievement in Spring 2001 is explained by the students' previous reading performance in 1998. The 2.5% variance is explained by Title I model configuration, and 0% of the variation is attributed to economically disadvantaged status.

Table 7

*Analysis of Covariance for TAAS Reading TLI (04/01), using Reading TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate						
Reading TLI (04/98)	10502.33	1	10502.33	44.38*	.000	.228
Between Groups						
Title I Status (04/01)	907.58	1	907.58	3.84	.052	.025
Eco. Dis. Status	5.27	1	5.27	.02	.882	.000
Title I * Eco. Dis.	94.90	1	94.90	.40	.528	.003
Error	35498.02	150	(236.65)			
Total	1022984.00	155				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a reading NCE mean of 33 for 2001, while the economically disadvantaged students at the targeted assistance model had a reading NCE mean of 53 (see Table 8). There was a difference of 20 points in NCE achievement in reading in 2001 for economically disadvantaged students. The non-economically disadvantaged students at the schoolwide model had an NCE mean of 29, while the economically disadvantaged students had an NCE mean of 33. There was a slight difference of NCE means of

three points, between the non-economically disadvantaged students (56) and the economically disadvantaged students (53) at the targeted assistance Title I model.

Table 8

*Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Reading NCE (04/01)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	28.87	6.92	7
	Yes	33.44	17.71	42
Targeted	No	55.66	18.60	59
	Yes	53.38	19.88	27
Totals	No	52.82	19.55	66
	Yes	41.25	20.88	69

The results of the ANCOVA for ITBS/SAT-9 NCE reading scores in 2001 adjusted for preexisting differences in ITBS/SAT-9 NCE reading scores in 1998, show a calculated value of  $F$  64.46, which exceeded the  $F$  critical value  $(3, 131) = 2.68$  at  $p < .05$ . Participation at each type of Title I model was significant. The calculated value of  $F$  17.42 exceeded the predetermined  $F$  value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 9). The 34.5% variance of ITBS/SAT-9 reading achievement in Spring 2001 is explained by the students' previous reading performance in 1998. The 11.8% variance is explained by Title I model configuration, and .02% of the variation is attributed to economically disadvantaged status.

Table 9

*Analysis of Covariance for ITBS/SAT-9 Reading NCE (04/01), using ITBS/SAT-9 Reading NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate						
Reading NCE (04/98)	14997.46	1	14997.46	68.46*	.000	.345
Between Groups						
Title I Status (04/01)	3817.28	1	3817.28	17.42*	.000	.118
Eco. Dis. Status	56.07	1	56.07	.26	.614	.002
Title I * Eco. Dis.	29.73	1	29.73	.14	.713	.001
Error	28479.97	130	(219.08)			
Total	355993.42	135				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a math TLI mean of 77 for 2001 and at the targeted assistance model a math TLI mean of 84 (see Table 10). The non-economically disadvantaged students and the economically disadvantaged students at the schoolwide model had the same TLI mean of 77. There was a slight difference on TLI means of one point, between the non-economically disadvantaged students (83), and the economically disadvantaged students (84) at the targeted assistance Title I model.

Table 10

*Descriptive Statistics, Dependent Variable: TAAS Math TLI (04/01)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	77.80	9.80	10
	Yes	77.38	14.31	58
Targeted	No	83.40	11.65	60
	Yes	84.00	4.98	27
Totals	No	82.60	11.51	70
	Yes	79.48	12.50	85

The results of the ANCOVA for TAAS TLI math scores in 2001 adjusted for preexisting differences in TAAS TLI Math scores in 1998, show a calculated value of  $F 30.98$ , which exceeded the  $F$  critical value  $(3, 151) = 2.65$  at  $p < .05$ . Participation at each Title I model was significant; the calculated value of  $F 4.35$  exceeded the predetermined critical value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 11). The 17.1% variance of TAAS TLI math achievement in Spring 2001 is explained by the students' previous math performance in 1998. The 2.8% variance is explained by Title I model configuration, and .01% of the variation is attributed to economically disadvantaged status.

Table 11

*Analysis of Covariance for TAAS Math TLI (04/01), using Math TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate Math TLI (04/98)	3625.87	1	3625.87	30.98*	.000	.171
Between Groups Title I Status (04/01)	508.71	1	508.71	4.35*	.039	.028
Eco. Dis. Status	17.29	1	17.29	.15	.701	.001
Title I * Eco. Dis.	48.60	1	48.60	.42	.520	.003
Error	17555.78	150	(117.04)			
<b>Total</b>	<b>1036834.00</b>	<b>155</b>				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a math NCE mean of 51 for 2001, and at the targeted assistance model a NCE mean of 62 (see Table 12). There was a difference of 11 points in NCE achievement in math in 2001 for economically disadvantaged students. The non-economically disadvantaged students and the economically disadvantaged students at the schoolwide model both had a NCE mean of 51. This was a slight difference of NCE means of one point, between the non-economically disadvantaged students (63), and the economically disadvantaged students (62) at the targeted assistance Title I model.



Table 12

*Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Math NCE (04/01)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	50.83	9.91	8
	Yes	50.88	17.30	43
Targeted	No	63.31	16.76	58
	Yes	62.14	15.86	27
Totals	No	61.80	16.55	66
	Yes	55.23	17.53	69

The results of the ANCOVA for ITBS/SAT-9 NCE math scores in 2001 adjusted for preexisting differences in ITBS/SAT-9 NCE math scores in 1998, show a calculated value of  $F$  53.46, which exceeded the  $F$  critical value  $(3, 132) = 2.68$  at  $p < .05$ . Participation in the different type of Title I model was not significant at the predetermined critical value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 13). The 29% variance of ITBS/SAT-9 math achievement in Spring 2001 is explained by the students' previous math performance in 1998. The 2.6% variance is explained by Title I model configuration, and .0% of the variation is attributed to economically disadvantaged status.

Table 13

*Analysis of Covariance for ITBS/SAT-9 Math NCE (04/01), using ITBS/SAT-9 Math NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate Math NCE (04/98)	10376.51	1	10376.51	53.46*	.000	.290
Between Groups Title I Status (04/01)	682.26	1	682.26	3.52	.063	.026
Eco. Dis. Status	4.52	1	4.52	.02	.879	.000
Title I * Eco. Dis.	120.14	1	120.14	.62	.433	.005
Error	25427.91	131	(194.11)			
<b>Total</b>	<b>504566.34</b>	<b>136</b>				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

### 2001 Summary of Results

After controlling for the students previous performance or pretest, there was a significant difference by treatment, which was the type of Title I model being implemented. Economically disadvantaged students who attended the targeted assistance model performed better than the economically disadvantaged students at the schoolwide model on the TAAS in reading and math. Results were mixed on the ITBS/SAT-9 with targeted students performing better in reading but not in math. Descriptive statistics show that the TAAS TLI mean for economically disadvantaged students was higher by six points at the targeted assistance Title I model and seven points in math. Descriptive statistics also showed a higher ITBS/SAT-9 NCE mean of 20

points at the targeted assistance model in reading and 11 points in math. The ANCOVA reports showed that the covariate was significant at the .05 level for both TAAS and ITBS/SAT-9 reading and math tests. The type of Title I model was significant on the TAAS for both reading and math. The type of Title I model was significant only in reading on the ITBS/SAT-9, but not in math.

