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Imelda Medrano

May 2012

AN INVESTIGATION INTO THE IMPACT OF GRADE RETENTION AND GRADE
PLACEMENT AS INTERVENTIONS
IN A LARGE SUBURBAN SCHOOL DISTRICT IN TEXAS

A Doctoral Thesis Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
Of the Requirements for the Degree

Doctor of Education
In Professional Leadership

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DEDICATION

I dedicate this work to my mother, Evarista G. Forbes, and to my father, Eusebio Palacios. Thank you for being my inspiration throughout my life's journey. I am grateful for the example you provided for me of perseverance and hard work in all things. This doctoral thesis is also dedicated to my husband, Juan R. Medrano. Thank you for encouraging me to stick to it no matter what.

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ABSTRACT

The purpose of this study was to examine the impact of grade retention and grade placement on student achievement in both reading and math over the course of five years. A comparison was drawn amongst two cohorts of students in 3rd through 5th grade: (a) students in each grade who were retained in the year 2006-2007 due to failing report card grades or failure to meet minimum expectations on the state-mandated assessment in either math or reading, and (b) students in each grade who failed to meet promotion standards in 2006-2007 due to failing report card grades or due to failure to meet minimum expectations on the state-mandated assessment in either math or reading and were placed in the next grade level.

The four research questions guiding this study were: (1) How did report card grades for math and reading of the retained students compare to those of the placed students of similar achievement levels on five different time points, years 2007-2011? (2) How did the achievement levels on state-mandated assessments for reading and math of the retained students compare to those of the placed students of similar achievement levels on five different time points, years 2007-2011? (3) How were absence rates distributed amongst the retained and placed groups of students and did the absence rate impact the achievement of the students in math and reading as measured by performance on state assessments on five different time points, years 2007-2011? (4) How were the

factors of gender, ethnicity, and socioeconomic status distributed among the retained and placed groups of students and did those factors impact the achievement of the students in math and reading as measured by performance on state assessments on five different time points, 2007-2011?

The statistical treatment included both ANOVAs and MANOVAs. The data revealed that students who were retained consistently scored higher than students who were placed on final report card grades as well as on state-mandated assessments for both reading and math. However, the advantage dwindled from up to ten percentage points during the second year of the study down to only three percentage points in the fifth and final year.

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Chapter One

John Locke (1690), a British philosopher, planted the seed for the idea of placing emphasis on education with his famous work, “An Essay On Human Understanding” wherein he states “Since it is understanding that sets man above the rest of sensible beings, and gives him all the advantage and dominion which he has over them; it is certainly a subject, even for its nobleness, worth our labor to inquire into”. Obtaining higher levels of learning via a public education has long been a part of the ever elusive “American dream.” The founding fathers of the United States of America also recognized the value of educating the masses. In the beginning, the purpose of educating our youth was often religious training. Eventually, the ideas of respected men such as Thomas Jefferson, who believed that education should be under the control of the government, free from religious biases, and available to all people irrespective of their status in society, became a part of the fiber of this country (Thattai, 2001).

Prominent among these respected men were Horace Mann in Massachusetts and Henry Barnard in Connecticut. Mann started the publication of the Common School Journal, which took the educational issues to the public. The common-school reformers argued for the case on the belief that common schooling could create good citizens, unite society, and prevent crime and poverty. As a result of their efforts, free public education at the elementary level was available for all American children by the end of the 19th century and accessibility to higher education followed (Thattai, 2001).

Regrettably, free did not translate into equal. Religious, political, economic and racial factors all played a significant role in creating unequal access to that free public education (Thattai, 2001). Even though segregation laws were established in the 1950s, inequalities were not thoroughly addressed and still exist today. In spite of court rulings, it remains difficult to eliminate discrimination in practice. Many whites and middle class blacks had moved out of central cities and into the suburbs by the 1970s, leaving poor blacks and rising populations of poor and non-English speaking Hispanic Americans to attend low performing urban schools (Thattai, 2001). The manner in which school funding is currently designed in most states perpetuates this problem because property values determine tax rates which, in turn, determine school funding (Thattai, 2001). This leads to school districts with low property values having low resources while school districts with higher property values have higher resources. In today's educational system, disproportionate amounts of minorities and low-socioeconomic students, who live in the school districts with low property values and low resources, are retained each year. They are ill-equipped to meet the stringent promotion standards put in place by federal legislation set forth in the No Child Left Behind Act (NCLB) of 2001 (US Department of Education, 2004).

The NCLB (2001) was put into place with the intention of closing the gap between higher-performing, affluent, Anglo Americans and lower-performing, poorer, minority Americans, and thus, improve the latter's access to a quality education that was not only free, but equal. NCLB legislation calls for all students to meet certain achievement standards in math and reading prior to advancing to the next grade level (No

Child Left Behind Act, 2001). McCoy and Reynolds (1999) studied the effects of 1,164 low income, minority students from Chicago from the ages of 5 to 14. Their research suggested that retained students consistently underperformed when compared to their equally low-achieving promoted peers. Educators are faced with a daunting task when the research suggests retention will not benefit, and quite possibly, may be harmful to a student on the one hand and legislation states a student is not to be placed in the next grade until certain achievement standards are met.

This era of increased state and federal accountability has led to marked improvement in academic achievement for many students. There has been an increase in both reading and math achievement scores across the nation, possibly due to teachers and administrators putting forth enormous efforts to find new and creative ways to increase student learning to satisfy NCLB requirements (Jimerson, Pletcher, Graydon, Schnurr, Nickerson, & Kundert, 2006). However, there are still many students, predominantly minorities, for whom the system continues to fail, as indicated by the nearly 200,000 students who have been retained each year over the past five-years in the state of Texas alone (Texas Education Agency, 2008b). More children have been retained since NCLB was passed than prior to its being in place. It is estimated that over 3,000,000 children are retained annually in the United States and that by high school, over 50% of students have been retained at least once (Jimerson, et al., 2006). Compounding the situation even further is the glaring statistic that retention has been identified as the single most powerful predictor of dropping out of school with percentages ranging from 50% to 78% of dropouts having been retained at least once (Jimerson, 2001).

Statement of Problem

“To retain or to place?” is a question that education professionals, parents, and policy makers throughout the United States have struggled with since the early 1900s (Jimerson, et al., 2006, p.85). The accountability level in today’s education system has become so high that teachers and administrators are reluctant to place children who have not met promotion standards into the next grade level for fear that they will be unable to master the essential knowledge and skills. This reluctance occurs even if these students can be provided the same level of interventions without respect to the grade level they are in, and even when the research that exists pertaining to retention clearly states there is little to no academic benefit in retaining a child. More important, educators are reluctant to place a struggling child in the next grade level even when clear evidence exists that retention causes significant harm to a child’s self-esteem and ability to see himself as a potentially successful learner (Holmes & Matthews, 1984).

Educators continue to struggle with the difficult decision over whether it is in a child’s best interest to be placed in the next grade level without mastering the curriculum and continue to strive to meet his educational needs via intervention programs, or to retain him, thus causing him to repeat the entire year’s curriculum, without respect to the subjects in which he has strengths or deficiencies. It is not until high school that a student can re-take only the course that he failed. The research respecting the practice of using retention as an intervention is plentiful, but somewhat misleading. In the literature about student retention, authors such as Darling-Hammond, (1998), Jimerson, (1999, 2006), and Shepard and Smith, (1988) argue that in the long run, retaining a student has

only short-term benefits and does not positively impact student achievement two to three years after the student has been retained. According to Jimerson (2001), quality interventions, such as extended instructional time, tutoring, and specialized programming specific to the student's deficiencies, would achieve a more beneficial outcome than retention.

To further complicate matters, there is an equally substantial amount of literature from authors such as Alexander, Entwisle, and Dauber, (1994) and Galatowitsch (2007), who believe that promoting a child who did not meet the criteria of promotion standards does a disservice to the child and causes him to fall further and further behind by putting him in a position to master curriculum that is out of his learning ability. These authors stand by their belief that retention allows the student time to develop and mature and puts him on equal footing, or even at a slight advantage in comparison to his younger peers (Alexander, et al., 1994). This school of thought makes light of any research findings related to adjustment issues or feelings of shame, embarrassment or low-self-esteem that are espoused by the anti-retention group. This attitude is supported by current legislation and the opinion of those responsible for writing education legislation as is evidenced by former President William Clinton's "State of the Union Address" in both 1997 and 1998 where he called for an end to social promotion and the retention of students who did not meet promotion standards across America (Clinton, 1997, 1998).

The pressure that the NCLB (2001) legislation placed on educators across the nation spurred an increase in the number of assessments and the frequency with which they are administered in order to measure student achievement. This legislation has

caused retention situations that could not possibly be considered beneficial to students who do not fall into the expected rate of learning as is evidenced in the outcome of a study conducted by Demar-Williams (2003). Demar-Williams (2003) states that the Chicago School Board developed a new set of stringent promotion standards leading to students being retained more than once without being able to “catch up” to their grade level peers or meet promotion standards even after repeating the same grade twice.

Unfortunately for current educators making important promotion decisions for their students, both bodies of research, as will be shown in the literature review section of this paper, have limitations. These limitations include: (1) study groups that are too small and not randomly selected, (2) studies that are too short and fail to establish long-term effects of retention, (3) comparison groups that are not similar, and (4) the inability to rule out the many other variables that impact student learning. These add to the inconsistency with which retention and placement decisions are made for students who do not fall within the expected rate of learning for their grade level.

Purpose of the Study

The purpose of this study is to discover the impact of the practice of using grade retention and grade placement as an intervention for students who are struggling to meet promotion standards within a large suburban school district in Texas. The findings in this study will show whether or not students who were retained in 2006-2007 in third, fourth, and fifth grades have achieved satisfactory levels of academic success over a five-year time period as compared to students with similar achievement levels who were placed in the next grade level rather than being retained. In addition, this paper will review and

summarize literature on the research both for and against the practice of retention and its impact on student achievement. This study will serve to inform educators as they make decisions respecting whether grade retention or grade placement is in the best interest of their struggling students.

Richardson (2010) found that teachers' perceptions of the benefits of retention, rather than the research on retention, drive their decision making when considering retention for students. Richardson (2010) conducted a study which included 164 elementary teachers from both rural and urban Mississippi and concluded: "while numerous researchers have shown retention to have harmful impacts on children, educators believe that the practice is a good intervention when skills are not mastered for promotion (p. 55)". This finding was consistent with the literature on teachers' perceptions of retention which states that teachers strongly disagree with students never being retained and that retention takes students from the bottom of their class to the top (Smith & Shepard, 1990, 1989; Tomchin & Impara, 1992).

Study Overview

This quantitative study will consist of looking at pre-existing achievement data for all students in a large suburban school district in Texas who were retained in the 2006-2007 school year in third, fourth, and fifth grade. The study will look specifically at these students' final report card grades in reading and math as well as their performance on state-mandated assessments over the course of five years. Report card data will be measured via the standard numerical grading scale where 70 and above is passing. Number of items correct will be used to measure achievement on the state-

mandated assessments. Additional data to be considered will include gender, ethnicity, economic status, and absence rate.

In addition to the retained student cohort, the same data will be examined for a comparison group of students. The comparison group will consist of students who did not meet promotion standards in the 2006-2007 school year and were placed in the next grade level anyway, a practice referred to as grade placement. This comparison will allow the study to demonstrate whether or not there exist any significant differences in achievement levels between the students who were retained versus the students with similar levels of low achievement who were placed in the next grade level.

Significance of the Study

This study will serve to inform teachers and administrators in this large suburban district as to whether or not retention or grade placement has proved to be a successful intervention for the students involved in the study. It will also provide an opportunity for all educators in the district to become more knowledgeable respecting the research and literature that exists with respect to the practice of retention. This newly acquired knowledge will better equip the teams of teachers and administrators who are responsible for making promotion/retention decisions for students who are failing to meet promotion standards in the future. Specifically, district leaders can use the findings when setting policies respecting students who fail to meet promotion standards. During the course of this study, some valuable information respecting the success or lack of success of intervention programs for retained students may emerge.

In addition, the outcome of this study will add to the currently existing body of research on the impact of grade retention and grade placement. This will lead towards better informed decision making, not only for this suburban district, but also on a grander scale, as the question of retention is a world-wide concern, as is evidenced by the study conducted by Chen, Liu, Rozelle, Shi, and Zhang (2010) in China. Their study, which involved analyzing student performance for 1649 elementary school students in rural China, found no significant positive effect of grade retention on school performance of the students. In some cases, retention was shown to hurt school performance, as is depicted by the drop in performance levels of the retained students involved in the study (Chen, et al., 2010).

Research Questions

The following four research questions guided this study:

1. How do report card grades for math and reading of the retained students compare to those of the placed students of similar achievement levels on five different time points, years 2007-2011?
2. How do the achievement levels on state-mandated assessments for reading and math of the retained students compare to those of the placed students of similar achievement levels on five different time points, years 2007-2011?
3. How are absence rates distributed amongst the retained and placed groups of students and does the absence rate impact the achievement of the students in math

and reading as measured by performance on state assessments on five different time points, years 2007-2011?

4. How are the factors of gender, ethnicity, and socioeconomic status distributed among the retained and placed groups of students and do those factors impact the achievement of the students in math and reading as measured by performance on state assessments on five different time points, 2007-2011?

Conceptual Terms

The following explanations apply to the use of these terms in this study:

Dropout-A dropout is a student who has stopped attending school without completing the requirements of a high school diploma or a general equivalency diploma (GED).

The National Center for Education Statistics defines a dropout as a student who was enrolled at any time during the previous school year who is not enrolled at the beginning of the current school year and who has not completed school.

Students for whom there is documentation that shows they have transferred to another school, died, moved to another country, or who are out of school due to illness are not considered dropouts (U.S. Department of Education, 2004).

Elementary School-An elementary school will be defined as a school that serves children in grades kindergarten through fifth grade.

Grade Placement-Grade placement refers to the practice of promoting students with their same-age peers without respect to their mastery of the current grade level's curriculum (Jimerson, 1999).

High School-A high school will be defined as a school that serves students in grades nine through twelve.

Junior High School-A junior high school will be defined as a school that serves children in grades sixth through eighth.

Promotion Standards-a set of academic measures that are used to determine whether or not a student has mastered the current grade level's curriculum and thus will be promoted to the next grade level.

Retention-Retention will be defined as the practice of requiring a student who has been in a given grade level for a full school year to remain at that level for a subsequent school year (Jackson, 1975).

Suburban school district-A suburban school district describes a school district within a community that has developed immediately outside a city or a town.

Chapter Two: Review of Literature

The purpose of this study is to investigate the impact of grade retention and grade placement on student achievement in reading and math when used as an intervention within a large suburban school district in Texas. Chapter Two reviews the literature on retention and grade placement beginning with a historical perspective and then looking at the available research that advocates for the use of retention as an intervention as well as research that claims it is harmful and/or ineffective as an intervention. Resources for this chapter were obtained via: ERIC searches, a review of Dissertation Abstracts on the topic of student retention, an examination of related books in education, and a review of related journal articles.

A Historical Perspective

The difficult decision between retention and promotion of students who are not meeting grade level standards facing educators today was non-existent back in the days of the one-room school house. According to Holmes and Mathews (1984), the lack of established standards and small class sizes with only a few students of each age made it necessary for teachers to use individualized instruction as their primary mode of instruction. Students worked directly from a text in each subject and would not move forward in the text until the teacher considered a concept mastered by the student. As a result, students worked at their own pace, without respect to the progress of their peers. It was not until early in the 19th century, when more children were enrolling in schools and the numbers of children in a classroom became very large, that the notion of graded schools and retention became a common practice. Rose, Medway, Cantrell, and Marus (1983) note that by the middle of the 19th century, grade retention became the chosen

method of correcting academic deficiencies and was so common that approximately every other child was retained at least once during their first eight years of school.

Levels of Retention Today

Based on the review of available literature on the topic of grade school retention, the number of children that continue to be retained at least once during their first eight years of school has not decreased, in spite of the lack of research supporting its effectiveness (Hong & Yu, 2007; Jimerson, 1999; Shepard & Smith, 1989). The number of children in the United States being retained has actually increased in the past decade with an estimated 3 million students being retained each year (McCoy & Reynolds, 1999 and Jimerson, 2006). Of even greater concern is the finding that retention rates escalate rapidly when socio-demographic risk factors such as one parent homes, unemployment, and drug or alcohol dependency exist (Jimerson, 2006). Although there are no national statistics on the rate of retention, it has been estimated that by the time children reach third grade, one in five has been retained (Alexander, Entwisle, & Dauber, 1994).

The Retention/Placement Debate Begins

Retention was first challenged by social scientists in the 1930s with warnings of potential adverse effects on children's social and emotional well-being (Rose, et.al, 1983, Steiner, 1986). This led to the practice of social promotion in an effort to reduce the large numbers of overage, low-achieving students that were beginning to fill classrooms. Rather than hold students back until they met standards, it became acceptable to move students onto the next grade level with their peers. These students were placed in ability groups and were provided with remedial help. As with all educational practices, this too,

soon became a concern and in the 1960s, educators noted a decline in student achievement on standardized tests. Some began to question whether or not social promotion was in the best interest of the students who were not making sufficient gains according to grade level standards (Rose, et.al, 1983). This added new urgency to the debate respecting whether or not it was in a student's best interest to hold him back until he mastered the required curriculum or to pass him on and provide him remedial support with the goal of protecting his sense of self-worth.