### 2000 Reading and Math Data Analysis

Economically disadvantaged students at the schoolwide model had a reading TLI mean of 79 for 2001, and at the targeted assistance model a TLI mean of 75 (see Table 14). The non-economically disadvantaged students and the economically disadvantaged students at the schoolwide model had almost the same TLI mean of 77 and 79. There was a larger difference on TLI means of ten points, between the non-economically disadvantaged students (85), and the economically disadvantaged students (75) at the targeted assistance Title I model.

Table 14

*Descriptive Statistics, Dependent Variable: TAAS Reading TLI (04/00)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	77.10	28.57	10
	Yes	78.59	17.98	58
Targeted	No	85.27	14.27	60
	Yes	75.44	23.54	27
Totals	No	84.10	17.00	70
	Yes	77.59	19.82	85

The results of the ANCOVA for TAAS reading scores in 2000 adjusted for preexisting differences in reading TLI in 1998 show a calculated value of  $F 64.87$ , which exceeded the  $F$  critical value  $(3, 151) = 2.65$  at  $p < .05$ . Participation in each type of Title I model was not significant and neither was economically disadvantaged status was not significant (see Table 15).

The 30.2% variance of TAAS reading achievement in Spring 2000 is explained by the students' previous reading performance in 1998. The 0% variance is explained by Title I model configuration, and 0% of the variation is attributed to economically disadvantaged status.

Table 15

*Analysis of Covariance for TAAS Reading TLI (04/00), using Reading TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate						
Reading TLI (04/98)	15754.68	1	15754.68	64.87*	.000	.302
Between Groups						
Title I Status (04/01)	3.43	1	3.43	.01	.906	.000
Eco. Dis. Status	6.82	1	6.82	.03	.867	.000
Title I * Eco. Dis.	883.25	1	883.25	3.64	.058	.024
Error	36432.69	150	(242.89)			
Total	1059732.00	155				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

The NCE mean for students at the schoolwide model was 46 compared to a mean of 51 for students at the targeted assistance model for the year 2000, yielding a five-point difference (see Table 16). Non-economically disadvantaged students scored an NCE mean of 50 at the schoolwide model and 56 at the targeted assistance model. There was a difference of five points in NCE mean reading score between students who were economically disadvantaged and those who were not.

Table 16

*Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Reading NCE (04/00)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	49.50	5.66	7
	Yes	46.39	14.32	38
Targeted	No	56.18	13.13	55
	Yes	50.83	16.42	24
Totals	No	55.33	12.60	63
	Yes	48.11	15.19	62

The results of the ANCOVA for ITBS/SAT-9 NCE reading scores in 2000 adjusted for preexisting differences in ITBS/SAT-9 NCE reading scores in 1998, show a calculated value of  $F 50.94$ , which exceeded the  $F$  critical value  $(3, 121) = 2.65$  at  $p < .05$ . Participation in the different type of Title I model was not significant. Economically disadvantaged status was not significant (see Table 17). The 29.8% variance of ITBS/SAT-9 reading achievement in Spring 2000 is explained by the students' previous reading performance in 1998. The .01% variance is explained by Title I model configuration, and 2% of the variation is attributed to economically disadvantaged status.

Table 17

*Analysis of Covariance for ITBS/SAT-9 Reading NCE (04/00), using ITBS/SAT-9 Reading NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate						
Reading NCE (04/98)	6948.72	1	6948.72	50.94*	.000	.298
Between Groups						
Title I Status (04/01)	19.49	1	19.49	.14	.706	.001
Eco. Dis. Status	260.57	1	260.57	1.91	.169	.016
Title I * Eco. Dis.	74.35	1	74.35	.55	.462	.005
Error	16367.88	120	(136.40)			
Total	360331.00	125				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a reading TLI mean of 79 for 2001 compared to the targeted assistance model TLI mean of 81 (see Table 18). The non-economically disadvantaged students at the schoolwide model had a TLI mean of 79 and the economically disadvantaged students a TLI mean of 84, a difference of five points. There was a slight difference on TLI means of two points, between the non-economically disadvantaged students (83), and the economically disadvantaged students (81) at the targeted assistance Title I model.

Table 18

*Descriptive Statistics, Dependent Variable: TAAS Math TLI (04/00)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	84.00	8.54	10
	Yes	78.53	18.45	58
Targeted	No	83.35	8.74	60
	Yes	81.11	9.35	27
Totals	No	83.44	8.65	70
	Yes	79.35	16.11	85

The results of the ANCOVA for TAAS TLI math scores in 2000 adjusted for preexisting differences in TAAS TLI Math scores in 1998, show a calculated value of  $F 26.33$ , which exceeded the  $F$  critical value  $(3, 151) = 2.65$  at  $p < .05$ . Participation in the different type of Title I model was not significant, at the predetermined critical value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 19). The 14.9% variance of TAAS TLI math achievement in Spring 2000 is explained by the students' previous math performance in 1998. The 0% variance is explained by Title I model configuration, and .09% of the variation is attributed to economically disadvantaged status.

Table 19

*Analysis of Covariance for TAAS Math TLI (04/00), using Math TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate Math TLI (04/98)	4007.96	1	4007.96	26.33*	.000	.149
Between Groups Title I Status (04/01)	6.42	1	6.42	.04	.838	.000
Eco. Dis. Status	215.56	1	215.56	1.42	.236	.009
Title I * Eco. Dis.	156.83	1	156.83	1.03	.312	.007
Error	22834.79	150	(152.23)			
Total	1049594.00	155				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a math NCE mean of 54 for 2000, and at the targeted assistance model an NCE mean of 54 (see Table 20). There was no difference in NCE achievement in math in 2000 for economically disadvantaged students between the two Title I models. The non-economically disadvantaged students at the schoolwide model had an NCE mean of 55 and the economically disadvantaged students an NCE mean of 54. There was a slight difference of NCE means of four points, between the non-economically disadvantaged students (58), and the economically disadvantaged students (54) at the targeted assistance Title I model.



Table 20

*Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Math NCE (04/00)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	55.13	10.80	8
	Yes	53.55	16.19	42
Targeted	No	57.91	16.34	55
	Yes	53.88	15.26	26
Totals	No	57.56	15.70	63
	Yes	53.68	15.73	68

The results of the ANCOVA for ITBS/SAT-9 NCE math scores in 2000 adjusted for preexisting differences in ITBS/SAT-9 NCE Math scores in 1998, show a calculated value of  $F$  43.64, which exceeded the  $F$  critical value  $(3, 127) = 2.65$  at  $p < .05$ . Participation in the different type of Title I model was not significant. Economically disadvantaged status was not significant (see Table 21). The 25.7% variance of ITBS/SAT-9 math achievement in Spring 2000 is explained by the students' previous math performance in 1998. The 1.2% variance is explained by Title I model configuration, and .03% of the variation is attributed to economically disadvantaged status.

Table 21

*Analysis of Covariance for ITBS/SAT-9 Math NCE (04/00), using ITBS/SAT-9 Math NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate Math NCE (04/98)	8179.17	1	8179.17	43.64*	.000	.257
Between Groups Title I Status (04/01)	290.40	1	290.40	1.55	.216	.012
Eco. Dis. Status	64.00	1	64.00	.34	.560	.003
Title I * Eco. Dis.	68.75	1	68.75	.37	.546	.003
Error	23617.31	126	(187.44)			
Total	436468.00	131				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

### 2000 Summary of Results

After controlling for the students previous performance or pretest, there was no significant difference by treatment, which was the type of Title I model being implemented. Economically disadvantaged students who attended the targeted assistance model did not perform better than the economically disadvantaged students at the schoolwide model on a consistent basis. Descriptive statistics show that the TAAS TLI mean for economically disadvantaged students was higher by four points at the schoolwide Title I model in reading and lower by two points in math. Descriptive statistics also showed a higher ITBS/SAT-9 NCE mean of five points at the targeted assistance model in reading and even in math. The ANCOVA

reports showed that the covariate was significant at the .05 level for both TAAS and ITBS/SAT-9 reading and math tests. The type of Title I model was not significant in math or reading for the ITBS/SAT-9 and TAAS.

#### 1999 Reading and Math Data Analysis

Economically disadvantaged students at the schoolwide model had a reading TLI mean of 61 for 1999 compared to the targeted assistance model TLI mean of 79 (see Table 22). There was a difference of 18 points in reading TLI means between the two groups of economically disadvantaged students. The non-economically disadvantaged students at the schoolwide model and the economically disadvantaged students had a difference of TLI means of five points 66 and 61. There was also a slight difference on TLI means of five points, between the non-economically disadvantaged students (83), and the economically disadvantaged students (79) at the targeted assistance Title I model.

Table 22

*Descriptive Statistics, Dependent Variable: TAAS Reading TLI (04/99)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	66.20	16.06	10
	Yes	61.09	22.88	58
Targeted	No	83.47	19.45	60
	Yes	79.26	17.67	27
Totals	No	81.00	19.86	70
	Yes	66.86	22.90	85

The results of the ANCOVA for TAAS reading scores in 1999 adjusted for preexisting differences in reading TLI in 1998, show a calculated value of  $F 115.07$ , which exceeded the  $F$  critical value  $(3, 151) = 2.65$  at  $p < .05$ . Participation in the different type of Title I model was significant; the calculated value of  $F 21.92$  exceeded the predetermined critical value at  $p < .05$ .

Economically disadvantaged status was not significant (see Table 23). The 43.4% variance of TAAS reading achievement in Spring 1999 is explained by the students' previous reading performance in 1998. The 12.7% variance is explained by Title I model configuration, and 0% of the variation is attributed to economically disadvantaged status.

Table 23.

Analysis of Covariance for TAAS Reading TLI (04/99), using Reading TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status

Source of Variation	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.	Eta Squared
Covariate						
Reading TLI (04/98)	27183.79	1	27183.79	115.07*	.000	.434
Between Groups						
Title I Status (04/01)	5176.97	1	5176.97	21.92*	.000	.127
Eco. Dis. Status	.22	1	.22	.00	.976	.000
Title I * Eco. Dis.	.86	1	.86	.00	.952	.000
Error	35434.50	150	(236.23)			
Total	910487.00	155				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a reading NCE mean of 30 for 1999, and at the targeted assistance model an NCE of 46 (see Table 24). There was a difference of 16 points in NCE achievement in reading in 1999 for economically disadvantaged students. The non-economically disadvantaged students at the schoolwide model had an NCE mean of 29 and the economically disadvantaged students an NCE mean of 30. There was a slight

difference of NCE means of four points, between the non-economically disadvantaged students (50), and the economically disadvantaged students (46) at the targeted assistance Title I model.

Table 24

*Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Reading NCE (04/99)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	29.19	8.07	8
	Yes	30.33	12.96	43
Targeted	No	50.25	13.81	57
	Yes	46.17	16.90	27
Totals	No	47.65	14.92	65
	Yes	36.44	16.43	70

The results of the ANCOVA for ITBS/SAT-9 NCE reading scores in 1999 adjusted for preexisting differences in ITBS/SAT-9 NCE reading scores in 1998, show a calculated value of  $F$  62.59, which exceeded the  $F$  critical value  $(3, 131) = 2.68$  at  $p < .05$ . Participation in the different type of Title I model was significant; the calculated value of  $F$  19.84 exceeded the predetermined critical value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 25). The 32.5% variance of ITBS/SAT-9 reading achievement in spring 1999 is explained by the students' previous reading performance in 1998. The 13.2% variance is explained by Title I model configuration, and 0% of the variation is attributed to economically disadvantaged status.

Table 25

*Analysis of Covariance for ITBS/SAT-9 Reading NCE (04/99), using ITBS/SAT-9 Reading NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate						
Reading NCE (04/98)	8325.43	1	8325.43	62.59*	.000	.325
Between Groups						
Title I Status (04/01)	2836.77	1	2638.77	19.84*	.000	.132
Eco. Dis. Status	4.70	1	4.70	.04	.851	.000
Title I * Eco. Dis.	8.38	1	8.38	.06	.802	.000
Error	17291.89	130	(133.02)			
Total	273445.55	135				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a math TLI mean of 60 for 1999, and at the targeted assistance model a TLI mean of 78 (see Table 26). There was a difference of 18 points in TLI means between the two groups of economically disadvantaged students. The non-economically disadvantaged students at the schoolwide model had a TLI mean of 72 and the economically disadvantaged students a TLI mean of 60. There was a slight difference on TLI means of two points, between the non-economically disadvantaged students (78), and the economically disadvantaged students (78) at the targeted assistance Title I model.

Table 26

*Descriptive Statistics, Dependent Variable: TAAS Math TLI (04/99)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	72.10	10.96	10
	Yes	60.83	23.79	58
Targeted	No	76.88	16.22	60
	Yes	78.30	7.81	27
Totals	No	76.20	15.61	70
	Yes	66.38	21.68	85

The results of the ANCOVA for TAAS TLI math scores in 1999 adjusted for preexisting differences in TAAS TLI Math scores in 1998, show a calculated value of  $F 95.61$ , which exceeded the  $F$  critical value  $(3, 151) = 2.65$  at  $p < .05$ . Participation in the different type of Title I model was significant, the calculated value of  $F 6.89$  exceeded the predetermined critical value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 27). 39.8% of the variance of TAAS TLI math achievement in Spring 1999 is explained by the students' previous math performance in 1998. The 4.4% variance is explained by Title I model configuration, and .07% of the variation is attributed to economically disadvantaged status.