Examining the Research

There exists significant research both in support of student retention (Alexander, Entwisle, & Dauber, 2003; Karweit, 1999; Peterson, DeGracie, and Ayabe, 1987) and in opposition to it (Holmes & Matthews, 1984; Jimerson, 1999; and Shepard & Smith, 1989). It is important to carefully examine the studies for research constructs that may render the results invalid (Alexander, et. al, 2003). Some examples of problems with the existing research are the lack of a similar control group, the inability to account for the differences in instruction received both before and after the retention, the inability to measure outside factors that may or may not impact student achievement such as home environment or quality of the resources and intervention programs of the schools, and the lack of examination of the impact of retention or social promotion over an extended period of time (Jimerson, 1999). Though there has been much research on the subject of grade retention and social promotion, much of it is described as being poorly designed, which renders it inadequate for making valid inferences about the effects of either grade retention or social promotion on student achievement (Jackson, 1975).

Research Constructs Found Problematic

The following section of this review of literature cites several studies and their respective findings related to research study designs on grade retention versus grade placement.

Jackson's meta-analysis.

Jackson (1975) conducted an extensive review of the research on the subject of grade retention looking carefully at every research study that reported original research starting from the 1930s until the 1970s. The specific purpose of Jackson's review was to determine, as well as possible from currently available research results in the preceding 30 years, whether students who were doing poor academic work or who manifested emotional or social maladjustment in school were generally likely to benefit more from being retained in a grade than from being placed in the next one (Jackson, 1975). What he discovered was that very few of the studies were without considerable flaws. He categorized the studies by design and ended up with the following three categories: (1) those that compared low achieving students who had been retained with similarly achieving students who had been promoted, (2) those that looked only at retained students and compared their achievement prior to retention with their achievement after retention, and (3) those that started with a large group of low achieving students and randomly promoted half of them and retained the other half and then compared their achievement. All three designs looked at student academic achievement, social adjustment, and personal adjustment. The only conclusion that resulted from this detailed study was a clear need for more research of sound design. Even in the third category of

similar-ability students being randomly promoted or retained, a design Jackson (1975) viewed as highly reliable, there was very little difference in the outcomes between the retained and the promoted students.

In conclusion, Jackson urged educators and researchers to continue to strive for an experimental based research study where results validly support retention as a beneficial practice for struggling students. He gives the following precautions to future researchers:

- (1) Sample from a population large and diverse enough to allow broad generalization of the findings;
- (2) Define carefully the treatments, as interventions for children who are retained in a grade or promoted vary greatly and the treatments are likely to have different effects;
- (3) investigate interaction effects between treatments such as small group instruction, extended school day, and one-to-one instruction, general characteristics of subjects such as socioeconomic status, home life, and ethnicity, the conditions for which subjects were considered for grade retention, such as lack of maturity, lack of mastery of content, and physical stature, and characteristics of the schools, such as mobility rate, experience and longevity of teachers, and financial resources; and
- (4) Investigate long-term as well as short-term effects (Jackson, 1975, p. 628).

There is no reliable body of evidence, according to Jackson (1975), to indicate that grade retention is more beneficial than grade placement for students with serious academic or adjustment difficulties. Thus, those educators who retain pupils in a grade do so without valid research evidence to indicate that such treatment will actually provide greater benefits to students with academic or adjustment difficulties than will promotion to the next grade (Jackson, 1975).

Holmes and Matthews's meta-analysis.

Another significant examination of the research on retention was compiled by Holmes and Matthews (1984). In response to the clamor of educators and policy makers for clarity in the research, Holmes and Matthews set out to conduct a meta-analysis that would once and for all set the record straight with respect to whether or not retention actually improved student achievement. Holmes and Matthews, like Jackson, conducted an extensive review of the literature on the topic of retention and chose 44 studies to include in their meta-analysis. Each of the 44 studies was conducted between the years of 1929 and 1981 and met the following criteria: (a) they presented the results of original research of the effects on pupils of retention in the elementary or junior high school grades, (b) they contained sufficient data to allow for the calculation or estimation of an effect size, and (c) they compared a group of retained pupils with a group of promoted pupils. The 44 studies consisted of 18 published studies, 14 dissertations and 12 masters' theses. The majority of these studies were conducted in the United States.

Critics of the Holmes and Matthews study claim the validity is threatened because only 18 of the 44 studies compare retained students to promoted students with matching

achievement and IQ scores (Holmes & Matthews, 1984). In response, Holmes and Matthews (1984) conducted a mean effect size with these studies to see if the matching groups produced different results from the overall effect sizes previously calculated. A grand mean effect size of a gap of $-.38$ standard deviations between the retained and the promoted students was obtained, which was very similar to the gap of $-.37$ standard deviations for the overall group. Holmes and Matthews believe that the high degree of consistency between these measures supports the conclusion that differences in the designs of the studies resulted in no significant amount of bias in the results.

Five major areas of dependent variables were examined including: (1) academic achievement, (2) personal adjustment, (3) self-concept, (4) attitude toward school, and (5) attendance. The results of the study indicate that the retained students scored on average $.37$ standard deviation units lower ($-.37$) than the comparison group of their promoted peers. Holmes and Matthews (1984) concluded that those who continue to retain pupils at grade level do so despite cumulative research evidence showing that the potential for negative effects consistently outweighs positive outcomes. They further challenge advocates of retention to produce proof that retaining students is actually beneficial in light of this research.

Opponents versus Proponents of Retention as an Intervention

The next set of reviewed studies illustrate the ongoing feud between opponents and proponents of the use of retention as an intervention for students who are struggling to master grade level curriculum.

Opponents of Retention

A study in Minnesota finds retention non-beneficial.

Jimerson (1999) conducted a longitudinal study that examined the impact of early grade retention on education and employment during late adolescence. This study actually heeded the precautions laid out by Jackson in 1975. Jimerson's 21-year study, conducted between the years of 1978 and 1999, carefully chronicles the achievement of 190 children both before and after they were retained in kinder through 3rd grade. Jimerson tracked these children from birth up until they reached the age of 20. Participants for the study (Jimerson, 1999) were selected from the Minnesota Mother-Child Interaction Project for children who were at risk for maladaptive outcomes. The careful design of this research is what makes it significant. Jimerson provided data about the children's mothers' socioeconomic status, the child's birth history, the child's home environment, and the achievement records of the retained children. He then compared them to a group of children with similar achievement levels who were promoted in spite of their low achievement and to a control group of random children in the same Minnesota project who maintained average performance through third grade. The participants in this study were from various schools and of various ethnicities, further strengthening the validity of the study. The following five questions were addressed in the Minnesota study:

1. What is the association between grade retention and academic adjustment in high school?

2. What is the association between grade retention and dropping out of high school?
3. What is the association between grade retention and obtaining a certificate of high school completion?
4. What is the association between grade retention and postsecondary education?
5. What is the association between grade retention and employment outcomes in late adolescence (Jimerson, 1999, p. 247)?

The results of this 21-year, prospective, longitudinal study—which includes retained students, low-achieving but promoted students, and a control group—provide evidence that retained students have a greater probability of poorer educational and employment outcomes during late adolescence. Specifically, retained students had lower levels of academic adjustment at the end of 11th grade, were more likely to drop out of high school by age 19, were less likely to receive a diploma by age 20, were less likely to be enrolled in a postsecondary education program, received lower education/employment status ratings, were paid less per hour, and received poorer employment competence ratings at age 20 in comparison to a group of low-achieving students. Furthermore, the low-achieving but promoted group was comparable to the control group in all employment outcomes at age 20 (Jimerson, 1999, p. 243).

In summary, Jimerson (1999) urges parents, educators, researchers and policy makers to carefully reconsider using retention as an intervention and to explore alternatives, such as those suggested by Darling Hammond (1998) instead. Darling-

Hammond (1998) expresses concern over using the negative effects of retention as an argument in favor of social promotion. Instead, she recommends four specific strategies that would prevent the need for either retention or social promotion: (1) enhancing the professional development of teachers, (2) redesigning school structures to support more intensive learning, (3) establishing targeted supports and services for struggling students, and (4) using better formative assessment to guide first time instruction such as pre and post assessments, fluency probes, and other frequent progress monitoring.

A study in Chicago Public Schools finds retention non-beneficial.

In the mid-1990s, the Chicago Public Schools declared an end to social promotion and instituted promotion requirements based on standardized test scores in the third, sixth, and eighth grades (Roderick & Nagaoka, 2005). Roderick and Nagaoka (2005) tracked the experience of third and sixth grade students who were retained under Chicago's policy between the years of 1997 and 2000. They examined the progress of these students for 2 years after they were retained and estimated the short-term effects of retention on reading achievement. The effects of retention were estimated by using a growth curve analysis. Comparison groups were constructed by comparing the achievement growth of a group of low-achieving students who just missed passing the promotional cutoff to a comparison group of students who just met the promotional cutoff at the end of the summer. What they found was that the students who just missed the promotional cutoff and were retained continued to struggle during their retained year and faced significantly increased rates of special education placement (Roderick & Nagaoka, 2005).

A study in Canada finds retention non-beneficial.

A more recent study that also took great pains to ensure validity was that of Hong and Yu conducted in 2007. This study did a parallel analysis of kindergarten and first grade students over a five-year time frame in Canada. They started with a group of 10,726 kindergarteners and 10,707 first graders that were similar in their cognitive and social emotional development, physical and mental health, home environment, level of parental involvement, classroom composition, teacher characteristics, and school resources and characteristics (Hong & Yu, 2007). At the end of year one, 471 kindergarteners and 201 first graders had been retained for low academic achievement and/or poor social or personal adjustment. In the fifth year of the study, due to attrition, there were 7,050 left from the promoted kindergarten cohort and 255 left from the retained kindergarten cohort. The first grade cohort also experienced attrition and ended with 8,259 promoted subjects and 140 retained subjects in the fifth year. A norm-referenced measurement tool was given to all students at the end of the first, third and fifth years to draw comparisons in achievement in both math and reading between the retained and the promoted groups. In both kindergarten and first grade, the retained students lagged behind their similarly achieving promoted peers in both reading and math each year of the study (see Table 1). Although the gap between the retained students and the promoted students got smaller at the end of the fifth year, the researchers still believe this is strong evidence that retaining a low-performing student does not result in any benefits for the student in math or reading (Hong & Yu, 2007).

Table 1

Canadian Study-Difference in Achievement-Retained versus Promoted 2007

	Year 1		Year 3		Year 5	
	Reading	Math	Reading	Math	Reading	Math
Kindergarten	-1.8	-.67	-.25	-.26	-.15	-.14
1 st Grade	-1.38	-1.24	-.35	-.29	-.25	-.21

Retention Fails to Cure

Natale (1991), executive editor of *Education Digest*, noted, “Retention used to be thought of as education’s strongest medicine—hard to swallow but ultimately healing—but many educators now consider it more a poison than a cure” (p. 30). Rust and Wallace (1993) conducted a four-year study on the effects of retention. Their study took low achieving students, some of whom were retained and some of whom were promoted, and compared their achievement over the course of the four years. The outcome of their study showed retained students to have a slight increase in achievement, however the promoted students showed that same slight increase. This is in line with the results of the study conducted by Hong and Yu (2007).

Policy Makers, Teachers, Administrators and Parents Favor Retention

Despite the abundance of researchers discouraging the use of retention, the favorable attitudes of many teachers, administrators, and parents toward retention may be partially understood by examining the source of their information (Byrnes, 1989). Most educators consider how the children in their schools do the following year and possibly

the year after, but do not examine the outcomes of retained children through high school. Moreover, as Shepard and Smith (1990) aptly explain, “Without controlled comparisons, retention looks as if it works, especially if you believe it does.” If retained students display improvement the year following retention, this provides further single-subject, anecdotal evidence supporting the educator’s decision to retain, especially in the absence of comparisons with a similar group of students. Jackson (1975) states that educators who favor the use of grade retention usually claim that it serves two major purposes: (1) to remedy inadequate academic progress and (2) to aid in the development of students who are judged to be emotionally immature. A qualitative study by Anderson and West (1992) which studied parental attitudes towards retention of children who had been held back in school found that every study participant expressed a belief in the necessity of grade level retention, although this did not translate into an endorsement of retention affecting their own family. However, most parents expressed that non-promotion aided the progress of their own child. The retained children generally expressed the same belief (Anderson & West, 1992).

Proponents of Retention

A study in California finds retention beneficial to students.

The existence of research studies that actually show academic gains for students who have been retained does not help to dispel the faith parents and educators have in retaining students who are not meeting grade level standards so they can catch up. One such study conducted by Peterson, DeGracie, and Ayabe (1987) in the state of California used the results of the California Achievement Test (CAT) over a four-year period to

support the claim that retention, with specific remediation, can actually lead to retained students outperforming their promoted peers. Peterson, et al., (1987) analyzed test scores using a multivariate analysis of variance that resulted in significant gains for first, second, and third grade retainees when compared to the CAT scores from the previous year of their promoted scores. Two things to keep in mind as these results are considered is that the retainees had an additional year of instruction and that the first grade retainees lost their advantage by the second and third year of the study. The subtests that were used for the comparison were total reading, language and math. These researchers maintain their position that with the appropriate individualized education plan for remediation, the retained students did indeed benefit from having been retained (Peterson, et al., 1987). It could be conjectured that the gains were not indicative of an actual advantage when you consider that the comparison group that was placed in the next grade level without mastering the curriculum in this study did not have an individualized education plan, nor did they receive any remediation, which, coupled with the extra year of instruction for the retainees, may account for the gap in achievement (Peterson, et al., 1987). The researchers themselves concluded by saying, “Although we failed to find convincing evidence that retention is beneficial, in terms of same-year comparisons, our results do not seem to indicate that retention is harmful academically as other studies have found and for retainees to just be holding their own may be an accomplishment” (Peterson, et. al, 1987, pp. 114). Peterson, et al. (1987), further conjecture that retained youngsters may have fallen further and further behind had they not been retained.

A national study finds retention beneficial to students.

Karweit (1999) conducted a national study of 9,240 first graders that she followed for four years. During that time, 20% of them were retained with half of the retentions occurring in 1st grade. The study took into consideration both math and reading achievement and did comparisons between same age and same grade students (Karweit, 1999). Over the course of the four-year study, the retained students never scored as well as either of the comparison groups; however, the gap got considerably smaller, which Karweit (1999) interpreted to mean the retention had helped the repeating students. According to Karweit (1999), the achievement gap between the low achieving students and the non-retained students started at 1.21 standard deviations and went to .38 standard deviations just one year after retention. After the third year of retention, the gap widened to .55 standard deviations, but was still significantly smaller than where it had started, leading Karweit (1999) to conclude that the children managed to perform at a level closer to that of the promoted group than before the retention, and in that sense, retention seemed to have helped them. One has to wonder if the gap continued to widen in subsequent years.

A study in Baltimore finds retention beneficial to students.

Alexander, Entwisle, and Dauber (2003), conducted a 17-year study in Baltimore beginning in the year 1982. Their study took the entire 1st grade population from 20 randomly selected schools in the Baltimore City Public School system and tracked their achievement from 1st through 7th grade in both reading and math. They followed up with these students again five years later when they were scheduled to graduate from high

school. The students involved in this study were 66% economically disadvantaged, 44% came from single parent families, and 40% of the parents did not have a high school diploma. In this study, students who had been retained were compared to: (1) students who had never been retained, (2) students who had not been retained but had low scores on the California Achievement Test (CAT) for math and reading, and (3) students who had low CAT scores that were within one standard deviation as compared to the retainees when looking at the verbal and quantitative CAT scores.

Alexander, et al., (2003) believed retained students had an advantage over their classmates in terms of chronological age and previous experience with the curriculum. This led to improved performance with respect to their prior status (Alexander, et al., 2003). Repeating the year gives children a second chance to learn skills they failed to master the first time and the gains in test scores suggest they make up at least a part of what they had missed (Alexander, et al., 2003). Annual gains, in most instances, decline over the years, but this is true for all students, not just retainees, which led the authors of this research project to make the claim that the tapering success is not necessarily tied to the practice of retention. Whether this is factual or opinion based is a matter of interpretation. Rather than compare the actual test scores of the retainees and the selected comparison groups, Alexander, et al., (2003) looked specifically at the gains made by each group each year and compared only the gains. All groups of students made some sort of gains over the course of the study. The study combined the gains of the year in which the retained students were actually held back together with the gains made during the repeated year and used that total to compare to the selected comparison groups.

Gains relative to children's standing before being held back were the focus of the study. These two-year versus one-year comparisons may favor repeaters, giving the impression that real progress is made when in fact the repeaters are just holding their own (Alexander, et al., 2003). The fact that retainees are more familiar with the curriculum and school routines, tied with the fact that they are bigger, older and possibly more mature than their classmates and are re-taking a test they have already taken once, may have a significant impact on the gains reported (Alexander, et al., 2003). Still, Alexander, et al., (2003) believe that retention helped the students that were held back to recover and kept them above the level projected for them on the basis of their performance prior to the retention.

Alexander, et al., (2003) go on to say that although retention does not turn failures into academic superstars, or even into average students, it helps them to hang on until they make it to high school. When these researchers went back to follow up with this cohort of students at their scheduled year of graduation, they found that 42% of them had dropped out, with 14% of the dropouts occurring prior to the 10th grade. In addition, another 24% were categorized as non-completers, meaning they left school and either got their GED or came back and got their degree at a later date. This puts nearly two-thirds of the original cohort leaving school at some point with nearly half of them not having a degree as young adults. Although Alexander, et al., (2003) acknowledge the significant impact these data have on the implication that retaining a student increases their chances of becoming a dropout, they question the causality. They propose the dropout is not

necessarily a result of the retention, but instead can be traced to other factors such as family socioeconomic status, family structure, or family stress.

Study in Florida finds retention beneficial to students.