Table 27

*Analysis of Covariance for TAAS Math TLI (04/99), using Math TLI (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate						
Math TLI (04/98)	19640.60	1	19640.60	95.61*	.000	.389
Between Groups						
Title I Status (04/01)	1415.08	1	1415.08	6.89*	.010	.044
Eco. Dis. Status	228.94	1	228.94	1.11	.293	.007
Title I * Eco. Dis.	1688.45	1	1688.45	8.22*	.005	.052
Error	30814.39	150	(205.43)			
Total	837220.00	155				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

Economically disadvantaged students at the schoolwide model had a math NCE mean of 41 for 1999, compared to the targeted assistance model NCE mean of 56 (see Table 28). There was a difference of 15 points in NCE mean achievement in math in 1999 for economically disadvantaged students. The non-economically disadvantaged students at the schoolwide model had an NCE mean of 42 and the economically disadvantaged students an NCE mean of 41. There was a slight difference of NCE means of three points, between the non-economically disadvantaged students (60), and the economically disadvantaged students (56) at the targeted assistance Title I model.



Table 28

*Descriptive Statistics, Dependent Variable: ITBS/SAT-9 Math NCE (04/99)*

Title I Model	Eco. Dis.	Mean	Std. Dev.	<i>n</i>
Schoolwide	No	41.59	13.46	8
	Yes	40.78	19.86	43
Targeted	No	59.52	14.14	56
	Yes	55.54	13.19	27
Totals	No	57.28	15.18	64
	Yes	46.47	18.92	70

The results of the ANCOVA for ITBS/SAT-9 NCE math scores in 1999 adjusted for preexisting differences in ITBS/SAT-9 NCE math scores in 1998, show a calculated value of  $F$  51.29, which exceeded the  $F$  critical value (3, 130) = 2.68 at  $p < .05$ . Participation in the different type of Title I model was significant; the calculated value of  $F$  11.59 exceeded the predetermined critical value at  $p < .05$ . Economically disadvantaged status was not significant (see Table 29). The 32.5% variance of ITBS/SAT-9 math achievement in Spring 1999 is explained by the students' previous math performance in 1998. The 8.2% variance is explained by Title I model configuration, and .02% of the variation is attributed to economically disadvantaged status.

Table 29

*Analysis of Covariance for ITBS/SAT-9 Math NCE (04/99), using ITBS/SAT-9 Math NCE (04/98) as covariate, fixed variables: Title I model and Economically Disadvantaged status*

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Covariate						
Math NCE (04/98)	9489.44	1	9489.46	51.29*	.000	.284
Between Groups						
Title I Status (04/01)	2144.62	1	2144.62	11.59*	.001	.082
Eco. Dis. Status	41.14	1	41.14	.22	.638	.002
Title I * Eco. Dis.	36.25	1	36.25	.20	.659	.002
Error	23867.80	129	(185.02)			
Total	400376.27	134				

Note. Values enclosed in parentheses represent mean square errors. \*  $p < .05$

### 1999 Summary of Results

After controlling for the students previous performance or pretest, there was a significant difference by treatment, which was the type of Title I model being implemented. Economically disadvantaged students who attended the targeted assistance model performed better than the economically disadvantaged students at the schoolwide model. The performance was consistent for both reading and math. Descriptive statistics show that the TAAS TLI mean for economically disadvantaged students was higher by 18 points at the targeted assistance Title I model in reading and 17 points in math. Descriptive statistics also showed a higher ITBS/SAT-9 NCE mean of 16 points in reading at the targeted assistance model and 15 points in math. The

ANCOVA reports showed that the covariate was significant at the .05 level for both TAAS and ITBS/SAT-9 reading and math tests. The type of Title I model was significant in math and reading for the ITBS/SAT-9 and the TAAS.

#### Summary of Findings 1999-2001

The data show that after controlling for pretest and economic status, the impact of Title I model implementation had a significant but small effect in reading and math on the TAAS in 1999 and 2001. There was no significant difference in Title I model implementation in reading and math achievement on TAAS in 2000. The data also showed that after controlling for pretest and economic status, the impact of Title I model had a more mixed effect on the ITBS/SAT-9 results. After controlling for pretest and economic status, the type of Title I model had a significant but small effect in the reading achievement in 1999 and 2001, but not in 2000. It also had an effect in math in 1999, but not in 2000 or 2001.

TAAS TLI mean comparison of economically disadvantaged students (Figure 5) shows a higher reading TLI for students in the targeted model than the schoolwide model in 1999 and 2001. Economically disadvantaged students performed better in reading on TAAS at the schoolwide model in 2000. Figure 6 shows the ITBS/SAT-9 NCE mean comparison for reading. Economically disadvantaged students at the targeted model performed higher than at the schoolwide model all three years 1999-2001.

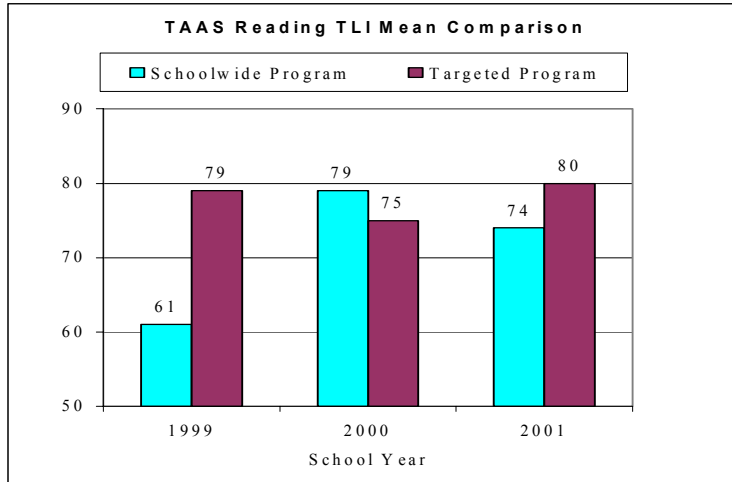


Figure 5. TAAS Reading TLI Mean Comparison of Economically Disadvantaged Students by Title I Model, Schoolwide versus Targeted

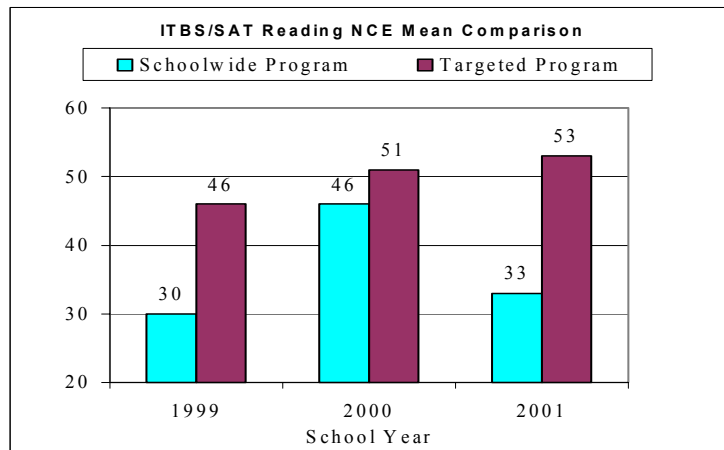


Figure 6. ITBS/SAT-9 Reading NCE Mean Comparison of Economically Disadvantaged Students by Title I Model, Schoolwide versus Targeted

TAAS TLI comparison of economically disadvantaged students (Figure 7) shows a higher math TLI for students in the targeted model than the schoolwide model all three years 1999-2001. Figure 8 shows the ITBS/SAT-9 NCE mean comparison for math, which shows that economically disadvantaged students at the targeted model performed better in 1999 and 2001, and were even in 2000.