Another study that resulted in an increase in achievement scores in math and reading for students who had been retained was conducted by Galatowitsch in 2007 in Florida. As part of his requirements to obtain his Doctorate in Education, Galatowitsch used the results of the Florida Comprehensive Achievement Test (FCAT) in both math and reading to show that with remediation, students who have been retained actually outperform their peers of similar ability who were placed in the next grade level without mastering the curriculum. The participants in this study were fourth and fifth grade students who had scored a Level 1 in both math and reading on the FCAT and thus had been retained. He compared these retained students to promoted students from two neighboring schools with similar size, demographics, and mobility rate. The only difference in the three schools was that one had a strictly adhered to retention policy and remediation plan while the two comparison schools used social promotion coupled with a remediation plan (Glatowitsch, 2007). The FCAT scores of the retained students were compared to the previous year's scores for the promoted students so that it was a same test comparison. With the additional year of instruction and remediation, both the fourth and fifth grade comparison groups of retained students outperformed their peers that had been placed in the next grade level without mastering the curriculum during the first year of retention and continued to outperform them in the subsequent two years of the study. Thus Glatowitsch (2007) concluded his study by stating that contrary to the existing

research that depicts retention as harmful to students, *with the appropriate remediation*, retention can actually benefit students and give them an advantage over their placed in the next grade level without mastering the curriculum peers in both math and reading.

In Summary

This chapter reviews the literature on the subject of grade retention and grade placement, taking great care to include the studies that are most frequently cited in dissertations, education journals, and books on the topic, as well as presenting both sides of the on-going debate as to whether or not students benefit more from being held back and given the “gift of time” to catch up or being passed on and provided with targeted, academic support. Great care was taken to select studies that spanned the life of the American education system as well as those that were supported by experts on the topic as being statistically reliable. Those experts, such as Alexander, et al., (2003), Jackson (1975), Jimerson (2006), Holmes and Matthews (1984), and Shepard and Smith (1990) have been studying this topic for over half a century in many cases. In spite of the extensive body of research that exists, the body of evidence to support retention over grade placement, or vice versa is weak at best with the most frequent finding being that repeaters and non-repeaters do not differ significantly in their achievement levels (Holmes & Matthews, 1984; Jimerson, 1999; Shepard & Smith, 1989). Still, with over three million students being retained in the United States each year at an estimated cost of ten billion dollars, it is evident that further research is needed (Jimerson, 2001).

Chapter Three: Methodology

Context of the Study

The methodology chapter includes the purpose of the study, the research questions, the background of the research, a description of the setting and participants, instrumentation, the procedure and time frame, an overview of the research design and analysis of data, limitations of the study, and a summary. The research questions which will guide the study were provided to put into context the methodology framework. The target population for the research study is described in the participants section and the selection of participants and the process for selecting the sample are also discussed. A definition and description of tests used, description of indicators of validity and reliability, and reliability scores for the scores collected will be addressed in the instrumentation section. The data collection process is reported in the section on procedures and time frame. The data analysis section described the statistical analyses for each research question, the assumptions met for the analyses, and the hypotheses for each research question. Finally, a summary of the methodology chapter is included.

Permission will be obtained from the school district's department of Research and Accountability for using grade retention, grade placement, demographic, and longitudinal assessment data. Permission to conduct the research will also be obtained from the University of Houston Division of Research Institutional Review Board.

Purpose of the Study

The purpose of this study is to draw a comparison between the impact of grade retention and grade placement on student achievement in both math and reading over the course of a five-year period as measured by final report card grades and performance on

state-mandated assessments for students who fail to meet promotion standards. The comparison will be drawn amongst two cohorts of students in grades three, four, and five. The first cohort will consist of students in all three grades that were retained in the 2006-2007 school year due to a failing final report card grade in either math or reading or due to failure to meet minimum expectations on the state-mandated assessment in either math or reading. The second cohort will consist of students in all three grades who failed to meet the promotion standards mentioned above and were placed in the next grade level rather than being retained. Other comparison points that will be examined to see if any trends exist are gender, ethnicity, socioeconomic status, and attendance rates.

Background of the Research

This research will focus on math and reading achievement levels as measured by final report card grades and performance on state-mandated assessments for students who fail to meet the promotion standards set forth by the district in accordance with state and federal guidelines. The promotion standards established by this district are based on mastery of the curriculum. Expectations and standards for promotion are established for each grade level, subject, and course and are determined as follows:

1. Course assignments and unit evaluation are used to determine student grades in a subject and an average of 70 or higher is considered a passing grade.
2. Mastery of the skills necessary for success at the next level shall be validated by assessments that may either be incorporated into unit or final examinations or may be administered

separately. Mastery of at least 70 percent of the objectives shall be required (School Board Policy, 2011).

In grades 1 through 5, promotion to the next grade level is based on an overall average of 70 on a scale of 100 based on subject grade-level standards (essential knowledge and skills) for all core subject areas (reading, language, mathematics, science, and social studies) and a grade of 70 or above in each of the following subject areas: reading, language, and mathematics. In grades 6 through 8, promotion to the next grade level is based on an overall average of 70 on a scale of 100 based on subject grade-level standards (essential knowledge and skills) for all courses taken during the current school year. The overall average is derived by averaging the final numerical score for all courses taken, including physical education and electives. In addition, a student must attain an average of 70 or above in three of the four core academic subject areas: language arts, mathematics, science, and social studies. Grade-level advancement for students in grades 9 through 12 are earned by course credits (School Board Policy, 2011).

If a student in grades 3 through 8 fails to demonstrate proficiency on a state-mandated assessment, the student shall be provided accelerated instruction in accordance with Texas state law (Texas Education Agency, 2010). In addition to local standards for mastery and promotion, students in grades 5 and 8 must meet the passing standard on the state-mandated assessment in math and reading in order to be promoted to the next grade as specified by the Texas Student Success Initiative (SSI). SSI for reading and math was enacted by the 76th Texas Legislature in 1999 and modified by the 81st Texas Legislature in 2009 (TEA, 2008a). A grade placement committee (GPC), consisting of an

administrator, a teacher, and a parent or guardian of the student, may choose to advance the student to the next grade level if the committee feels the student is likely to perform at grade level after additional instruction is provided. GPC decisions often result in grade placement rather than grade retention. The goal of SSI is to ensure that all students receive the instruction and support they need to be academically successful in reading and mathematics. The success of the GPC decision depends greatly on schools, parents, and community members working in partnership to meet individual student needs.

Description of the Setting and Participants

This study will be limited to one suburban school district consisting of 53 schools that serve a total of just over 60,000 students. The district is spread over 181 square miles of land in a rapidly growing suburb in southeast Texas and is well-known for providing high-quality education for its students. The district employs 7,655 staff members, 3,868 of whom are teachers. There is a very low turn-over rate for the teaching staff with 44% having over 10 years of experience and 22% having obtained an advanced degree. The district has received a rating of Recognized from the Texas Education Agency for the past four years in a row. A Recognized rating is the second highest state rating and means that over 80% of students have met expectations on all state assessments, including the sub-populations of Hispanic, African American, limited-English proficient, and low-socioeconomic students. The demographics for the district in 2011, the last year of the study, are shown in Table 2.

Table 2

District Demographics as Reported by TEA 2010-2011

Total Students (20'10-'11)	60,803
White	43.06%
Hispanic	34.26%
African-American	9.35%
Asian/Pacific Islander	10.63%
Native American	0.26%
At-Risk	33.70%
Low Income	30.11%
Limited English Proficient	13.65%
in Special Education	7.91%
in Career Technology Education	15.06%
in Bilingual/English as a Second Language	13.21%
in Gifted/Talented	6.22%
in Title I programs	29.79%

Participants in the Study

Participants in the study attended elementary and middle schools across the district at the beginning of the study with some of the fifth grade students beginning high school by the end of the study. All students who were selected for the study remained in the district for the entire course of the study. It is possible that during the first four years of the study, the number of retained students for third and fifth grade may have been impacted by the requirements of SSI, which called for students who did not meet minimum expectations on the math and reading Texas Assessment of Knowledge and Skills (TAKS) to be provided with additional instruction and then participate in two additional attempts to pass the exam. The SSI requirement was removed for third grade in the last

year of the study, 2010-2011, but remained in place for fifth and eighth grade for the duration.

The first cohort of students whose performance in math and reading will be examined are the students who failed to meet promotion standards during the 2006-2007 school year and were made to repeat either third, fourth, or fifth grade for the 2007-2008 school year. Only those students who remained in the district for the duration of the study will be included. The number of students retained district-wide in the 2006-2007 school year is shown in Table 3.

Table 3

Grade Level Retention across District 2006-2007

Grade	Retained	Total Students	Percentage
3 rd	71	3,820	1.9%
4 th	55	3,784	1.5%
5 th	27	3,763	0.7%
Totals	153	11,367	1.35%

Students who left the district during the five-year study will not be included in the study, thus lowering the number of participants in the retained group from 71 to 46 in third grade, 55 to 27 in fourth grade, and 27 to 16 in 5th grade. Up to half of the retained students left the district.

The second cohort of students whose performance in math and reading will be examined are those students who failed to meet promotion standards during the 2006-2007 school year and were placed in the next grade level, fourth, fifth, or sixth grade for the 2007-2008 school year. The cohort of the placed student consists of 40 third graders, 66 fourth graders, and 27 fifth graders. Table 4 summarizes the numbers of students included in the study by grade level as well as whether or not they were retained or placed at the end of the 2006-2007 school year.

Table 4

Retained and Placed Student Group in 2006-2007

Grade Level in '06-'07		Frequency	Percent
3	Placed	41	47.7
	Retained	45	52.3
	Total	86	100.0
4	Placed	67	72.0
	Retained	26	28.0
	Total	93	100.0
5	Placed	33	76.7
	Retained	10	23.3
	Total	43	100.0

The rate of retention for the district is lower than that of the state of Texas with only 3% of all students in grades K through 12 being retained by the district in 2006-2007 while 4.8% of the same grade levels were retained across the state. Sub-populations that achieve higher performance on state assessments over all are slightly higher in the district when compared to the state with 53.40% white, and 9.0% Asian in the district and only 35.70% white, 3.3% Asian in the state. Conversely, sub-populations that achieve lower

performance on state assessments are slightly higher in the state with 46.30% Hispanics, 14.40% African Americans, 16.01% limited English proficient, and 10.0% special education students compared to the districts 28.00% Hispanics, 9.30% African Americans, 12.10% limited English proficient, and 9.60% special education students respectively (Texas Education Agency, 2011). This data is summarized in Table 5.

Table 5

Comparison of District and State Demographics '06-'07

Sub Populations	District	State
White	53.40%	35.70%
African American	9.30%	14.40%
Asian	9.00%	3.30%
Hispanic	28.00%	46.30%
Limited English Proficient	12.10%	16.01%
Special Education	9.60%	10.00%
Economically Disadvantaged	24.30%	55.50%

Summary of Retention Data for the State

In the '06-'07 school year, 4.8 % (202,099) of students in kindergarten through Grade 12 were retained (Table 6). Males at most grade levels were more likely than females to be retained. In '06-'07, the retention rate for females was 3.9%, and the rate for males was 5.5%. Male students made up 59.7% of all students retained (Texas Education Agency, 2008a).

In '06-'07, retention rates for African American and Hispanic students were over twice that for White students. In the '06-'07 school year, 2.8% of White students were retained in grade, compared to 6.1% for both African American and Hispanic students as shown in Table 6 (Texas Education Agency, 2008b).

Table 6

Grade Level Retention Student Characteristic Texas Public Schools 2006-2007

Group	All students	Retained	Rate (%)
African American	602,474	36,843	6.1
Asian/Pacific Islander	140,505	2,398	1.7
Hispanic	1,942,577	119,028	6.1
Native American	14,317	620	4.3
White	1,548,461	43,210	2.8
Economically disadvantaged	2,247,672	132,725	5.9
Female	2,071,690	81,397	3.9
Male	2,176,644	120,702	5.5
Grades K-6	2,388,767	73,896	3.1
Grades 7-12	1,859,567	128,203	6.9
State	4,248,334	202,099	4.8

Instrumentation

Quantitative data obtained from grades 3 through 5 TAKS tests from year to year for reading and math were used in the study. Although the majority of the test data was for English TAKS tests, some of the students were served in a bilingual program and tested in Spanish. The scores from the Spanish tests were included in the study. The number of items and the passing standard on the English and Spanish tests were equivalent.

The TAKS test was the state assessment instrument in Texas from 2003 through the spring of 2011. TAKS measures student achievement in reading, writing, math, social studies, and science for selected grades. For the purposes of this study, only the math and reading scores will be examined. Texas educators included in the process of developing the TAKS assessment were classroom teachers, skill specialists, campus and district administrators, and education service center specialists who served on committees to develop these state examinations. The committee used the Texas Essential Knowledge and Skills (TEKS), the state's curriculum, to determine test objectives for each grade level and subject area. The Texas Education Agency (TEA) works to improve the examinations yearly by incrementally increasing the level of rigor of the questions. This causes the number of questions and level of difficulty to vary from year-to-year and from grade-level to grade-level (TEA, 2009).

The performance standards were established by a group of educational testing experts. The process for selecting performance standards included using an appropriate methodology, such as running statistical analyses, involving stakeholders, linking standards to the TEKS, presenting all the facts to stakeholders, eliciting open discussion

with stakeholders, documenting the process, and sharing the intended and unintended impact of the performance standards on students. Inferences about a student's knowledge of TEKS were made using the state examination results. TEA requires adherence to specific procedures for test administration to ensure validity, reliability, and security of the assessments (TEA, 2009).

Quantitative data for this study was also obtained from the district's student information system pertaining to student report card grades. The district's grading policy requires classroom teachers to assign a grade that reflects a student's relative mastery of an assignment using a scale of 0 to 100. Use of report card grades as part of this study may prove to be unreliable due to the lack of standardization in the assignments and examinations administered to arrive at the grades as well as the differences in the interpretation from teacher to teacher and campus to campus as to what constitutes work that is worthy of an A (90-100) versus work that only merits a C (70-79).

Procedures and Time Frame

A proposal was submitted to The University of Houston Division of Research Institutional Review Board for permission to proceed with the study (see Appendix A). Once approved by the board, an application for approval of external research was submitted to the district's Department of Planning, Research, and Evaluation (see Appendix B). The application for approval of external research included the purpose of the study, the research questions, a description of the methodology, a description of the benefits to the district, and a confidentiality agreement.

Once approvals from the university and the district were obtained, the data were collected using the district's student information data base as well as the district's state assessment data bank. Excel spreadsheets were generated for each year of the study, from 2007 through 2011 and for each grade level for the retained students and for the placed students. The spreadsheets contained the following information for each student: a student identifier, date of birth, gender, ethnicity, socioeconomic status, campus number, TAKS percent correct for reading, TAKS percent correct for math, final report card grade for reading, final report card grade for math, and absence rate. A coding system was used to mask the identity of the data subjects and the district. The excel spreadsheets obtained from the district were imported into SPSS 20.0 to draw comparisons.

The entire process of seeking and obtaining the required permissions, collecting the data, and using SPSS 20.0 to analyze the data was completed by early spring 2012.

Overview of Methodology and Analysis of Data

SPSS 20.0 was used to analyze the data for this quantitative research. Descriptive analyses consisted of identifying estimated marginal means, standard deviations, frequencies, and percentages to summarize the data. A *univariate analysis of variance* (ANOVA) was used to compare data. Once the cohorts of students were identified and their demographic and achievement data in math and reading were established, analyses were conducted to address each of the research questions. In order to describe the characteristics and distribution of the population of the sample of participants, the frequencies feature in SPSS 20.0 was used (Creighton, 2001).

Estimated marginal means is a term seen in SPSS referring to un-weighted means (SPSS, 2010). This is important to this study because comparisons are being made between the means of unequal sample sizes. Using estimated marginal means allowed each mean to be considered in proportion to its sample size. Use of the estimated marginal means determined whether or not statistically significant differences in the achievement levels in both reading and math for the students who were retained at the end of the 2006-2007 school year and the students of similar ability levels who were placed at the end of the 2006-2007 school year existed.

According to Wiersma and Jurs (2009), a univariate analysis of variance is a statistical technique to determine the basis of one dependent measure, where samples come from populations with equal means and the interpretations of results are complicated because of the tendency to create artificial variables from combinations of the dependent variables. ANOVA procedures are quite robust in respect to violation of normally distributed data and homogeneity of variance (SPSS, 2010).

A *Levene's Test for Equality of Variances* was used to test the homogeneity of variance assumption. When the *P*-value is less than .05, this indicates that variances are heterogeneous, which violates a key assumption of the ANOVA. When the *P*-value is greater than .05, this indicates that homogeneity of variance does exist, thus increasing the reliability of the data (Wiersma & Jurs, 2009).

Limitations of the Study

Limitations to this study include the lack of consideration of the quality of first time instruction, the levels of experience and effectiveness of the teachers of the student group studied over the five-year time frame, the home environment and parental support of these students, and the variety in the interventions that were provided for the students. In addition, the size of the study is small, as only one school district's data is considered, and only the students who remained in that district for the full five-years of the study have been included. Another possible limitation will be the lack of ability to measure the quality of the intervention programs provided for the students from school to school. The accessibility of this additional data would make for a stronger study in determining whether retaining a student or placing him in the next grade level with interventions has a greater impact on his achievement in math and reading.

Summary

Chapter Three included the purpose of the study, the research questions, the background of the research, a description of the setting and participants, instrumentation, the procedures and time frame, an overview of the methodology and analysis of data, limitations of the study, and a summary. Each step of the methodology will be further explained in Chapter Four where the findings will be presented and analyzed.