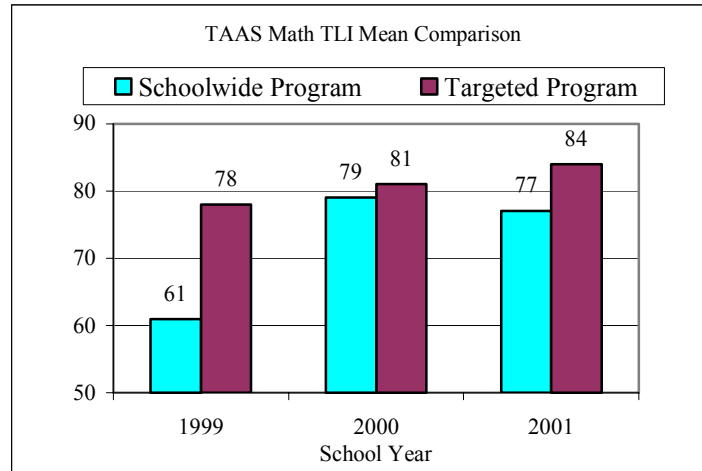


Figure 7. TAAS TLI Comparison of Economically Disadvantaged Students by Title I Model, Schoolwide versus Targeted

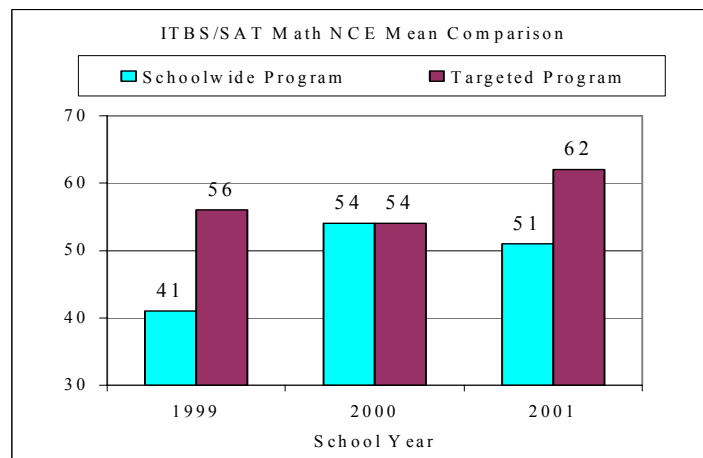


Figure 8. ITBS/SAT-9 Math NCE Mean Comparison of Economically Disadvantaged Students by Title I Model Schoolwide versus Targeted

As evidenced by the descriptive statistics, and supported by the ANCOVA reports, the data show that all students at the targeted assistance Title I model performed better academically than all students at the schoolwide model in 1999 and 2001. Economically disadvantaged students at the targeted model performed as well as the non-economically disadvantaged students. They also performed better than their counterparts at the schoolwide Title I model.

Kennedy, Birman, and Demaline (1986) propose that the achievement scores of all students not just economically disadvantaged students, declines as the proportion of economically disadvantaged students increases. According to Puma, Jones, Rock and Fernandez (1993), school-level poverty can be an even more important factor in predicting school achievement than a student's individual economic status.

The results of this study suggest that the performance of economically disadvantaged students at the targeted model, which had only about 47-50% poverty, was higher than those of their counterparts at the schoolwide model. Economically disadvantaged students performed approximately as well as the non-economically disadvantaged students at the targeted model, which implies that they were not left behind. This supports Puma et al. (1993) contention that the relative poverty of a school can be important in determining the overall academic achievement of students who attend it. No conclusion can be made about the about the performance of non-economically disadvantaged students in comparison to the disadvantaged students at the schoolwide model due to their small number present at the schoolwide model.

The performance of economically disadvantaged students at the targeted model was consistent all three school years 1999-2001 in reading and math in both TAAS and ITBS/SAT-9. There was no drop or jump in achievement for economically disadvantaged students at the targeted model. On the other hand, economically disadvantaged students at the schoolwide model performed lower in 1999 and 2001 in both TAAS and ITBS/SAT-9, but higher in 2000. They came closer or slightly surpassed the academic achievement of the economically disadvantaged students at the targeted model in 2000. Their academic achievement was less consistent across the three school years.

## CHAPTER 5

### DISCUSSION OF FINDINGS AND RECOMMENDATIONS

This chapter consists of a discussion of the results of this study. It highlights the findings of the study with a brief summary of the data analysis supporting the acceptance or rejection of predetermined hypotheses. It also includes the interpretations of findings, as well as a discussion of the possible implications based on the strengths and limitations of this study. Each of the research questions is carefully considered with close attention paid to data that address the research questions. The chapter closes with recommendations for further research in this area.

One of the issues that must be addressed at this point is the challenge of pinpointing the source of academic achievement. As stated succinctly by Chait et al. (2001) in their study on Title I implementation and the academic performance of children in high poverty schools:

Nearly two-thirds of Title I funds are used for schoolwide programs rather than being restricted to services for targeted students. The great extent to which there is intermingling of Title I resources with state and local resources, combined with the new focus on supporting state and local standards-based reform, make it impossible to measure the unique and separate impact of Title I dollars on student achievement, particularly in schoolwide programs (p. 13).

This study examined the academic performance of two Title I schools with different delivery programs. It focused only on the academic performance of economically disadvantaged students and not on the source of the academic achievement itself.

#### Limitations and Generalizability of the Results

This study included students from two upper elementary Title I schools (4th –6th grade) from an urban school district in Texas. The students selected were designated as “economically

disadvantaged” by the school district based on their qualification to receive free or reduced lunch. The research design chosen for this study was causal-comparative. A cohort of students from each model was selected based on specific criteria. First, they had to have attended the selected school district in 1998, in order to use their Texas Assessment of Academic Skills (TAAS) and Iowa Test of Basic Skills ITBS® (Houghton Mifflin Company Corporation, Boston, MA, [www.education.uiowa.edu](http://www.education.uiowa.edu)) and Stanford Achievement Test SAT-9™ (Harcourt Brace Educational Measurement, San Antonio, TX, [www.hbem.com](http://www.hbem.com)) scores as the pretest. Second, students must have attended the particular Title I (targeted or schoolwide model) school from 1999-2001. Third, students must have taken the TAAS or ITBS/SAT-9 all three years and had their tests scored, in order for the student to be included in the comparison groups.

The scope of this study was narrow, it was limited to the examination of the academic achievement of economically disadvantaged students in two Title I elementary schools. The intention of this study was to highlight any differences that may exist in academic achievement gains of economically disadvantaged students enrolled in a Title I elementary school that implemented a schoolwide model, and a comparable Title I school that used a targeted assistance model. The intent of this study was not to explain the cause and effect of academic achievement, rather to determine if there was any difference in the academic achievement of economically disadvantaged students served at the two Title I schools with different service delivery models.

Findings based on data from this study must be used with caution and only applied to similar populations after replication is done. Further research is needed in this area to determine the extent to which these results can be generalized beyond these two schools. Replication of this study is recommended. Specific recommendations for further study are offered later in this chapter.



## Reading Achievement Discussion 1999-2001

Research questions numbers 1 and 2 covered reading academic achievement of economically disadvantaged students on the TAAS (RQ1) and the ITBS/SAT-9 (RQ2). The data analysis showed that there was a difference in academic achievement in reading by Title I school configuration for ITBS/SAT-9 and TAAS. Economically disadvantaged students at the targeted assistance Title I model performed better than similar students at the schoolwide model. The analysis of covariance (ANCOVA) reports showed that the 1998 reading pretest accounted for the highest academic achievement variance in any of the three school years. The reading pretest explained from 22.8% to 43.4% of the variance of the dependent variable. It was the most significant contributor toward predicting the achievement in reading for each of the three years for both TAAS and ITBS/SAT-9.

Economically disadvantaged status made less than 1% of the reading achievement variance for 1999-2001 for both TAAS and ITBS/SAT-9. The type of Title I model, which economically disadvantaged students attended was significant for two out of the three school years, 1999 and 2001, but not in 2000. Title I model (schoolwide vs. targeted assistance) accounted for 0% to 13.2% of the variance in reading achievement after controlling for economically disadvantaged status of students. Reading TLI means were higher in 1999 and 2001 for economically disadvantaged students at the targeted model, and higher for economically disadvantaged students at the schoolwide model in 2000.

Reading normal curve equivalent (NCE) means were higher all three years on the ITBS/SAT-9 for economically disadvantaged students at the targeted model. Hypotheses 1 and 2 were both accepted; that is, there was a difference in reading academic achievement of

economically disadvantaged students attending the two different types of Title I schools, both on TAAS and on ITBS/SAT-9. Economically disadvantaged students that attended the targeted assistance model performed better.

Approximately 95% of students were identified as economically disadvantaged at the Title I schoolwide model, with ten or less students designated as non-economically disadvantaged. The overall achievement scores between the two groups at the schoolwide model were about the same. The small number of non-economically disadvantaged students makes their comparison incompatible and insignificant.

There was little difference in the reading achievement of economically disadvantaged students versus non-economically disadvantaged students at the targeted assistance Title I model. Although economically disadvantaged students at the targeted model scored lower by 4-10 points on TAAS and 3-6 points on the ITBS/SAT-9, they still scored higher than similar students at the Title I schoolwide model. Overall, economically disadvantaged students, as a group, scored higher at the targeted assistance Title I model than at the schoolwide model. Null Hypotheses 1 and 2 were both rejected; that is, there was a difference in reading academic achievement of economically disadvantaged students attending the two different types of Title I schools.

#### Math Achievement Discussion 1999-2001

Research questions numbers 3 and 4 cover math academic achievement of economically disadvantaged students on the TAAS (RQ3) and the ITBS/SAT-9 (RQ4). The data analysis in this study showed that there was a difference in academic achievement in math for economically disadvantaged students for ITBS/SAT-9 and TAAS. Economically disadvantaged students at the targeted assistance Title I model performed better than similar students at the schoolwide model. The ANCOVA reports showed that the 1998 math pretest, accounted for the highest achievement

variance in any of the three school years. The math pretest explained from 14.9% to 38.9% of the variance of the dependent variable on the TAAS test and was the most significant contributor toward predicting the achievement in math for each of the three school years. The math pretest explained from 25.7% to 29% of the variance of the dependent variable on the ITBS/SAT-9 during the same three years.

Economically disadvantaged status made up less than one percent of the math achievement variance for 1999-2001 for both TAAS and ITBS/SAT-9. The type of Title I model, which economically disadvantaged students attended was significant for two out of the three school years, 1999 and 2001, but not in 2000. Title I model accounted for 0%-8.2% of the math achievement after controlling for disadvantage status of students on both TAAS and the ITBS/SAT-9. Math Texas Learning Index (TLI) means were higher in 1999, 2000, and 2001 for economically disadvantaged students at the targeted model. Math NCE means for economically disadvantaged students were higher in 1999 and 2001 on the ITBS/SAT-9 at the targeted model. Math NCE means were even in 2000. Hypotheses 3 and 4 were accepted; that is, economically disadvantaged students did perform better in math at the targeted assistance Title I model, than at the schoolwide Title I model.

The overall achievement scores between economically disadvantaged and non-economically disadvantaged students at the schoolwide model were very similar, even though there were very few non-economically disadvantaged students. The two groups could not be compared at the schoolwide model, due to the very small number of non-economically disadvantaged students ( $n=7$ ). There was only a minor difference between the math achievement of economically disadvantaged students and non-economically disadvantaged students at the targeted assistance Title I model. Economically disadvantaged students scored only 1-2 points

below their non-economically disadvantaged peers at the targeted model. They also scored lower by 1-5 points on the ITBS/SAT-9. Economically disadvantaged students at the targeted model scored higher than similar students at the Title I schoolwide model. They were higher all three years on the TAAS, and two out of the three years on the ITBS/SAT-9. Thus, Null Hypotheses 3 and 4 were both rejected; that is, there was a difference in math academic achievement of economically disadvantaged students attending the two different types of Title I schools.

#### The Mixed Results in 2000

The results for 2000 were mixed with higher TAAS TLI means for economically disadvantaged students at the schoolwide model in reading and slightly higher, by two points, in math compared to the targeted model. Achievement scores in 2000 show that economically disadvantaged students at the schoolwide model performed much higher than in 1999 and 2001. Economically disadvantaged students at the targeted campus continued their consistently high performance 1999-2001. Even during their best academic performance of the three years, the performance of economically disadvantaged students at the schoolwide model was inconsistent. They were higher in reading by four points on the TAAS, but lower by five points on the ITBS/SAT-9. They were lower in math by two points on the TAAS and even on the ITBS/SAT-9.

The results on the TAAS 2000 tests could be due more to the “ceiling effect,” of the performance of the targeted model students, than the actual gain of the economically disadvantaged students in the schoolwide model. According to Gall, Gall, and Borg (2003), “a ceiling effect occurs when the range of difficulty of the test items is limited, and therefore scores at the higher end of the possible score continuum are artificially restricted” (p. 533). The apparent minimal gain of the economically disadvantaged students at the targeted model could

be misinterpreted as a loss in progress, when in fact there was a gain. The increase on TLI means of economically disadvantaged students at the schoolwide model could be attributed to the larger room for growth that these students had.