Chapter Four: Findings

Descriptive Statistics

The purpose of this study was to investigate and compare reading and mathematics achievement from grades 3 through 5 on report card grades and state assessments between two groups of similarly performing students, those that had been retained at the end of the 2006-2007 school year and those that were placed in the next grade level at the end of the 2006-2007 school year, despite not having met promotion standards. Specifically, the study was designed to determine: (1) how report card grades for math and reading of the retained students compared to those of the placed students of similar achievement levels on five different time points, years 2007 through 2011, (2) how the achievement levels on state-mandated assessments for reading and math of the retained students compared to those of the placed students of similar achievement levels on five different time points, years 2007 through 2011, (3) how absence rates were distributed amongst the retained and placed groups of students and whether or not the absence rate impacted the achievement of the students in math and reading as measured by performance on state assessments on five different time points, years 2007 through 2011, and (4) how the factors of gender, ethnicity, and socioeconomic status were distributed among the retained and placed groups of students and whether or not those factors impacted the achievement of the students in math and reading as measured by performance on state assessments on five different time points, years 2007-2011.

Statistical analyses were used to measure data from grades 3 through 5 on TAKS reading and math percent correct scores as well as final report card grades, also in reading

and math, for all students who failed to meet promotion standards at the end of the 2006-2007 school year and remained in the district for the duration of the five-year study.

Students who left the district during the course of the study were withdrawn from the study, which explains why the number of retained students in grades 3 through 5 for this district, 153 students as reported by the Texas Education Agency (TEA) at the end of the 2006-2007 school year, does not match the number of retained students included in the study, only 89.

Testing the Research Questions

Research question one.

Question one asked how report card grades for math and reading of the retained students compared to those of the placed students of similar achievement levels over the course of the five-year study for grades 3 through 5. A descriptive statistics analysis was conducted on final report card grades for both reading and math to obtain a mean score for the students in the retained cohort as well as the students in the placed cohort for each year of the study, 2007, 2008, 2009, 2010, and 2011. The students were kept in their original cohorts of having been either retained or placed at the end of the 2006-2007 school year throughout the course of the study, even though their grade level changed from year to year. Their cohort membership as either retained or placed stayed the same based on the end of the 2006-2007 school year, without regard to whether or not they met promotion standards in subsequent years. A split file was used both to maintain the category of initial grade level as well as the initial cohort membership of either placed or retained.

Appendix C shows each of the Tests of Between Subjects Effects Tables for report card grade in math and reading by year for easy reference. Tests of Between Subjects Effects Tables show the effect size of the data sample and whether or not the differences in the means between the retained and placed groups are significant based on the *P*-value. If the *P*-value is $<.05$, then there is significance in the differences in the means between the two cohorts. The partial eta squared score is used to measure effect size with < 0.4 indicating a small effect size, between 0.5 and 0.6 indicating a moderate effect size, and >0.6 indicating a large effect size. The majority of the analyses in this study resulted in a small effect size, indicating that the standardized difference in the means of the retained and the placed groups was small.

Descriptive statistics final report card reading and math '06-'07.

The descriptive statistics calculated for the final reading grade and the final math grade for all participants in the study split by both grade level and retention or placement status at the end of the initial year of the study indicate that while the mean score for both cohorts is low, between 67.87 at the lowest and 75.55 at the highest, the placed students had slightly higher scores in both reading and math across all grade levels (see Tables 7 & 8).

Table 7

Descriptive Statistics Final Reading Report Card Grade '06-'07

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
3	Placed '06-'07 RD Final Grade	41	51	87	68.44	8.397
	Retained '06-'07 RD Final Grade	45	51	88	67.89	8.579
4	Placed '06-'07 RD Final Grade	67	62	88	72.28	6.326
	Retained '06-'07 RD Final Grade	26	58	81	69.88	6.160
5	Placed '06-'07 RD Final Grade	33	63	87	74.82	6.908
	Retained '06-'07 RD Final Grade	10	57	80	69.00	6.848

Table 8

Descriptive Statistics Final Math Report Card Grade '06-'07

'06-'07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std.
							Deviation
3	Placed	'06-'07 MA Final Grade	41	59	86	70.12	7.363
	Retained	'06-'07 MA Final Grade	45	52	82	67.87	7.294
4	Placed	'06-'07 MA Final Grade	67	53	89	70.33	7.033
	Retained	'06-'07 MA Final Grade	26	51	84	68.00	6.499
5	Placed	'06-'07 MA Final Grade	33	60	89	75.55	7.866
	Retained	'06-'07 MA Final Grade	10	65	73	69.30	2.791

Univariate analysis of variance final reading report card grade '06-'07.

A univariate analysis of variance was conducted with the final reading report card grade in '06-'07 to test effect size between the retained and placed cohorts which resulted in a score of .045 eta squared and a *P*-value of .001. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table C1 of Appendix C. The estimated marginal means for the placed students was 71.76 with a standard error of .64 as compared to the retained

students with an estimated marginal means of 68.36 with a standard error of .81 as show in Table 9. In this initial year of the study, the placed students had a higher estimated marginal mean score in reading report card grades than the placed students.

Table 9

Estimated Marginal Means Final Reading Grade '06-'07

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	71.759	.643	70.491	73.027
Retained	68.364	.814	66.759	69.969

A Levene's test of equality of error variances was conducted with the final reading grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .701, which indicates equality of variance does exist because the *P*-value is greater than .05.

Univariate analysis of variance final math report card grade '06-'07.

A univariate analysis of variance was conducted with the final math report card grade in '06-'07 to test effect size between the retained and placed cohorts which resulted in a score of .067 eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as shown in Table C2 of Appendix C. The estimated marginal means for the placed students was 71.48 with a standard error of .62 as compared to the retained students with an estimated marginal means of 67.40 with a standard error of .79 as shown

in Table 10. In this initial year of the study, the placed students had a higher estimated marginal mean score in math report card grades than the placed students.

Table 10

Estimated Marginal Means Final Math Grades '06-'07

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	71.489	.626	70.255	72.724
Retained	67.409	.793	65.846	68.972

A Levene's test of equality of error variances was conducted with the final math grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .120, which indicates equality of variance did exist because the *P*-value was greater than .05.

Descriptive statistics final report card reading and math '07-'08.

The descriptive statistics calculated for the final reading grade and the final math grade for all participants in the study split by both grade level and retention or placement status at the end of the second year of the study, '07-'08, indicate that while the mean score for both cohorts has increased slightly, between 73 at the lowest and 84 at the highest, the retained students had slightly higher scores in both reading and math across all grade levels (see Tables 11 & 12).

Table 11

Descriptive Statistics Final Report Card Grade '07-'08

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
3	Placed '07-'08 RD Final Grade	41	61	95	75.63	6.895
	Retained '07-'08 RD Final Grade	45	55	93	78.38	9.435
4	Placed '07-'08 RD Final Grade	67	63	90	76.15	5.682
	Retained '07-'08 RD Final Grade	26	71	90	80.23	5.202
5	Placed '07-'08 RD Final Grade	33	58	92	78.15	7.714
	Retained '07-'08 RD Final Grade	10	76	87	82.70	3.889

Table 12

Descriptive Statistics Final Math Report Card Grades '07-'08

'06-'07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
3	Placed	'07-'08 MA Final Grade	41	55	87	73.46	7.308
	Retained	'07-'08 MA Final Grade	45	69	94	83.02	5.516
4	Placed	'07-'08 MA Final Grade	67	62	88	74.24	7.284
	Retained	'07-'08 MA Final Grade	26	68	94	82.92	7.076
5	Placed	'07-'08 MA Final Grade	33	52	94	73.70	8.798
	Retained	'07-'08 MA Final Grade	10	77	90	84.40	4.351

Univariate analysis of variance final reading report card grade '07-'08.

A univariate analysis of variance was conducted with the final reading report card grade in '07-'08 to test effect size between the retained and placed cohorts which resulted in a score of .034 eta squared with a significance of .005. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table C3 of Appendix C. The estimated marginal means for the placed students was 74.47 with a standard error of .593 as compared to the retained students with an estimated marginal means of 79.17 with a standard error of .750

as shown in Table 13. In this second year of the study, the retained students scored higher than the placed students on their final reading report card grades.

Table 13

Estimated Marginal Means Final Reading Report Card Grades '07-'08

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	76.468	.593	75.300	77.636
Retained	79.170	.750	77.692	80.649

A Levene's test of equality of error variances was conducted with the final reading grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .131, which indicates equality of variance did exist because the *P*-value was greater than .05

Univariate analysis of variance final math report card grade '07-'08.

A univariate analysis of variance was conducted with the final math report card grade in '07-'08 to test effect size between the retained and placed cohorts which resulted in a score of .265 eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table C4 of Appendix C. The estimated marginal means for the placed students was 73.89 with a standard error of .599 as compared to the retained students with an estimated marginal means of 82.64 with a standard error of .758 as shown in Table 14. In this second year of the study, the retained students scored higher than the placed students on their final math report card grades.

Table 14

Estimated Marginal Means Final Math Report Card Grades '07-'08

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	73.887	.599	72.706	75.067
Retained	82.636	.758	81.142	84.130

A Levene's test of equality of error variances was conducted with the final math grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .014, which indicates equality of variance did not exist in this instance because the *P*-value was less than .05. The lack of equality of variance is most likely due to extremely low or extremely high scores that lead to a mean that is not truly representative of the group.

Descriptive statistics final report card reading and math '08-'09.

The descriptive statistics calculated for the final reading grade and the final math grade for all participants in the study split by both grade level and retention or placement status at the end of the third year of the study, '08-'09, indicate that while the mean score for both cohorts has, again increased, between 75 at the lowest and 96 at the highest, the retained students continue to achieve higher scores in both reading and math across all grade levels (see Tables 15 & 16).

Table 15

Descriptive Statistics Final Report Card Grades '08-'09

'06-'07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
			Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed	'08-'09 RD Final Grade	40	58	85	76.35	5.749
	Retained	'08-'09 RD Final Grade	45	71	92	79.96	4.527
4	Placed	'08-'09 RD Final Grade	67	52	93	77.43	8.901
	Retained	'08-'09 RD Final Grade	26	69	96	81.42	7.145
5	Placed	'08-'09 RD Final Grade	33	50	91	74.58	9.760
	Retained	'08-'09 RD Final Grade	10	70	91	82.80	6.546

Table 16

Descriptive Statistics Final Math Report Card Grades '08-'09

'06-'07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
			Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed	'08-'09 MA Final Grade	41	64	88	76.51	5.679
	Retained	'08-'09 MA Final Grade	45	70	90	80.71	4.561
4	Placed	'08-'09 MA Final Grade	67	50	92	76.58	10.204
	Retained	'08-'09 MA Final Grade	26	67	93	82.04	7.665
5	Placed	'08-'09 MA Final Grade	33	59	95	74.91	7.409
	Retained	'08-'09 MA Final Grade	10	68	88	78.20	6.779

Univariate analysis of variance final reading report card grade '08-'09.

A univariate analysis of variance was conducted with the final reading report card grade in '08-'09 to test effect size between the retained and placed cohorts which resulted in a score of .062 eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table C5 of Appendix C. The estimated marginal means for the placed students was 76.45 with a standard error of .614 as compared to the

retained students with an estimated marginal means of 80.42 with a standard error of .808 as shown in Table 17. In this third year of the study, the retained students again, achieved higher mean scores on the final reading report card grade than did the placed students.

Table 17

Estimated Marginal Means Final Reading Report Card Grades '08-'09

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	76.450	.641	75.188	77.712
Retained	80.420	.808	78.828	82.013

A Levene's test of equality of error variances was conducted with the final reading grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .011, which indicates equality of variance did not exist in this instance because the *P*-value was less than .05.

Univariate analysis of variance final math report card grade '08-'09.

A univariate analysis of variance was conducted with the final math report card grade in '08-'09 to test effect size between the retained and placed cohorts which resulted in a score of .051 eta squared with a significance of .001. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table C6 of Appendix C. The estimated marginal means for the placed students was 76.18 with a standard error of .665 as compared to the retained students with an estimated marginal means of 79.92 with a standard error of .842

as shown in Table 18. In this third year of the study, the retained students had a higher mean on their final math report card grade than the placed students.

Table 18

Estimated Marginal Means Final Math Report Card Grades '08-'09

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	76.170	.665	74.860	77.481
Retained	79.920	.842	78.262	81.579

A Levene's test of equality of error variances was conducted with the final math grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .094, which indicates equality of variance did exist because the *P*-value was greater than .05.

Descriptive statistics final report card reading and math '09-'10.

The descriptive statistics calculated for the final reading grade and the final math grade for all participants in the study split by both grade level and retention or placement status at the end of the fourth year of the study, '09-'10, indicate that while the mean score for both cohorts has decreased slightly, between 76.10 at the lowest and 84.70 at the highest, the retained students continued to achieve higher scores in both reading and math across most grade levels (see Tables 19 & 20).

Table 19

Descriptive Statistics Final Reading Report Card Grades '09-'10

'06-'07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
3	Placed	'09-'10 RD Final Grade	41	64	91	80.54	6.581
	Retained	'09-'10 RD Final Grade	45	62	90	77.98	6.927
4	Placed	'09-'10 RD Final Grade	67	50	93	77.06	7.812
	Retained	'09-'10 RD Final Grade	26	62	99	79.35	9.736
5	Placed	'09-'10 RD Final Grade	33	58	95	78.48	8.178
	Retained	'09-'10 RD Final Grade	10	70	93	84.70	6.219

Table 20

Descriptive Statistics Final Math Report Card Grades '09-'10

'06-'07	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std.
Grade							Deviation
3	Placed	'09-'10 MA Final Grade	41	60	93	76.10	8.336
	Retained	'09-'10 MA Final Grade	45	67	93	80.18	5.997
4	Placed	'09-'10 MA Final Grade	67	53	94	77.12	8.508
	Retained	'09-'10 MA Final Grade	26	62	87	76.23	6.965
5	Placed	'09-'10 MA Final Grade	33	53	93	76.39	9.287
	Retained	'09-'10 MA Final Grade	10	75	87	80.60	4.088

Univariate analysis of variance final reading report card grade '09-'10.

A univariate analysis of variance was conducted with the final reading report card grade in '09-'10 to test effect size between the retained and placed cohorts which resulted in a score of .000 eta squared with a significance of .796. This indicates a small effect size for group membership and did not meet the standard of statistical significance because the *P*-value was not <.05 as shown in Table C7 of Appendix C. The estimated marginal means for the placed students was 78.40 with a standard error of .663 as compared to the retained students with an estimated marginal means of 78.68 with a

standard error of .840 as shown in Table 21. During the fourth year of the study, the retained students lost the advantage they had over the placed students with regard to final report card grades in reading.

Table 21

Estimated Marginal Means Final Reading Report Card Grades '09-'10

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	78.404	.663	77.097	79.711
Retained	78.682	.840	77.027	80.336

A Levene's test of equality of error variances was conducted with the final reading grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .278, which indicates equality of variance did exist because the *P*-value was greater than .05.

Univariate analysis of variance final math report card grade '09-'10.

A univariate analysis of variance was conducted with the final math report card grade in '09-'10 to test effect size between the retained and placed cohorts which resulted in a score of .020 eta squared with a significance of .034. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table C8 of Appendix C. The estimated marginal means for the placed students was 76.65 with a standard error of .665 as compared to the retained students with an estimated marginal means of 78.90 with a standard error of .829 as shown in Table 22. Although the retained students continue to score higher than the placed students, the difference between the mean scores has narrowed to only 2.25.

Table 22

Estimated Marginal Means Final Math Report Card Grades '09-'10

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	76.652	.655	75.361	77.944
Retained	78.909	.829	77.275	80.543

A Levene's test of equality of error variances was conducted with the final math grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .094, which indicates equality of variance did exist because the *P*-value was greater than .05.

Descriptive statistics final report card reading and math '10-'11.

The descriptive statistics calculated for the final reading grade and the final math grade for all participants in the study split by both grade level and retention or placement status at the end of the fifth and final year of the study, '10-'11, indicate that while the mean score for both cohorts has decreased slightly, between 67 at the lowest and 80 at the highest, the retained students continue to achieve only slightly higher scores in reading and nearly equivalent scores in math across most grade levels (see Tables 23 & 24).

Table 23

Descriptive Statistics Final Reading Report Card Grades '10-'11

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
		Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed	'10-'11 RD Final Grade	41	47	93	78.44
	Retained	'10-'11 RD Final Grade	45	60	93	79.38
4	Placed	'10-'11 RD Final Grade	67	26	90	76.16
	Retained	'10-'11 RD Final Grade	26	54	95	78.00
5	Placed	'10-'11 RD Final Grade	32	26	88	72.06
	Retained	'10-'11 RD Final Grade	10	64	92	81.90

Table 24

Descriptive Statistics Final Math Report Card Grades '10-'11

'06-'07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
3	Placed	'10-'11 MA Final Grade	41	61	91	78.27	6.768
	Retained	'10-'11 MA Final Grade	45	57	95	77.84	7.580
4	Placed	'10-'11 MA Final Grade	67	29	97	77.24	10.832
	Retained	'10-'11 MA Final Grade	26	48	93	76.35	11.056
5	Placed	'10-'11 MA Final Grade	32	15	81	67.59	16.098
	Retained	'10-'11 MA Final Grade	10	50	90	80.30	11.786

Univariate analysis of variance final reading report card grade '10-'11.

A univariate analysis of variance was conducted with the final reading report card grade in '10-'11 to test effect size between the retained and placed cohorts which resulted in a score of .011 eta squared with a significance of .109. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table C9 of Appendix C. The estimated marginal means for the placed students was 75.89 with a standard error of .885 as compared to the

retained students with an estimated marginal means of 78.18 with a standard error of 1.116 as shown in Table 25. In this final year of the study, the retained students continue to have a higher mean on their final reading report card grades than the placed students.