### Hypotheses Revisited

The hypotheses that drove this study were stated in chapter one. It was hypothesized that economically disadvantaged students at the targeted schools would do better in reading on the TAAS (H1) and the ITBS/SAT-9 (H2). The data analysis showed that economically disadvantaged students did perform better at the targeted model two out of the three years on the TAAS, and all three years on the ITBS/SAT-9.

Hypothesis 3 indicated that economically disadvantaged students would do better on the math section of the TAAS and hypothesis 4 on the ITBS/SAT-9. The data analysis showed that economically disadvantaged students did perform better at the targeted model all three years on the TAAS and two out of the three years on the ITBS/SAT-9. It would seem that economically disadvantaged students perform better when mixed with a higher number of non-economically disadvantaged students.

### Putting the Results in Perspective

This study showed that students' academic performance in 3rd grade before entering a targeted assistance or schoolwide Title I model, was the most significant predictor of their subsequent academic performance in grades 4th through 6th. Being economically disadvantaged did not make a significant contribution to the performance of students at the targeted model. This can be explained by the fact that the economically disadvantaged students at the targeted assistance model performed as well as the non-economically disadvantaged students, which resulted in it not being a significant predictor on the ANCOVA reports. Economically

disadvantaged status was not a significant contributor to the academic achievement of the students at the schoolwide model because the number of non-economically disadvantaged students was insignificant (n=7). According to the ANCOVA reports, all students at the schoolwide model were viewed as one group and not two.

The schoolwide Title I model, where 95% of the students were economically disadvantaged, performed lower overall than the targeted model. Economically disadvantaged students at the targeted model kept up with the higher performance of their non-economically disadvantaged peers. When the two economically disadvantaged student groups were compared, the targeted model group scored consistently higher in math and reading on both the TAAS and the ITBS/SAT-9 than the schoolwide group. When comparing reading achievement means, economically disadvantaged targeted students scored higher in five out of the six measures and lower one year. Math achievement means were higher for economically disadvantaged targeted students in five out of six measures, and even one year. For a detailed description of these data, please see chapter 4.

There are a number of factors not considered in this study that could have contributed to the outcome. The purpose of this study was to analyze the data from the two Title I models and answer the research questions regarding the academic achievement of economically disadvantaged students. This study never attempted to ascertain the reasons for such achievement. It would be prudent to consider unknown factors, and future researchers may want to extend this study to explore the causes of the academic achievement of economically disadvantaged students who attend Title I schools. Some themes or factors for further consideration might include:

1. Knowledge of the years of experience of the teachers at the targeted and schoolwide Title I schools.
2. Teacher effectiveness overall and particular performance with economically disadvantaged students.
3. Teacher attrition at the campuses could make a significant impact on the continuity of the instructional program.
4. The ethnicity breakdown of teachers at the campuses could help to determine if there are any cultural sensitivity issues.
5. Knowledge of how the Title I budget was spent on each campus could be helpful to determine its correlation with student achievement.
6. Knowledge of district initiatives that may place constraints on the direction of the Title I campus and its overall effectiveness could be significant.
7. Interviews of principals, teachers, and community leaders could help get a broad perspective of the implementation and effectiveness of the Title I campus.
8. Student mobility at the Title I schools could have a significant impact on the overall academic performance of the school.
9. Changes in federal Title I guidelines for use of funding could have a bearing on the delivery of services.
10. Changes on the state standardized test and/or standards could have an impact on the academic achievement results.
11. Changes at the district level from one norm-referenced test (e.g., Iowa Test of Basic Skills) to another (e.g., Stanford Achievement Test) could have an impact on student performance.

12. Change of campus or district leadership could have an impact on the delivery of Title I services.
13. Educational attainment of the parents of students who attend the different types of Title I schools could affect their academic performance.
14. Educational emphasis at home could also impact their academic performance.

### Discussion of the Findings

Research shows that schools with a large number of academically disadvantaged students tend to have additional challenges to face than schools with lower poverty levels. Needs such as safety, emotional well-being, and physical sustenance may have a higher priority than education in economically disadvantaged homes. Often, low-income families live in sub standard apartments, federal housing, or with a relative such as a grandmother, aunt, or uncle. They may not live in the same dwelling for a long period of time. They may move to other apartments as they learn about “move-in specials,” thereby disrupting the academic progress of their children at their present school. Parents or guardians are sometimes evicted from federal housing (Section 8 rentals) when their lease expires, because they do not take care of the property. In some cases, they run into trouble with the law and face incarceration for a period of time. This disrupts the living situation of low-income children, which requires them to live with a relative until the parent or guardian is allowed to return.

Also, many of these children know their grandmother as their “mom” because she is the only person they have known in that role. Some young women have children at a very early age and do not want to take on the responsibility of raising the child. The grandmother does not want the state to place the child in a foster home nor put the child up for adoption, so she takes on the mother role for the daughter. Most of the time it is done “unofficially” without adoption



papers, and sometimes results in further conflict and stress when the child's biological mother decides to resume her maternal responsibility later.

The unstable living environment could be the largest contributor to the child's failure in school. Because of the instability, they come to school lacking the basic social skills to deal with their peers and adults. Teachers and administrators spend vast amounts of time teaching the children how to behave properly at school, prior to any learning taking place. This is wasted time for the teacher because it would be more productive to use the time to help the students academically. Schools without this additional educational constraint can acquire a lot more learning in the course of a year.

When a student gets in trouble at a high poverty school, it is difficult to get the parent or guardian to attend a parent conference, but if the child gets home and tells a story of perceived abused or neglect by the school, that parent will come to school and demand answers, even to the point of verbally or physically attacking teachers or staff. This type of parent behavior intimidates some teachers and convinces them to look for a position in a safer school environment. Clearly, one of the keys to any successful school is the level of competency of the teachers. An effective team of teachers can make a school successful, but high turnover and low morale among teachers only compound the needs of students at high poverty schools.

Whether the child lives with the parent or a relative does not matter, if education is not a priority in the home, the child is not going to be ready for learning. Often, there are few role models for the low-income child who have furthered their education beyond high school. Hence, education is not modeled as a path to success. Moreover, many of the adults in the lives of poor children may not have had a positive experience when they were in school, and are therefore unwilling to support the school or get involved in their child's education.

The end result is that low-income children often show up for their first day of school already behind their peers. Thus, these children come to school 2-3 years behind grade level, to a school with more needs than personnel or resources to deal with them. Hard-working and dedicated teachers make it their calling to work long hours before, during, and after school to help the child catch up to grade level, but just as the student begins to make progress, the child is moved to another school. This can become extremely frustrating to teachers unless they take the view that they are going to do their very best for every student for as long as the student is enrolled in their school.

These are the challenges that economically disadvantaged students face in Title I schools, especially those with high poverty rates. In the final analysis, all schools get measured by the same standardized tests, as if they were all similar schools. The suburban school with a very affluent population and the exact opposite of the urban high poverty school are compared as if their needs were the same. For every successful Title I school with a high poverty rate, there are countless more that are not succeeding. Teachers in many of the Title I schools get frustrated with the challenges of their job, so they decide to move to other schools with less demanding needs and more parent support. This is the reason for the high teacher turn over rates at many Title I schools.