Table 25

Estimated Marginal Means Final Reading Report Card Grades '10-'11

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	75.893	.885	74.149	77.636
Retained	78.182	1.116	75.983	80.381

A Levene's test of equality of error variances was conducted with the final reading grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .608, which indicates equality of variance did exist because the *P*-value was greater than .05.

Univariate analysis of variance final math report card grade '10-'11.

A univariate analysis of variance was conducted with the final math report card grade in '10-'11 to test effect size between the retained and placed cohorts which resulted in a score of .002 eta squared with a significance of .505. This indicates a small effect size for group membership and does not meet the standard of statistical significance because the *P*-value is not <.05 as shown in Table C10 of Appendix C. The estimated marginal means for the placed students was 75.33 with a standard error of .967 as compared to the retained students with an estimated marginal means of 76.37 with a standard error of 1.22 as shown in Table 26. Although the retained students continue to have a higher mean score on the final math report card grade than the placed students, the

difference has narrowed to only 1.04. It could be conjectured that the longer the study is conducted, the difference between the mean scores of the retained students and the placed students could dwindle down to nothing.

Table 26

Estimated Marginal Means Final Math Report Card Grades '10-'11

RetainedorPlacedGroup	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	75.336	.967	73.431	77.240
Retained	76.375	1.219	73.973	78.777

A Levene's test of equality of error variances was conducted with the final math grades to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .834, which indicates equality of variance did exist because the *P*-value was greater than .05.

Summary of findings research question one.

Examination of the means and standard deviations revealed that the retained students showed higher mean scores in each of the five-years of the study in both math and reading on their final report card grades with the exception of the first year. It could be conjectured that the first year scores would likely always be lower for the retained students. Their lower report card grade most likely contributed to the decision to retain rather than place these students and the slightly higher grade of the placed students likely contributed to the decision to place them rather than retain them. The advantage achieved by the retained students over the placed students in the second and third years of

the study decreased from ten percentage points to only two percentage points in reading and one percentage point in math by the fourth and fifth years of the study.

Based on the theoretical framework and review of literature, a statistically significant difference between the two groups of retained and placed cohorts with the placed students performing at a higher level over time than the retained students was expected. However, the results of the statistical analyses indicate that retained students scored higher on report card grades in both math and reading after having been retained during the first year of the study. Appendix C shows the Test of Between Subjects Effects results for final report card grades for reading and math by year for easy reference. These results reveal that while retaining a child appears to result in a benefit to the child, the advantage gained over the similarly-achieving child was all but lost by the fifth-year of the study in both reading and math. This supports the research that contends there is no real benefit to retaining students who are struggling (Holmes & Mathews, 1984, Jackson, 1975, and Jimerson, 2001).

Research question two.

Question two asked how the achievement levels on state-mandated assessments for reading and math of the retained students compared to those of the placed students of similar achievement levels on five different time points, years 2007-2011. A one-way ANOVA test was conducted to determine if there was a statistically significant difference between the mean scores of the percent of items correct on the TAKS reading and math tests for the students in the retained cohort versus the students in the placed cohort over the course of the five-year study. The decision was made to use a one-way ANOVA

based on the fact that ANOVA procedures are quite robust in respect to violation of normally distributed data and homogeneity of variance (SPSS, 2010). Appendix D shows the Test of Between Subjects Effects results for percent of items correct on the TAKS test for reading and math by year for easy reference.

Rate of special education identification for participants.

Students who are retained often are later identified as students in need of special programing (Jimerson, 1998). Although nearly 15% of the participants in the study were later identified as students needing special education programing, they were not excluded from the study. Their performance on the TAKS was calculated by the percent of items correct on the version of TAKS they took. Frequency tables were created using the type of test taken as the dependent variable with grade level, placed, and retained as factors. This revealed that by the second year of data collected for this study, 18 students in third grade, 11 students in fourth grade, and 2 students in fifth grade had been identified as needing special education programing. By the final year of the study, 2010-2011, 33 out of the 222 participants in the study had been identified as needing special education programing. This is evident in the frequency tables included here for the first year of the study, '06-'07 math TAKS type of test taken and the final year of the study, '10-'11 math TAKS type of test taken. The initial and final year of the study were chosen specifically to identify the number of students identified as needing special programing at the beginning of the study, which was zero, as compared to the end of the study, which was 33. TAKSME represents a modified English TAKS test and TAKSAE represents an accommodated English TAKS test, both of which are versions of the TAKS created

specifically for students being served in a special education program (see Tables 27 & 28).

Table 27

Frequency Table TAKS Math Tests Taken '06-'07

'06-'07 Grade		Frequency	Percent	Valid Percent	Cumulative Percent
3	TAKS	57	66.3	66.3	66.3
	TAKSS	29	33.7	33.7	100.0
	Total	86	100.0	100.0	
4	TAKS	76	81.7	81.7	81.7
	TAKSS	17	18.3	18.3	100.0
	Total	93	100.0	100.0	
5	TAKS	40	93.0	93.0	93.0
	TAKSAE	2	4.7	4.7	97.7
	TAKSME	1	2.3	2.3	100.0
	TAKS	43	100.0	100.0	100.0

Table 28

Frequency Table TAKS Math Tests Taken '10-'11

'06-'07 Grade		Frequency	Percent	Valid Percent	Cumulative Percent
3	TAKS	64	74.4	74.4	74.4
	TAKSAE	7	8.1	8.1	82.6
	TAKSME	15	17.4	17.4	100.0
	Total	86	100.0	100.0	
4	TAKS	85	91.4	91.4	91.4
	TAKSAE	3	3.2	3.2	94.6
	TAKSME	5	5.4	5.4	100.0
	Total	93	100.0	100.0	
5	TAKS	40	93.0	93.0	93.0
	TAKSAE	2	4.7	4.7	97.7
	TAKSME	1	2.3	2.3	100.0
	Total	43	100.0	100.0	

Descriptive statistics TAKS reading percent correct '06-'07.

The descriptive statistics calculated for the percent correct on the TAKS reading for all participants in the study split by both grade level and retention or placement status at the end of the initial year of the study indicate that while the mean score for both cohorts is low, between 62 as the lowest mean score achieved and 72 as the highest mean score achieved, the retained students achieved lower scores than the placed students in reading across all grade levels (see Table 29). The lower TAKS scores for the retained students during this first year of the study most likely played a role in the decision to retain those students.

Table 29

Descriptive Statistics TAKS Reading Percent Correct '06-'07

'06-'07 Grade	Retained or Placed '06-'07	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
3	Placed '06-'07 RD TAKS %	41	27.78%	88.89%	68.7669%	15.66160%
	Retained '06-'07 RD TAKS %	45	33.33%	91.67%	62.9630%	14.99392%
4	Placed '06-'07 RD TAKS %	66	35.00%	95.00%	67.3864%	13.76612%
	Retained '06-'07 RD TAKS %	26	27.50%	87.50%	61.6346%	15.95215%
5	Placed '06-'07 RD TAKS %	33	40.48%	92.86%	72.2222%	11.94438%
	Retained '06-'07 RD TAKS %	10	40.48%	78.57%	61.6667%	13.72121%

Descriptive statistics TAKS math percent correct '06-'07.

The descriptive statistics calculated for the percent correct for the TAKS math for all participants in the study split by both grade level and retention or placement status at the end of the initial year of the study indicate that while the mean score for both cohorts is low, between 56 at the lowest and 76 at the highest, the retained students achieved lower scores than the placed students in math across all grade levels (see Table 30). Again, it is plausible that during this initial year of the study, the lower scores of the retained students are what led to the decision to retain them.

Table 30

Descriptive Statistics Math Percent Correct '06-'07

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
		Statistic	Statistic	Statistic	Statistic	Statistic
3						
	Placed '06-'07 MA TAKS %	41	25.00%	92.50%	60.1829%	16.71816%
	Retained '06-'07 MA TAKS %	45	27.50%	95.00%	56.3889%	15.48969%
4						
	Placed '06-'07 MA TAKS %	67	16.67%	95.24%	63.5039%	18.48645%
	Retained '06-'07 MA TAKS %	26	30.95%	90.48%	61.8132%	15.90050%
5						
	Placed '06-'07 MA TAKS %	33	52.27%	93.18%	76.6529%	12.37375%
	Retained '06-'07 MA TAKS %	10	22.73%	75.00%	58.6364%	14.68212%

Univariate analysis of variance TAKS reading percent correct '06-'07.

A univariate analysis of variance was conducted with the TAKS reading percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .057eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as shown in Table D1 in Appendix D. The estimated marginal means for the placed students was 66.52 with a standard error of 1.23 as compared to the retained students with an estimated marginal means of 58.61 with a standard error of 1.55 as shown in Table 31. As with the final report card grades in both reading and math, during this initial year of the study the mean of the percent of items correct for the retained students was lower than that of the placed students.

Table 31

Estimated Marginal Means TAKS Reading Percent Correct '06-'07

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	68.931	1.225	66.517	71.344
Retained	61.663	1.545	58.618	64.707

A Levene's test of equality of error variances was conducted with the TAKS reading percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .140, which indicates equality of variance did exist because the *P*-value was greater than .05.

Univariate analysis of variance TAKS math percent correct '06-'07.

A univariate analysis of variance was conducted with the TAKS math percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .057 eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the P -value is $<.05$ as shown in Table D2 in Appendix D. The estimated marginal means for the placed students was 66.61 with a standard error of 1.44 as compared to the retained students with an estimated marginal means of 57.05 with a standard error of 1.82 as shown in Table 32. Again, during this initial year of the study, the retained students had a lower mean than the placed students with respect to percent of items correct on the TAKS math test.

Table 32

Estimated Marginal Means TAKS Math Percent Correct '06-'07

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	65.616	1.437	62.785	68.447
Retained	57.047	1.819	53.464	60.630

A Levene's test of equality of error variances was conducted with the TAKS math percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .054, which indicates equality of variance did exist because the P -value was $>.05$.

Descriptive statistics TAKS reading percent correct '07-'08.

The descriptive statistics calculated for the percent correct for the TAKS reading for all participants in the study split by both grade level and retention or placement status during the second year of the study, '07-'08, indicate that while the mean score for both cohorts has increased slightly as compared to the previous year, between 68 at the lowest and 86 at the highest, the retained students achieved higher scores than the placed students in reading in the third and fifth grades, but not in the fourth grade (see Table 33).

Table 33

Descriptive Statistics TAKS Reading Percent Correct '07-'08

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
3	Placed '07-'08 RD TAKS %	41	35.00%	95.00%	68.3554%	16.38847%
	Retained '07-'08 RD TAKS %	45	63.89%	100.00%	86.1728%	8.80263%
4	Placed '07-'08 RD TAKS %	67	16.67%	97.62%	75.8477%	14.66201%
	Retained '07-'08 RD TAKS %	26	32.50%	97.50%	75.3846%	17.21471%
5	Placed '07-'08 RD TAKS %	33	35.71%	100.00%	73.5931%	13.64334%
	Retained '07-'08 RD TAKS %	10	78.57%	97.06%	86.3725%	6.14442%

Descriptive statistics TAKS math percent correct '07-'08.

The descriptive statistics calculated for the percent correct for the TAKS math for all participants in the study split by both grade level and retention or placement status during the second year of the study, '07-'08, indicate that while the mean score for both cohorts is low to moderate, between 64 at the lowest and 77 at the highest, the retained students achieved higher scores than the placed students in math across all grade levels (see Table 34).

Table 34

Descriptive Statistics TAKS Math Percent Correct '07-'08

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
3	Placed '07-'08 MA TAKS %	41	23.81%	95.24%	64.1013%	18.07145%
	Retained '07-'08 MA TAKS %	45	42.50%	97.50%	76.8889%	10.35116%
4	Placed '07-'08 MA TAKS %	67	22.73%	100.00%	65.9895%	18.51183%
	Retained '07-'08 MA TAKS %	26	45.24%	97.62%	76.3736%	13.93088%
5	Placed '07-'08 MA TAKS %	33	32.61%	97.83%	68.2477%	16.33999%
	Retained '07-'08 MA TAKS %	10	70.45%	95.45%	77.5974%	7.51522%

Univariate analysis of variance TAKS reading percent correct '07-'08.

A univariate analysis of variance was conducted with the TAKS reading percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .071 eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is $<.05$ as is shown in Table D3 in Appendix D. The estimated marginal means for the placed students was 73.14 with a standard error of 1.25 as compared to the retained students with an estimated marginal means of 81.51 with a standard error of 1.58 as shown in Table 35. During this second year of the study, the retained students had a much higher mean of percent of items correct on the reading TAKS than the placed students. It could be conjectured that the fact that the retained students are spending an additional year studying the same grade level essential knowledge and skills could explain the higher mean scores as compared to the placed students who are attempting to master essential knowledge and skills that are a grade level higher even though they had not mastered the previous year's essential knowledge and skills.

Table 35

Estimated Marginal Means TAKS Reading Percent Correct '07-'08

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	73.141	1.249	70.681	75.602
Retained	81.511	1.580	78.396	84.625

A Levene's test of equality of error variances was conducted with the TAKS reading percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .151, which indicates equality of variance did exist because the P -value was $> .05$.

Univariate analysis of variance TAKS math percent correct '07-'08.

A univariate analysis of variance was conducted with the TAKS math percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .082 eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the P -value is $< .05$ as is shown in Table D4 in Appendix D. The estimated marginal means for the placed students was 65.97 with a standard error of 1.34 as compared to the retained students with an estimated marginal means of 75.69 with a standard error of 1.70 as shown in Table 36. Again, this difference in the mean scores could be explained by the fact that the retained students are repeating a grade level curriculum while the placed students are advancing to a higher grade level curriculum without having mastered the prior year's curriculum.

Table 36

Estimated Marginal Means TAKS Math Percent Correct '07-'08

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	65.969	1.342	63.325	68.613
Retained	75.691	1.698	72.345	79.038

A Levene's test of equality of error variances was conducted with the TAKS math percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .000, which indicates equality of variance did not exist in this particular instance because the P -value is $< .05$, which lowers the reliability of the ANOVA results (SPSS, 2010).

Descriptive statistics TAKS reading percent correct '08-'09.

The descriptive statistics calculated for the percent correct for the TAKS reading for all participants in the study split by both grade level and retention or placement status during the third year of the study, '08-'09, indicate that while the mean score for both cohorts has increased slightly as compared to the previous year, between 71 at the lowest and 84 at the highest, the retained students achieved higher scores than the placed students in reading across all grade levels (see Table 37).

Table 37

Descriptive Statistics TAKS Reading Percent Correct '08-'09

6-07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
			Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed	'08-'09 RD TAKS %	41	42.86%	94.12%	75.6972%	12.17876%
	Retained	'08-'09 RD TAKS %	45	42.50%	95.00%	77.7361%	13.55576%
4	Placed	'08-'09 RD TAKS %	67	19.05%	97.62%	71.0690%	16.52516%
	Retained	'08-'09 RD TAKS %	26	33.33%	100.00%	79.4872%	13.86813%
5	Placed	'08-'09 RD TAKS %	33	47.92%	89.58%	72.1591%	12.24588%
	Retained	'08-'09 RD TAKS %	10	76.19%	95.24%	84.5378%	6.28337%

Descriptive statistics TAKS math percent correct '08-'09.

The descriptive statistics calculated for the percent correct for the TAKS math for all participants in the study split by both grade level and retention or placement status during the third year of the study, '08-'09, indicate that while the mean score for both cohorts has increased slightly as compared to the previous year, between 59 at the lowest and 80 at the highest, the retained students achieved higher scores than the placed students in math across all grade level (see Table 38).

Table 38

Descriptive Statistics TAKS Math Percent Correct '08-'09

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
		Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed	'08-'09 MA TAKS %	41	31.82%	97.73%	74.4678% 13.56704%
	Retained	'08-'09 MA TAKS %	45	35.71%	97.62%	78.8920% 12.28546%
4	Placed	'08-'09 MA TAKS %	67	26.09%	100.00%	59.7601% 17.92725%
	Retained	'08-'09 MA TAKS %	26	54.55%	97.73%	80.2448% 9.89134%
5	Placed	'08-'09 MA TAKS %	33	35.42%	95.83%	64.2677% 14.64015%
	Retained	'08-'09 MA TAKS %	10	52.17%	84.78%	70.6757% 11.84301%

Univariate analysis of variance TAKS reading percent correct '08-'09.

A univariate analysis of variance was conducted with the TAKS reading percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .062 eta squared with a significance of .000. This indicates a small effect size for group membership and meets the standard of statistical significance because the *P*-value is <.05 as is shown in Table D5 in Appendix D. The estimated marginal means for the placed students was 76.45 with a standard error of .641 as compared to the retained

students with an estimated marginal means of 80.40 with a standard error of .808 as shown in Table 39. During this third year of the study, the retained students have maintained their advantage over the placed students, but the difference in the mean of the percent of items correct is getting smaller. Where the advantage was up to 10 percentage points higher for the retained students in the second year of the study, now it has dropped to just 4 percentage points higher.

Table 39

Estimated Marginal Means TAKS Reading Percent Correct '08-'09

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	76.450	.641	75.188	77.712
Retained	80.420	.808	78.828	82.013

A Levene's test of equality of error variances was conducted with the TAKS reading percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .011, which indicates equality of variance did not exist in this particular instance.

Univariate analysis of variance TAKS math percent correct '08-'09.

A univariate analysis of variance was conducted with the TAKS math percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .051 eta squared with a significance of .001. This indicates a small effect size for group membership and did meet the standard of statistical significance because the *P*-value was <.05 as shown in Table D6 in Appendix D. The estimated marginal means for

the placed students was 76.17 with a standard error of .665 as compared to the retained students with an estimated marginal means of 79.20 with a standard error of .842 as shown in Table 40. Again, although the retained students continue to have a higher mean of percent of items correct, the advantage of the retained students over the placed students for the percent of items correct on the math TAKS during this third year of this study has dropped from 10 percentage points to only 3 percentage points.

Table 40

Estimated Marginal Means TAKS Math Percent Correct '08-'09

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	76.170	.665	74.860	77.481
Retained	79.920	.842	78.262	81.579

A Levene's test of equality of error variances was conducted with the TAKS math percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .094, which indicates equality of variance did exist because the *P*-value was $>.05$.

Descriptive statistics TAKS reading percent correct '09-'10.

The descriptive statistics calculated for the percent of items correct for the TAKS reading for all participants in the study split by both grade level and retention or placement status during the fourth year of the study, '09-'10, indicate that while the mean score for both cohorts has increased slightly as compared to the previous year, between 68 at the lowest and 81 at the highest, the retained students achieved higher scores than the placed students in reading across most grade levels. The retained students had a 10

percent advantage over the placed students in 3rd grade, a 6 percent advantage in 4th grade, and a 5 point disadvantage in the 5th grade (see Table 41). It is unclear why the placed students suddenly out-performed the retained students on the TAKS reading in 5th grade.

Table 41

Descriptive Statistics TAKS Reading Percent Correct '09-'10

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
		Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed '09-'10 RD TAKS %	41	44.12%	100.00%	70.7112%	12.89517%
	Retained '09-'10 RD TAKS %	45	54.76%	97.62%	81.8238%	8.55124%
4	Placed '09-'10 RD TAKS %	67	29.17%	97.92%	68.6581%	16.44569%
	Retained '09-'10 RD TAKS %	26	35.71%	92.86%	74.6337%	12.65166%
5	Placed '09-'10 RD TAKS %	33	43.75%	100.00%	81.3763%	13.09292%
	Retained '09-'10 RD TAKS %	10	56.25%	92.11%	76.9189%	12.57557%

Descriptive statistics TAKS math percent correct '09-'10.

The descriptive statistics calculated for the percent of items correct for the TAKS math for all participants in the study split by both grade level and retention or placement status during the fourth year of the study, '09-'10, indicate that while the mean score for both cohorts has decreased slightly as compared to the previous year, between 57 at the lowest and 77 at the highest, the retained students achieved higher scores than the placed students in math for both 3rd and 4th grade, but not in 5th grade, where the placed students out-performed the retained students by nearly 5 percentage points (see Table 42).

Table 42

Descriptive Statistics TAKS Math Percent Correct '09-'10

'06-'07 Grade	Retained or Placed '06-'07	N	Minimum	Maximum	Mean	Std. Deviation
		Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed '09-'10 MA TAKS %	41	26.09%	91.43%	61.3752%	15.46790%
	Retained '09-'10 MA TAKS %	45	52.27%	95.45%	77.5584%	10.84069%
4	Placed '09-'10 MA TAKS %	67	18.75%	95.83%	57.9064%	16.91502%
	Retained '09-'10 MA TAKS %	26	36.96%	95.65%	66.6388%	14.80743%
5	Placed '09-'10 MA TAKS %	33	34.00%	96.00%	65.2727%	15.04010%
	Retained '09-'10 MA TAKS %	10	45.83%	79.17%	60.3289%	12.72243%

Univariate analysis of variance TAKS reading percent correct '09-'10.

A univariate analysis of variance was conducted with the TAKS reading percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .000 eta squared with a significance of .796. This indicates a small effect size for group membership and does not meet the standard of statistical significance because the *P*-value is not $<.05$ as shown in Table D7 in Appendix D. The estimated marginal means for the placed students was 78.40 with a standard error of .663 as compared to the retained students with an estimated marginal means of 78.68 with a standard error of .840 as shown in Table 43. During this fourth year of the study, the advantage that the retained students had previously shown over the placed students has dwindled to nothing.

Table 43

Estimated Marginal Means TAKS Reading Percent Correct '09-'10

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	78.404	.663	77.097	79.711
Retained	78.682	.840	77.027	80.336

A Levene's test of equality of error variances was conducted with the TAKS reading percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .278, which indicates equality of variance did exist because the *P*-value was $>.05$.

Univariate analysis of variance TAKS math percent correct '09-'10.

A univariate analysis of variance was conducted with the TAKS math percent correct scores to test effect size between the retained and placed cohorts which resulted in

a score of .020 eta squared with a significance of .034. This indicates a small effect size for group membership and meets the standard of statistical significance because the P -value is $<.05$ as is shown in Table D8 in Appendix D. The estimated marginal means for the placed students was 76.65 with a standard error of .665 as compared to the retained students with an estimated marginal means of 78.91 with a standard error of .829 as shown in Table 44. Although the retained students maintain an advantage, it has decreased to only 2 percentage points.

Table 44

Estimated Marginal Means TAKS Math Percent Correct '09-'10

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	76.652	.655	75.361	77.944
Retained	78.909	.829	77.275	80.543

A Levene's test of equality of error variances was conducted with the TAKS math percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .005, which indicates equality of variance did not exist in this particular instance because the P -value is $>.05$.

Descriptive statistics TAKS reading percent correct '10-'11.

The descriptive statistics calculated for the percent correct for the TAKS reading for all participants in the study split by both grade level and retention or placement status during the fifth and final year of the study, '10-'11, indicate that while the mean score for both cohorts has remained about the same when compared to the previous year, between

68 at the lowest and 85 at the highest, the retained students achieved higher scores than the placed students in reading in 3rd grade and 5th grade, but not in 4th grade (see Table 45).

Table 45

Descriptive Statistics TAKS Reading Percent Correct '10-'11

Grade	'06-'07 Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
			Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed	'10-'11 RD TAKS %	41	35.42%	92.11%	70.8433%	15.13259%
	Retained	'10-'11 RD TAKS %	45	33.33%	95.24%	76.4115%	13.94370%
4	Placed	'10-'11 RD TAKS %	67	45.83%	97.92%	81.3891%	11.35058%
	Retained	'10-'11 RD TAKS %	26	45.83%	95.83%	75.1603%	14.51679%
5	Placed	'10-'11 RD TAKS %	33	14.29%	92.86%	68.2540%	15.60917%
	Retained	'10-'11 RD TAKS %	10	77.08%	93.75%	85.2083%	4.75580%

Descriptive statistics TAKS math percent correct '10-'11.

The descriptive statistics calculated for the percent correct for the TAKS math for all participants in the study split by both grade level and retention or placement status during the fifth and final year of the study, '10-'11, indicate that while the mean score for

both cohorts has decreased slightly as compared to the previous year, between 51 at the lowest and 70 at the highest, the retained students achieved higher scores than the placed students in math across all grade levels (see Table 46).

Table 46

Descriptive Statistics TAKS Math Percent Correct '10-'11

'06-'07 Grade	Retained or Placed '06-'07		N	Minimum	Maximum	Mean	Std. Deviation
			Statistic	Statistic	Statistic	Statistic	Statistic
3	Placed	'10-'11 MA TAKS %	41	22.92%	81.58%	58.6340%	14.13533%
	Retained	'10-'11 MA TAKS %	45	17.39%	93.48%	62.5212%	15.11730%
4	Placed	'10-'11 MA TAKS %	67	18.00%	86.00%	62.4664%	14.35873%
	Retained	'10-'11 MA TAKS %	26	39.58%	91.67%	66.5064%	13.10909%
5	Placed	'10-'11 MA TAKS %	33	25.00%	90.38%	51.6900%	15.97976%
	Retained	'10-'11 MA TAKS %	10	48.00%	94.00%	70.8500%	13.82841%

Univariate analysis of variance TAKS reading percent correct '10-'11.

A univariate analysis of variance was conducted with the TAKS reading percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .011 eta squared with a significance of .109. This indicates a small effect size

for group membership and does not meet the standard of statistical significance because the P -value is not $<.05$ as is shown in Table D9 in Appendix D. The estimated marginal means for the placed students was 75.89 with a standard error of .885 as compared to the retained students with an estimated marginal means of 78.18 with a standard error of 1.12 as shown in Table 47.

Table 47

Estimated Marginal Means TAKS Reading Percent Correct '10-'11

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	75.893	.885	74.149	77.636
Retained	78.182	1.116	75.983	80.381

A Levene's test of equality of error variances was conducted with the TAKS reading percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .608, which indicates equality of variance did exist because the P -value was $>.05$.

Univariate analysis of variance TAKS math percent correct '10-'11.

A univariate analysis of variance was conducted with the TAKS math percent correct scores to test effect size between the retained and placed cohorts which resulted in a score of .027 eta squared with a significance of .014. This indicates a small effect size for group membership and meets the standard of statistical significance because the P -value is $<.05$ as is shown in Table D10 in Appendix D. The estimated marginal means for the placed students was 58.83 with a standard error of 1.27 as compared to the

retained students with an estimated marginal means of 63.41 with a standard error of 1.60 as shown in Table 48.

Table 48

Estimated Marginal Means TAKS Math Percent Correct '10-'11

Retained or Placed '06-'07	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Placed	58.830	1.268	56.332	61.328
Retained	63.914	1.605	60.752	67.076

A Levene's test of equality of error variances was conducted with the TAKS math percent correct scores to test the hypothesis that the error variance of the dependent variable was equal across groups. This resulted in a significance of .728, which indicates equality of variance did exist because the *P*-value was $>.05$.

Summary of findings research question two.

Examination of the means and standard deviations revealed that the retained students showed higher mean scores in each of the five time points of the study in both math and reading with respect to the percent of items correct on the TAKS tests with the exception of the first year. It is plausible that the first year scores are lower for the retained students. Their lower TAKS scores most likely contributed to the decision to retain rather than place them in the next grade level.

Based on the theoretical framework and review of literature, a statistically significant difference between the two groups of retained and placed cohorts with the placed students performing at a higher level over time than the retained students was

expected. However, the results of the statistical analyses indicate that the retained students scored higher on TAKS tests in both math and reading. It was noted that the advantage the retained students had over the placed students decreased by the fifth year of the study.

Research question three.

Question three asked how absence rates were distributed amongst the retained and placed groups and whether or not the rate of absence had any impact on the achievement of the students in math and reading as measured by performance on state assessments on five different time points, 2007 through 2011. A frequency table was used to reveal the distribution for low, moderate, and high absence rates among the retained and placed groups of students. A multivariate ANOVA test was conducted to determine if there was a statistically significant difference between the mean scores of the percent of items correct on the TAKS reading and math tests for students in both cohorts based on their absence rates over the course of the five-year study. For the purposes of this study, more than 10 days absent was considered a high absence rate, between 6 and 10 days absent was considered a moderate absence rate, and five or fewer days absent was considered a low absence rate. The decision was made to use a multivariate ANOVA based on the fact that ANOVA procedures are quite robust in respects to violation of normally distributed data and homogeneity of variance (SPSS, 2010).

Frequency of absence rates for placed versus retained groups over time.

A frequency table was created to see how the absence rate for the placed group compared to that of the retained group. Both cohorts of students had 65 to 70% of their

students fall in the low absence category across the span of the five-year study (see Table 49).

Table 49

Frequency Placed & Retained Group Absence Rates from 07-11

Retained or Placed '06-'07		Absence Rate '06-'07	Absence Rate '07-'08	Absence Rate '08-'09	Absence Rate '09-'10	Absence Rate '10-'11
Placed	Low	93	94	73	87	79
	Moderate	34	29	44	22	32
	High	11	15	21	29	27
	Total	139	139	139	139	139
Retained	Low	53	63	48	54	52
	Moderate	20	13	26	20	18
	High	10	7	9	9	13
	Total	83	83	83	83	83

Descriptive statistics TAKS reading and math absence rate '06-'07.

The majority of the participants in the study had a low absence rate, less than 5 days absent, during the first year of the study as is shown in Table 50. There is very little difference in the mean scores between the students who had a low, moderate, or high absence rate. During this first year of the study, '06-'07, the students with the highest absence rate had a higher mean score by nearly 5 percentage points than the students with moderate and low absence rates on the TAKS reading test.

Table 50

Descriptive Statistics TAKS Reading & Math Absence Rate '06-'07

	Descriptive Statistics			N
	Absence Rate 0607	Mean	Std. Deviation	
'06-'07 RD TAKS %	Low	64.8557%	14.17029%	140
	Moderate	67.9261%	15.41619%	61
	High	69.7222%	17.66755%	21
	Total	66.1254%	14.88914%	222
'06-'07 MA TAKS %	Low	62.0074%	17.34081%	140
	Moderate	63.8068%	18.13076%	61
	High	62.3799%	14.96639%	21
	Total	62.5231%	17.30080%	222

Test of between subjects effects TAKS reading & math absence rate '06-'07.

A multivariate analysis of variance was conducted with the TAKS reading percent correct scores, the TAKS math percent correct scores and the absence rate to test effect size amongst the students with low, moderate, and high absence rates. This resulted in a score of .014 eta squared with a significance of .205 for the reading TAKS and a score of .002 eta squared with a significance of .232 for the math TAKS. This indicates a small effect size for group membership because the partial eta squared value is < 0.4 . Significance does not exist in this instance because the P -value is not $< .05$. It could be conjectured that absence rate did not have a significant impact on the differences between the achievement levels of the retained and placed cohorts of students.

Table 51

Test of Between Subjects Effects TAKS Reading & Math Absence Rate '06-'07

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	'06-'07 RD TAKS %	2	352.427	1.598	.205	.014
	'06-'07 MA TAKS %	2	69.890	.232	.793	.002
Intercept	'06-'07 RD TAKS %	1	578702.004	2624.209	.000	.921
	'06-'07 MA TAKS %	1	499804.211	1658.512	.000	.881
Absence 0607	'06-'07 RD TAKS %	2	352.427	1.598	.205	.014
	'06-'07 MA TAKS %	2	69.890	.232	.793	.002
Error	'06-'07 RD TAKS %	222	220.524			
	'06-'07 MA TAKS %	222	301.357			
Total	'06-'07 RD TAKS %	222				
	'06-'07 MA TAKS %	222				
Corrected Total	'06-'07 RD TAKS %	222				
	'06-'07 MA TAKS %	222				

A *Levene's test* of equality of error variances was conducted to test the hypothesis that the error variance of the dependent variables was equal across groups. This resulted in a significance of .176 for reading TAKS and .389 for math, which indicates equality of variance did exist because the *P*-value was $>.05$.

Descriptive statistics TAKS reading and math absence rate '07-'08.

The majority of the participants in the study had a low absence rate, less than 5 days absent, during the second year of the study, '07-'08, as is shown in Table 52. There is very little difference in the mean scores between the students who had a low, moderate, or high absence rate. During the second year of the study the students with the highest absence rate had a higher mean score by nearly 6 percentage points than the others on the TAKS reading test.

Table 52

Descriptive Statistics TAKS Reading & Math Absence Rate '07-'08

	Absence Rate 0708	Mean	Std. Deviation	N
'07-'08 RD TAKS %	Low	76.2873%	15.46095%	150
	Moderate	74.4893%	16.74291%	50
	High	81.1044%	9.74628%	22
	Total	76.3575%	15.34574%	222
'07-'08 MA TAKS %	Low	69.5122%	16.75619%	150
	Moderate	70.1508%	17.50986%	50
	High	70.0678%	13.62066%	22
	Total	69.7050%	16.58814%	222

Test of between subjects effects TAKS reading & math absence rate '06-'07.

A multivariate analysis of variance was conducted with the TAKS reading percent correct scores, the TAKS math percent correct scores and the absence rate to test effect size between the students with low, moderate, and high absence rates. This resulted in a score of .012 eta squared with a significance of .241 for the reading TAKS and a score of .000 eta squared with a significance of .967 for the math TAKS. This indicates a small effect size for group membership because the partial eta squared value is less than 0.4. Significance exists if the *P*-value is $<.05$, which is not the case here for reading or math as shown in Table 53.

Table 53

Tests of Between Subjects Effects TAKS Reading & Math Absence Rate '07-'08

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	'07-'08 RD TAKS %	2	335.506	1.430	.241	.012
	'07-'08 MA TAKS %	2	9.336	.034	.967	.000
Intercept	'07-'08 RD TAKS %	1	748618.946	3190.953	.000	.934
	'07-'08 MA TAKS %	1	612427.819	2206.798	.000	.907
Absence0708	'07-'08 RD TAKS %	2	335.506	1.430	.241	.012
	'07-'08 MA TAKS %	2	9.336	.034	.967	.000
Error	'07-'08 RD TAKS %	222	234.607			
	'07-'08 MA TAKS %	222	277.519			
Total	'07-'08 RD TAKS %	222				
	'07-'08 MA TAKS %	222				
Corrected Total	'07-'08 RD TAKS %	222				
	'07-'08 MA TAKS %	222				

A Levene's test of equality of error variances was conducted to test the hypothesis that the error variance of the dependent variables was equal across groups. This resulted in a significance of .101 for reading TAKS and .286 for math, which indicates equality of variance did exist because the P -value was $>.05$.

Descriptive statistics TAKS reading and math absence rate '08-'09.

The majority of the participants in the study had a low absence rate, less than 5 days absent, during the third year of the study, '08-'09, as is shown in Table 54. There is very little difference in the mean scores between the students who had a low, moderate, or high absence rate. During the third year of the study the students with the highest absence rate had a lower mean score than both the low and moderate absence rate groups on both the TAKS reading and the TAKS math tests.

Table 54

Descriptive Statistics TAKS Reading & Math Absence Rate '08-'09

	Absence Rate	Mean	Std. Deviation	N
	0809			
'08-'09 RD TAKS %	Low	75.4498%	14.18575%	121
	Moderate	75.9595%	13.19137%	71
	High	71.3069%	16.82298%	30
	Total	75.0807%	14.24389%	222
'08-'09 MA TAKS %	Low	70.5130%	16.20862%	121
	Moderate	70.6044%	16.37130%	71
	High	63.5775%	18.21503%	30
	Total	69.6355%	16.62974%	222

Test of between subjects effects TAKS reading & math absence rate '08-'09.