Principals also get frustrated with the bureaucracy that expects them to succeed with all kinds of constraints in place and no support. They can only work so hard, for so long, get no recognition, and all the blame for the lack of academic progress of a high poverty school. Principal turn over is also a challenge at many Title I schools; the lack of consistent leadership exacerbates the overall needs already present at these schools. Principals are often restricted by personnel and resources to adequately address the needs of economically disadvantaged students,

because many of these students require an individualized plan which is more expensive to implement and less likely to be supported by central administration.

### The Importance of Ensuring Success for ALL Students

The reason why it is critical that all students are successful in high and low poverty schools is to ensure the continued success of the United States in the future. All citizens have an obligation to ensure that all students are provided with an opportunity to succeed in life through education. The negative consequences are already present: high crime, bad health habits, and a continuation of a poverty cycle with no end in sight. Economically disadvantaged students do require additional resources for an adequate education. They have many emotional, economic, and socio-cultural challenges confronting them at an early age and must be taken into account when planning for their education. These students require reading coaches, one-on-one tutors, small group instruction, additional materials and parent training.

Society will pay for addressing the needs of economically disadvantaged students. We can invest in their education early in their lives, and provide them with a positive outlook and hope of a bright future, or we can wait until they grow up to take care of them. When we allow similar economically disadvantaged students to cluster in a school, their collective needs cannot be properly addressed by formulaic allocations developed by a district. The results of this study suggest that economically disadvantaged students perform better academically when in an environment with a large number of non-economically disadvantaged students. It could be due to the stability of the teaching staff, parent support, school leadership, or the high expectations from teachers and staff.

The idea of busing students for racial integration was never popular, but we must consider the new idea of economic integration. Isolating poor students in low-performing

schools is just as bad as racial segregation. Poverty knows no color; it devastates all races the same way. We can make a difference in the lives of all children if we treat their needs individually and address them in new and innovative ways.

#### Recommendations for Further Study

The typical pattern of the urban metropolis is well known, the affluent population moves out to the suburbs and the poor population is left behind around the core of the city. Urban school districts usually set attendance boundary lines based on proximity to the school. These attendance zones leave large pockets of students in poverty destined to enroll in a school that will be principally attended by other economically disadvantaged students. In most cases, the further out from the core of the city, the lower the percentage of poverty. Some of the schools in the outer end of the urban school districts usually enjoy the benefits of a public school system with the advantage of the suburban setting.

I recommend re-thinking the way attendance zones are drawn so that students from the core of the city mix with students at the outer ends of the city. This approach would not be based on proximity to the school, but on a triangular approach. The larger side of the triangle would be on the outer end, where the population is spread out, and the smaller part of the triangle in the core of the city, where the population concentration is higher. This type of re-zoning would ensure that a good mixture of students attend and learn in schools together. All it would take is busing of students, and staggering the starting times of some areas of schools if the number of buses were not sufficient.

It would not solve all of the problems associated with poverty, but it would guarantee that students from different settings learn together. This study suggests that a mixture of students could benefit all students. At the very least, it would help students learn from each other's

learning environment and appreciate the differences and challenges they face. Based on the results of this study, the following recommendations are offered:

1. Replicate this study by choosing two other comparable Title I schools in an urban school district, a targeted assistance model with about 47-50% poverty and the schoolwide model with 95-97% poverty rate.
2. Replicate this study using only one of the standardized tests. Focus only on the state standardized test or the national norm-referenced test in order to clearly see the results on one test.
3. Extend the length of the study to cover four to six years of standardized test performance.
4. Replicate this study and include more comparable Title I schools. Include 5-10 targeted assistance and schoolwide models with varying demographics and especially varying percentages of economically disadvantaged students.
5. Expand this study to include other Title I comparison schools with different percentages of poverty. For example, a targeted model campus with a poverty rate of 25% and a schoolwide model campus with a poverty rate of 75%, or a targeted campus with 40% poverty and a schoolwide campus with 60% poverty.
6. Replicate this study using schools from a suburban school district with different percentages of Title I students and different types of models.
7. Replicate this study using schools from a rural school district with different percentages of Title I students and different types of models.
8. Replicate study focusing on the predictability of previous performance on future performance of economically disadvantaged students.

## Conclusions

The aim of this study was to compare the academic achievement of economically disadvantaged students at two Title I schools. One of them delivered services to all students schoolwide, because 94-97% of their student population was designated as economically disadvantaged. The other school targeted services to students who were identified as failing or at-risk of failing, because only 47-50% of students were designated economically disadvantaged.

The data showed that the economically disadvantaged students at the targeted model scored better in math and reading on most of the TAAS and ITBS/SAT-9 measurements. The analysis of Covariance showed that the math and reading presets accounted for the highest amount of variance on the achievement scores each year. More research is needed in this area to determine academic achievement predictions based on previous performance. Economically disadvantaged status was not significant and contributed only less than one percent of the math and reading achievement variance.

The data from this study suggest that the type of Title I model did make a significant contribution to the reading and math academic achievement of economically disadvantaged students. The type of Title I model was not as significant on both test measures. It seemed to have a stronger effect on the state standardized test (TAAS) than on the national norm tests (ITBS or SAT-9). The type of Title I model made a consistent difference on the TAAS. Reading and math achievement was significant in two out of the three years. Performance on the ITBS and SAT-9 was not as consistent; however, the type of Title I model was significant in reading two out of the three years, but only in one of the three years in math.

In the final analysis, economically disadvantaged students at the targeted model performed closer to the non-economically disadvantaged students at the targeted assistance

school, and they performed better than their peers at the schoolwide model. This study suggests that economically disadvantaged students perform better when in a school where half of the student population is non-economically disadvantaged. This study supports previous research (Kennedy, Birman, & Demaline 1986; Puma, Rock & Fernandez 1993) suggesting that the achievement scores of all students decline as the proportion of economically disadvantaged students increases; in this case, regardless of Title I model.

It would be beneficial to know how economically disadvantaged students at other Title I schools with different percentages of economically disadvantaged students perform academically. It would be interesting to know if economically disadvantaged students perform well up to a certain percentage of economically disadvantaged student population in a school. Recommendations are offered based on these results. These research questions invite further study, which can help legislators and practitioners learn how to best serve economically disadvantaged students. Districts may not be willing to move students to other schools to reach population percentages that would benefit economically disadvantaged students, but they can learn about the critical student population blends in order to target more resources to schools with the highest percentages of economically disadvantaged students.

The results of this study suggest that economically disadvantaged students in a Title I school with a large number of economically disadvantaged students do not perform as well as economically disadvantaged students a Title I school with half of its population designated as economically disadvantaged. Poor students clearly have more needs, require more resources, and cry out for an unwavering plan to ensure their success. The question is whether we chose to hear their plea or chose to ignore it.

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