A multivariate analysis of variance was conducted with the TAKS reading percent correct scores, the TAKS math percent correct scores and the absence rate to test effect size between the students with low, moderate, and high absence rates. This resulted in a score of .011 eta squared with a significance of .290 for the reading TAKS and a score of .020 eta squared with a significance of .101 for the math TAKS. This indicates a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $> .05$, which is not the case here for either reading or math as shown in Table 55.

Table 55

Tests of Between Subjects Effects TAKS Reading & Math Absence Rate '08-'09

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	'08-'09 RD TAKS %	2	251.989	1.245	.290	.011
	'08-'09 MA TAKS %	2	633.674	2.318	.101	.020
Intercept	'08-'09 RD TAKS %	1	911503.494	4502.277	.000	.952
	'08-'09 MA TAKS %	1	769961.042	2816.369	.000	.926
Absence0809	'08-'09 RD TAKS %	2	251.989	1.245	.290	.011
	'08-'09 MA TAKS %	2	633.674	2.318	.101	.020
Error	'08-'09 RD TAKS %	222	202.454			
	'08-'09 MA TAKS %	222	273.388			
Total	'08-'09 RD TAKS %	222				
	'08-'09 MA TAKS %	222				
Corrected Total	'08-'09 RD TAKS %	222				
	'08-'09 MA TAKS %	222				

A Levene's test of equality of error variances was conducted to test the hypothesis that the error variance of the dependent variables was equal across groups. This resulted in a significance of .555 for reading TAKS and .667 for math, which indicates equality of variance did exist because the *P*-value was $>.05$.

Descriptive statistics TAKS reading and math absence rate '09-'10.

The majority of the participants in the study had a low absence rate, less than 5 days absent, during the fourth year of the study, '09-'10, as is shown in Table 56. There is very little difference in the mean scores between the students who had a low, moderate, or high absence rate. During the fourth year of the study the students with the highest absence rate had a lower mean score than both the low and moderate absence rate groups on both the TAKS reading and the TAKS math tests.

Table 56

Descriptive Statistics TAKS Reading & Math Absence Rate '09-'10

	Absence Rate	Mean	Std. Deviation	N
	0910			
'09-'10 RD TAKS %	Low	75.7733%	13.10158%	141
	Moderate	76.0433%	16.36577%	50
	High	69.7705%	14.84816%	31
	Total	74.8362%	14.27861%	222
'09-'10 MA TAKS %	Low	66.9125%	15.57542%	141
	Moderate	63.3237%	15.16268%	50
	High	58.7970%	18.13052%	31
	Total	64.7823%	16.15421%	222

Test of between subjects effects TAKS reading and math absence rate '09-'10.

A multivariate analysis of variance was conducted with the TAKS reading percent correct scores, the TAKS math percent correct scores and the absence rate to test effect size between the students with low, moderate, and high absence rates. This resulted in a score of .025 eta squared with a significance of .056 for the reading TAKS and a score of .035 eta squared with a significance of .017 for the math TAKS. This indicates a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is the case here for math but not for reading as shown in Table 57.

Table 57

Tests of Between Subjects Effects TAKS Reading & Math Absence Rate '09-'10

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	'09-'10 RD TAKS %	2	585.901	2.922	.056	.025
	'09-'10 MA TAKS %	2	1053.757	4.150	.017	.035
Intercept	'09-'10 RD TAKS %	1	919354.472	4585.353	.000	.953
	'09-'10 MA TAKS %	1	669068.033	2634.721	.000	.921
Absence0910	'09-'10 RD TAKS %	2	585.901	2.922	.056	.025
	'09-'10 MA TAKS %	2	1053.757	4.150	.017	.035
Error	'09-'10 RD TAKS %	222	200.498			
	'09-'10 MA TAKS %	222	253.943			
Total	'09-'10 RD TAKS %	222				
	'09-'10 MA TAKS %	222				
Corrected Total	'09-'10 RD TAKS %	222				
	'09-'10 MA TAKS %	222				

A Levene's test of equality of error variances was conducted to test the hypothesis that the error variance of the dependent variables was equal across groups. This resulted in a significance of .383 for reading TAKS and .624 for math, which indicates equality of variance did exist because the P -value was $>.05$.

Descriptive statistics TAKS reading and math absence rate '10-'11.

The majority of the participants in the study had a low absence rate, less than 5 days absent, during the fifth year of the study, '10-'11, as is shown in Table 58. There is very little difference in the mean scores between the students who had a low, moderate, or high absence rate. During the fifth year of the study the students with the highest absence rate had a lower mean score than both the low and moderate absence rate groups on both the TAKS reading and the TAKS math tests.

Table 58

Descriptive Statistics TAKS Reading & Math Absence Rate '10-'11

	Absence Rate 1011	Mean	Std. Deviation	N
'10-'11 RD TAKS %	Low	76.4331%	14.97506%	131
	Moderate	75.9617%	12.84912%	51
	High	73.2284%	13.58462%	40
	Total	75.7539%	14.21617%	222
'10-'11 MA TAKS %	Low	62.0420%	14.87904%	131
	Moderate	60.9303%	15.16043%	51
	High	56.4491%	16.00962%	40
	Total	60.7835%	15.22308%	222

Test of between subjects effects TAKS reading and math absence rate '10-'11.

A multivariate analysis of variance was conducted with the TAKS reading percent correct scores, the TAKS math percent correct scores and the absence rate to test effect size between the students with low, moderate, and high absence rates. This resulted in a score of .007 eta squared with a significance of .457 for the reading TAKS and a score of .018 eta squared with a significance of .126 for the math TAKS. This indicates a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for either reading or math as shown in Table 59.

Table 59

Tests of Between Subjects Effects TAKS Reading & Math Absence Rate '10-'11

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	'10-'11 RD TAKS %	2	159.031	.785	.457	.007
	'10-'11 MA TAKS %	2	480.105	2.092	.126	.018
Intercept	'10-'11 RD TAKS %	1	1020668.722	5040.820	.000	.957
	'10-'11 MA TAKS %	1	645455.147	2811.900	.000	.926
Absence1011	'10-'11 RD TAKS %	2	159.031	.785	.457	.007
	'10-'11 MA TAKS %	2	480.105	2.092	.126	.018
Error	'10-'11 RD TAKS %	222	202.481			
	'10-'11 MA TAKS %	222	229.544			
Total	'10-'11 RD TAKS %	222				
	'10-'11 MA TAKS %	222				
Corrected Total	'10-'11 RD TAKS %	222				
	'10-'11 MA TAKS %	222				

A Levene's test of equality of error variances was conducted to test the hypothesis that the error variance of the dependent variables was equal across groups. This resulted in a significance of .649 for reading TAKS and .848 for math, which indicates equality of variance did exist because the *P*-value was $> .05$.

Summary of findings research question three.

Examination of the means and standard deviations revealed that in years one and two of the study, '06-'08, students with higher absence rates showed higher mean scores for the reading TAKS with respect to the mean of the percent of items correct when compared to the students with low and moderate absence rates. The mean for the math TAKS test with respect to percent of items correct was about the same across the low, moderate, and high absence rate groups during both of the first two years of the study.

During the last three years of the study, '09-'11, the students with the higher absence rate performed lower than the students with the low and moderate absence rates on both the reading and the math TAKS tests. There was little to no difference between the means on both the reading and math TAKS tests for the low and moderate absence rate groups of students. Statistical significance failed to be established for any of the analyses that used absence rate as a factor as is evidence by the failure to meet the standard set at $P < .05$.

Based on the theoretical framework and review of literature, it was expected that a statistically significant difference would occur in the performance levels between the students who had poor attendance as compared to those who had better attendance. It was also expected that students who were retained would have higher rates of absences than students who were placed. The results of the statistical analyses indicate that the students with better attendance rates scored higher on TAKS tests in both math and reading with the exception of the first two years of the study on the reading TAKS test. A frequency table revealed that absence rates were fairly evenly distributed in both the placed and retained cohorts. Statistical significance was not found in these analyses.

Research question four.

Question four asked how the factors of gender, ethnicity, and socioeconomic status were distributed among the retained and placed groups of students and whether or not those factors impacted the achievement of the students in math and reading as measured by performance on state assessments on five different time points, 2007 through 2011. A frequency table was used to show the distribution for each of the factors of gender, ethnicity, and socioeconomic status among the retained and placed groups of

students. A multivariate ANOVA test was conducted to determine if there was a statistically significant difference between the mean scores of the percent of items correct on the TAKS reading and math tests for students in both cohorts based on their gender, ethnicity, or socioeconomic status over the course of the five-year study. The decision was made to use a multivariate ANOVA based on the fact that ANOVA procedures are quite robust in respect to violation of normally distributed data and homogeneity of variance (SPSS, 2010).

Appendices I, J, and K summarize the mean data for gender, ethnicity, and socioeconomic status respectively for both the retained and placed cohorts across the five-years of the study.

Distribution of gender, ethnicity, and socioeconomic status.

A frequency table was created for the factors of gender, ethnicity, and socioeconomic status to see the distribution of these factors amongst the retained and placed groups of students. The frequency table for gender showed there were more males than females in both the retained and the placed groups (see Table 60).

Table 60

Distribution of Gender among the Retained & Placed Groups

Retained or Placed '06-'07	Gender	Frequency	Percent
Placed	Female	54	39.7
	Male	85	60.3
	Total	139	100.0
Retained	Female	39	47.7
	Male	44	52.3
	Total	83	100.0

The frequency table for ethnicity showed that between 56 to 60% of the students in both the retained and placed groups are Hispanic, between 14 to 17% of the students are African American, and between 23 to 25% are white (see Table 61). This is significant when compared to the demographics of the district which is comprised of 28% Hispanics, 9% African Americans, and 53% Whites.

Table 61

Distribution of Ethnicity among the Retained & Placed Groups

Retained or Placed '06-'07	Ethnicity	Frequency	Percent
Placed	White	33	23.4
	Hispanic	82	60.3
	Asian	3	2.1
	African American	20	14.2
	Total	139	100.0
Retained	White	22	25.0
	Hispanic	41	55.7
	Asian	2	2.3
	African American	15	17.0
	Total	83	100.0

The frequency table for the distribution of the factor of socioeconomic status showed that the percentage of placed students on free or reduced status was 60% as compared to the district with 30%. The percentage of retained students on free or reduced status was 50% as compared to the district with 30% (see Table 62).

Table 62

Distribution of Socioeconomic Status among the Retained & Placed Groups

Retained or Placed '06-'07	Socioeconomic Status	Frequency	Percent
Placed	Free/Reduced	83	58.9
	None	56	41.1
	Total	139	100.0
Retained	Free/Reduced	50	56.8
	None	33	43.2
	Total	83	100.0

Comparison of performance on TAKS reading and math gender '06-'07.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and gender, placed, and retained status as factors. The partial eta squared scores of .001 for reading and .043 for math with a significance score of .674 and .207 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which not is the case here for reading or math.

The Levene's test of equality for error of variances significance score of .375 for reading and .718 for math showed that equality of variance did exist because the P -value was $> .05$. The descriptive statistics table showed that males scored higher than females

in both the retained and placed groups for math. Females scored higher than the males in reading, but only in the retained group (see Table 63).

Table 63

Descriptive Statistics Gender TAKS Reading & Math '06-'07

Retained or Placed '06-'07		Gender	Mean	Std. Deviation	N
Placed	'06-'07 RD TAKS %	Female	67.3512%	13.52905%	56
		Male	69.9835%	14.27399%	84
		Total	68.9306%	13.99145%	139
	'06-'07 MA TAKS %	Female	58.2230%	16.01789%	56
		Male	71.1268%	16.29710%	84
		Total	65.9653%	17.33102%	139
	'06-'07 RD TAKS %	Female	63.9116%	16.33008%	40
		Male	59.6092%	14.07747%	43
		Total	61.6626%	15.25937%	83
Retained	'06-'07 RD TAKS %	Female	63.9116%	16.33008%	40
		Male	59.6092%	14.07747%	43
		Total	61.6626%	15.25937%	83
	'06-'07 MA TAKS %	Female	56.4350%	14.92106%	40
		Male	57.6058%	16.82491%	43
		Total	57.0470%	15.86464%	83

Comparison of performance on TAKS reading and math ethnicity '06-'07.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and ethnicity, placed, and retained status as factors. The partial eta squared scores of .025 for reading and .024 for math with a significance score of .129 and .154 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .222 for reading and .362 for math showed that equality of variance did exist because the P -value

was $>.05$. The descriptive statistics table showed that Whites and Asians tend to score higher than Hispanics and African Americans in both the retained and placed groups for math and reading in both the retained and the placed groups (see Table 64).

Table 64

Descriptive Statistics Ethnicity TAKS Reading & Math '06-'07

Retained or Placed '06-'07		Ethnicity	Mean	Std. Deviation	N
Placed	'06-'07 RD TAKS %	White	74.2881%	13.99313%	33
		Hispanic	67.1561%	13.86283%	84
		Asian	68.6111%	15.46352%	3
		African American	67.5913%	13.11484%	20
		Total	68.9306%	13.99145%	139
	'06-'07 MA TAKS %	White	69.8380%	18.08443%	33
		Hispanic	63.9004%	16.77931%	84
		Asian	71.1111%	27.29836%	3
		African American	67.4762%	16.93379%	20
		Total	65.9653%	17.33102%	139
Retained	'06-'07 RD TAKS %	White	64.6032%	18.92842%	22
		Hispanic	60.6641%	13.84079%	49
		Asian	58.3333%	11.78511%	2
		African American	61.0556%	14.95922%	15
		Total	61.6626%	15.25937%	83
	'06-'07 MA TAKS %	White	59.1341%	18.30052%	22
		Hispanic	56.6844%	15.05231%	49
		Asian	76.9643%	7.82868%	2
		African American	52.5148%	13.94668%	15
		Total	57.0470%	15.86464%	83

Comparison of performance TAKS reading and math socioeconomic '06-'07.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and socioeconomic, placed, and retained status as factors. The partial eta squared scores of .018 for reading and .013 for math with a

significance score of .138 and .237 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .222 for reading and .657 for math showed that equality of variance did exist because the P -value was $> .05$. The descriptive statistics table showed that students who receive free or reduced lunch consistently score lower than the students who do not receive free or reduced lunch for both math and reading in both the retained and the placed groups (see Table 65).

Table 65

Descriptive Statistics Socioeconomic Status TAKS Reading & Math '06-'07

Retained or Placed '06-'07		Socioeconomic Status	Mean	Std. Deviation	N
Placed	'06-'07 RD TAKS %	Free/Reduced	68.1746%	14.37535%	82
		None	69.9993%	13.48093%	58
		Total	68.9306%	13.99145%	139
	'06-'07 MA TAKS %	Free/Reduced	63.9732%	17.04164%	82
		None	68.7817%	17.49253%	58
		Total	65.9653%	17.33102%	139
Retained	'06-'07 RD TAKS %	Free/Reduced	60.1444%	12.96934%	50
		None	63.6602%	17.81962%	38
		Total	61.6626%	15.25937%	83
	'06-'07 MA TAKS %	Free/Reduced	55.7222%	14.67883%	50
		None	58.7901%	17.34827%	38
		Total	57.0470%	15.86464%	83

Comparison of performance on TAKS reading and math gender '07-'08.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and gender, placed, and retained status as factors. The partial eta squared scores of .000 for reading and .041 for math with a significance score of .810 and .234 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .225 for reading and .005 for math showed that equality of variance did exist for reading, but not for math, meaning that there were extreme scores that may have invalidated the mean. The descriptive statistics table showed that males scored higher than females in both the retained and placed groups for math. Females scored higher than the males in reading, but only in the retained group (see Table 66).

Table 66

Descriptive Statistics Gender TAKS Reading & Math '07-'08

	Retained or Placed '06-'07	Gender	Mean	Std. Deviation	N
Placed	'07-'08 RD TAKS %	Female	72.7363%	15.75622%	56
		Male	73.4082%	14.90255%	85
		Total	73.1414%	15.19508%	139
	'07-'08 MA TAKS %	Female	59.3808%	16.92298%	56
		Male	70.3094%	17.16705%	85
		Total	65.9690%	17.83631%	139
	'07-'08 RD TAKS %	Female	82.7135%	16.10447%	42
		Male	80.4123%	12.31301%	46
		Total	81.5106%	14.21196%	83
Retained	'07-'08 RD TAKS %	Female	82.7135%	16.10447%	42
		Male	80.4123%	12.31301%	46
		Total	81.5106%	14.21196%	83
	'07-'08 MA TAKS %	Female	74.7586%	12.67850%	42
		Male	76.5425%	11.94185%	46
		Total	75.6911%	12.26045%	83

Comparison of performance on TAKS reading and math ethnicity '07-'08.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and ethnicity, placed, and retained status as factors. The partial eta squared scores of .025 for reading and .019 for math with a significance score of .129 and .228 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .342 for reading and .000 for math showed that equality of variance did exist for reading, but not for math, which again, is an indication that there may have been extreme scores that make the mean less reliable for math. The descriptive statistics table showed that Whites and Asians tend to score higher than Hispanics and African Americans in both the

retained and placed groups for math and reading in both the retained and the placed groups. African American students scored higher than both Hispanics and Asians on the math and reading tests in the placed cohort, which is an exception to this trend (see Table 67).

Table 67

Descriptive Statistics Ethnicity TAKS Reading & Math '07-'08

Retained or Placed '06-'07		Ethnicity	Mean	Std. Deviation	N
Placed	'07-'08 RD TAKS %	White	78.9298%	12.56965%	33
		Hispanic	70.7712%	15.08821%	85
		Asian	61.5873%	26.71056%	3
		African American	75.3969%	15.61632%	20
		Total	73.1414%	15.19508%	139
	'07-'08 MA TAKS %	White	70.1469%	15.39514%	33
		Hispanic	63.2432%	18.60131%	85
		Asian	68.5786%	18.27574%	3
		African American	70.2684%	17.20467%	20
		Total	65.9690%	17.83631%	139
Retained	'07-'08 RD TAKS %	White	83.9646%	14.80197%	22
		Hispanic	80.8827%	13.09117%	49
		Asian	85.0000%	21.21320%	2
		African American	79.4970%	17.02523%	15
		Total	81.5106%	14.21196%	83
	'07-'08 MA TAKS %	White	77.9228%	15.88402%	22
		Hispanic	75.1410%	9.78403%	49
		Asian	87.8571%	3.03046%	2
		African American	72.5928%	13.65617%	15
		Total	75.6911%	12.26045%	83

Comparison of performance TAKS reading and math socioeconomic '07-'08.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and socioeconomic, placed, and retained status

as factors. The partial eta squared scores of .002 for reading and .004 for math with a significance score of .760 and .655 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .063 for reading and .000 for math showed that equality of variance did exist for reading, but not for math. The descriptive statistics table showed that students who receive free or reduced lunch consistently score lower than the students who do not receive free or reduced lunch for both math and reading in both the retained and the placed groups. An exception to this trend is the reading TAKS scores in the retained group where the students who receive free and reduced lunch scored about the same as the students who do not receive free or reduced lunch (see Table 68).

Table 68

Descriptive Statistics Socioeconomic Status TAKS Reading & Math '07-'08

Retained or Placed '06-'07		Socioeconomic Status	Mean	Std. Deviation	N
Placed	'07-'08 RD TAKS %	Free/Reduced	71.4648%	16.08406%	83
		None	75.5406%	13.60105%	58
		Total	73.1414%	15.19508%	139
	'07-'08 MA TAKS %	Free/Reduced	64.8726%	18.76034%	83
		None	67.5379%	16.45637%	58
		Total	65.9690%	17.83631%	139
	'07-'08 RD TAKS %	Free/Reduced	81.7261%	10.07815%	50
		None	81.2270%	18.44639%	38
		Total	81.5106%	14.21196%	83
Retained	'07-'08 MA TAKS %	Free/Reduced	74.9758%	10.35144%	50
		None	76.6324%	14.48952%	38
		Total	75.6911%	12.26045%	83

Comparison of performance TAKS reading and math gender '08-'09.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and gender, placed, and retained status as factors. The partial eta squared scores of .000 for reading and .016 for math with a significance score of .812 and .059 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .312 for reading and .048 for math showed that equality of variance did exist for reading, but not for math. The descriptive statistics table showed that males scored higher than females in both the retained and placed groups for math. Females scored slightly higher than the males in reading, but only in the placed group (see Table 69).

Table 69

Descriptive Statistics Gender TAKS Reading & Math '08-'09

Retained or Placed '06-'07		Gender	Mean	Std. Deviation	N
Placed	'08-'09 RD TAKS %	Female	73.3064%	12.07145%	56
		Male	72.2506%	15.90853%	85
		Total	72.6699%	14.46944%	139
	'08-'09 MA TAKS %	Female	62.2518%	16.80561%	56
		Male	66.9629%	17.14131%	85
		Total	65.0918%	17.10558%	139
	'08-'09 RD TAKS %	Female	78.1944%	14.15072%	42
		Male	79.6271%	12.07390%	46
		Total	78.9433%	13.04946%	83
Retained	'08-'09 RD TAKS %	Female	78.1944%	14.15072%	42
		Male	79.6271%	12.07390%	46
		Total	78.9433%	13.04946%	83
	'08-'09 MA TAKS %	Female	75.4294%	13.37536%	42
		Male	78.2729%	12.47332%	46
		Total	76.9158%	12.91604%	83

Comparison of performance TAKS reading and math ethnicity '08-'09.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and ethnicity, placed, and retained status as factors. The partial eta squared scores of .037 for reading and .023 for math with a significance score of .051 and .164 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .589 for reading and .004 for math showed that equality of variance did exist, for reading, but not for math. The descriptive statistics table showed Whites scored higher than both Hispanics and African Americans in both math and reading in all groups of students.

African American students scored higher than Hispanics and Asians in both math and reading in the placed group of students. In the retained group of students, African Americans scored lower than all other ethnicity groups (see Table 70).

Table 70

Descriptive Statistics Ethnicity TAKS Reading & Math '08-'09

Retained or Placed '06-'07		Ethnicity	Mean	Std. Deviation	N
Placed	'08-'09 RD TAKS %	White	78.8727%	10.83423%	33
		Hispanic	70.2579%	15.51538%	85
		Asian	64.2857%	14.48277%	3
		African			
		American	73.9443%	12.36885%	20
		Total	72.6699%	14.46944%	139
	'08-'09 MA TAKS %	White	69.5909%	17.53084%	33
		Hispanic	63.5012%	17.01415%	85
		Asian	59.7826%	25.42177%	3
		African			
		American	65.2246%	15.47939%	20
		Total	65.0918%	17.10558%	139
Retained	'08-'09 RD TAKS %	White	82.3078%	12.36758%	22
		Hispanic	78.1663%	13.61200%	49
		Asian	78.2143%	9.59645%	2
		African			
		American	76.6443%	12.70034%	15
		Total	78.9433%	13.04946%	83
	'08-'09 MA TAKS %	White	78.1710%	12.31722%	22
		Hispanic	78.9793%	10.25271%	49
		Asian	83.9827%	15.91756%	2
		African			
		American	67.3917%	17.57603%	15
		Total	76.9158%	12.91604%	83

Comparison of performance TAKS reading and math socioeconomic '08-'09.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and socioeconomic, placed, and retained status as factors. The partial eta squared scores of .017 for reading and .004 for math with a significance score of .145 and .664 respectively indicate a small effect size for group

membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .375 for reading and .053 for math showed that equality of variance did exist because the P -value was $> .05$. The descriptive statistics table showed that students who receive free or reduced lunch consistently score lower than the students who do not receive free or reduced lunch for both math and reading in both the retained and the placed groups (see Table 71).

Table 71

Descriptive Statistics Socioeconomic Status TAKS Reading & Math '08-'09

Retained or Placed '06-'07		Socioeconomic Status	Mean	Std. Deviation	N
Placed	'08-'09 RD TAKS %	Free/Reduced	70.3539%	14.16164%	83
		None	75.9843%	14.37802%	58
		Total	72.6699%	14.46944%	139
	'08-'09 MA TAKS %	Free/Reduced	64.4017%	17.78180%	83
		None	66.0794%	16.18980%	58
		Total	65.0918%	17.10558%	139
Retained	'08-'09 RD TAKS %	Free/Reduced	77.9617%	12.17501%	50
		None	80.2349%	14.18050%	38
		Total	78.9433%	13.04946%	83
	'08-'09 MA TAKS %	Free/Reduced	78.4506%	12.08188%	50
		None	74.8963%	13.84110%	38
		Total	76.9158%	12.91604%	83

Comparison of performance on TAKS reading and math gender '09-'10.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and gender, placed, and retained status as

factors. The partial eta squared scores of .007 for reading and .063 for math with a significance score of .216 and .062 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .001 for reading and .457 for math showed that equality of variance did exist for math, but not for reading. The descriptive statistics table showed that males scored higher than females in both the retained and placed groups for both the reading and math tests (see Table 72).

Table 72

Descriptive Statistics Gender TAKS Reading & Math '09-'10

Retained or Placed '06-'07		Gender	Mean	Std. Deviation	N
Placed	'09-'10 RD TAKS %	Female	71.1568%	15.44546%	56
		Male	72.9399%	15.61025%	85
		Total	72.2317%	15.51437%	139
	'09-'10 MA TAKS %	Female	54.6513%	15.26159%	56
		Male	64.5840%	15.72937%	85
		Total	60.6391%	16.24008%	139
Retained	'09-'10 RD TAKS %	Female	77.6942%	13.09963%	42
		Male	80.2099%	8.33137%	46
		Total	79.0092%	10.87974%	83
	'09-'10 MA TAKS %	Female	68.6685%	14.62567%	42
		Male	73.9337%	12.38049%	46
		Total	71.4208%	13.67790%	83

Comparison of performance TAKS reading and math ethnicity '09-'10.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and ethnicity, placed, and retained status as

factors. The partial eta squared scores of .029 for reading and .018 for math with a significance score of .087 and .268 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .084 for reading and .435 for math showed that equality of variance did exist because the P -value was $> .05$. The descriptive statistics table showed African Americans and Whites scored higher than both Hispanics and Asians in both math and reading in the placed group of students. In the retained group of students, African American students scored higher than Hispanics and Whites in reading, but scored lower than all other ethnicity groups in math (see Table 73).

Table 73

Descriptive Statistics Ethnicity TAKS Reading & Math '09-'10

Retained or Placed '06-'07		Ethnicity	Mean	Std. Deviation	N
Placed	'09-'10 RD TAKS %	White	78.7338%	13.11680%	33
		Hispanic	68.8407%	16.01632%	85
		Asian	62.0040%	12.43012%	3
		African American	77.4490%	12.78177%	20
		Total	72.2317%	15.51437%	139
	'09-'10 MA TAKS %	White	66.1480%	17.00253%	33
		Hispanic	57.3737%	15.93235%	85
		Asian	57.2766%	17.18924%	3
		African American	65.9317%	13.09365%	20
		Total	60.6391%	16.24008%	139
Retained	'09-'10 RD TAKS %	White	78.4159%	10.06272%	22
		Hispanic	78.8294%	11.77050%	49
		Asian	80.9524%	10.10153%	2
		African American	80.2078%	9.93206%	15
		Total	79.0092%	10.87974%	83
	'09-'10 MA TAKS %	White	71.9017%	14.51259%	22
		Hispanic	72.2446%	13.43236%	49
		Asian	89.9209%	5.03080%	2
		African American	65.5574%	11.73839%	15
		Total	71.4208%	13.67790%	83

Comparison of performance TAKS reading and math socioeconomic '09-'10.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and socioeconomic, placed, and retained status as factors. The partial eta squared scores of .013 for reading and .004 for math with a significance score of .243 and .654 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .002 for reading and .651 for math showed that equality of variance existed for math, but not for reading. The descriptive statistics table showed that students who receive free or reduced lunch scored lower than the students who do not receive free or reduced lunch for both math and reading in the placed group. Students who receive free or reduced lunch scored slightly higher than the students who do not receive free or reduced lunch for both math and reading in the retained group (see Table 74).

Table 74

Descriptive Statistics Socioeconomic Status TAKS Reading & Math '09-'10

Retained or Placed '06-'07		Socioeconomic Status	Mean	Std. Deviation	N
Placed	'09-'10 RD TAKS %	Free/Reduced	69.1497%	16.69903%	83
		None	76.6421%	12.50575%	58
		Total	72.2317%	15.51437%	139
	'09-'10 MA TAKS %	Free/Reduced	59.9585%	16.45375%	83
		None	61.6131%	16.02117%	58
		Total	60.6391%	16.24008%	139
	'09-'10 RD TAKS %	Free/Reduced	79.5907%	9.21443%	50
		None	78.2441%	12.83845%	38
		Total	79.0092%	10.87974%	83
Retained	'09-'10 RD TAKS %	Free/Reduced	79.5907%	9.21443%	50
		None	78.2441%	12.83845%	38
		Total	79.0092%	10.87974%	83
	'09-'10 MA TAKS %	Free/Reduced	72.5136%	13.17336%	50
		None	69.9828%	14.36472%	38
		Total	71.4208%	13.67790%	83

Comparison of performance TAKS reading and math gender '10-'11.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and gender, placed, and retained status as factors. The partial eta squared scores of .006 for reading and .032 for math with a

significance score of .254 and .078 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .461 for reading and .967 for math showed that equality of variance did exist because the P -value was $> .05$. The descriptive statistics table showed that males scored higher than females in both the retained and placed groups for both the reading and math tests with one exception. Females scored about the same as males on the reading test in the retained group of students (see Table 75).

Table 75

Descriptive Statistics Gender TAKS Reading & Math '10-'11

Retained or Placed '06-'07		Gender	Mean	Std. Deviation	N
Placed	'10-'11 RD TAKS %	Female	73.0327%	13.71529%	56
		Male	76.7081%	15.27295%	85
		Total	75.2484%	14.73483%	139
	'10-'11 MA TAKS %	Female	54.7424%	13.57210%	56
		Male	61.5228%	15.68203%	85
		Total	58.8299%	15.19890%	139
Retained	'10-'11 RD TAKS %	Female	76.1834%	15.09450%	42
		Male	76.9113%	11.77149%	46
		Total	76.5639%	13.38587%	83
	'10-'11 MA TAKS %	Female	61.7486%	14.06571%	42
		Male	65.8907%	15.35332%	46
		Total	63.9138%	14.81529%	83

Comparison of performance TAKS reading and math ethnicity '10-'11.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and ethnicity, placed, and retained status as factors. The partial eta squared scores of .024 for reading and .018 for math with a significance score of .152 and .266 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .919 for reading and .575 for math showed that equality of variance did exist because the P -value was $> .05$. The descriptive statistics table showed Whites and Asians scored higher than both Hispanics and African Americans in both math and reading in both the placed and the retained groups of students (see Table 76).

Table 76

Descriptive Statistics Ethnicity TAKS Reading & Math '10-'11

Retained or Placed '06-'07		Ethnicity	Mean	Std. Deviation	N
Placed	'10-'11 RD TAKS %	White	79.5725%	14.14920%	33
		Hispanic	73.8976%	13.86165%	85
		Asian	77.0833%	14.58333%	3
		African American	73.5793%	18.61839%	20
		Total	75.2484%	14.73483%	139
	'10-'11 MA TAKS %	White	63.5181%	13.97302%	33
		Hispanic	57.1551%	14.75933%	85
		Asian	61.5556%	15.63946%	3
		African American	57.8033%	18.20695%	20
		Total	58.8299%	15.19890%	139
Retained	'10-'11 RD TAKS %	White	79.8916%	11.61610%	22
		Hispanic	75.6671%	13.75962%	49
		Asian	79.3155%	9.04928%	2
		African American	74.2460%	15.13468%	15
		Total	76.5639%	13.38587%	83
	'10-'11 MA TAKS %	White	64.0940%	12.42721%	22
		Hispanic	63.7974%	15.18309%	49
		Asian	79.9819%	12.93800%	2
		African American	61.8872%	16.98889%	15
		Total	63.9138%	14.81529%	83

Comparison of performance TAKS reading and math socioeconomic '10-'11.

A multivariate analysis was done using the TAKS reading and math percent correct scores as the dependent variables and socioeconomic, placed, and retained status as factors. The partial eta squared scores of .003 for reading and .010 for math with a significance score of .753 and .346 respectively indicate a small effect size for group membership because the partial eta squared value is < 0.4 . Significance exists if the P -value is $< .05$, which is not the case here for reading or math.

The Levene's test of equality for error of variances significance score of .969 for reading and .800 for math showed that equality of variance did exist because the *P*-value was $> .05$. The descriptive statistics table showed that students who receive free or reduced lunch scored lower than the students who do not receive free or reduced lunch for both math and reading in the placed group. Students who receive free or reduced lunch scored slightly higher than the students who do not receive free or reduced lunch for math and slightly lower for reading in the retained group (see Table 77).

Table 77

Descriptive Statistics Socioeconomic Status TAKS Reading & Math '10-'11

Retained or Placed '06-'07		Socioeconomic Status	Mean	Std. Deviation	N
Placed	'10-'11 RD TAKS %	Free/Reduced	74.7090%	15.08556%	83
		None	76.0203%	14.31252%	58
		Total	75.2484%	14.73483%	139
	'10-'11 MA TAKS %	Free/Reduced	58.4280%	15.94907%	83
		None	59.4049%	14.17296%	58
		Total	58.8299%	15.19890%	139
	'10-'11 RD TAKS %	Free/Reduced	75.9846%	13.73180%	50
		None	77.3261%	13.05951%	38
		Total	76.5639%	13.38587%	83
Retained	'10-'11 RD TAKS %	Free/Reduced	75.9846%	13.73180%	50
		None	77.3261%	13.05951%	38
		Total	76.5639%	13.38587%	83
	'10-'11 MA TAKS %	Free/Reduced	65.0350%	14.94802%	50
		None	62.4385%	14.70575%	38
		Total	63.9138%	14.81529%	83

Summary of findings research question four.

Examination of the frequencies of distribution revealed that Hispanic and African American students are over-represented in both the retained and placed groups when

compared to the demographics of the district in its entirety. This also proved to be true for students who receive free and reduced lunch, as well as male students.

Examination of the means and standard deviations for the reading and math TAKS scores revealed the following trends: (1) males tend to score higher than females in both reading and math across all five time points as well as across both the retained and placed groups of students, (2) African American and Hispanic students tend to score lower than Whites and Asians in both reading and math across all five time points as well as across both the retained and placed groups of students, and (3) students who receive free and reduced lunch tend to score lower than students who do not receive free and reduced lunch in both reading and math across all five time points as well as across both the retained and placed groups of students. Statistical significance failed to be established against the standard of P -value is $< .05$ in all of the analyses using gender, ethnicity, and socioeconomic status as factors. It could be conjectured that the factors of gender, ethnicity, and socioeconomic status did not have an impact on student achievement when comparing the two cohorts of retained and placed students.

Based on the theoretical framework and review of literature, it was expected there would be over representation of males, Hispanics, African Americans, and low-socioeconomic status students in both the retained and placed groups of students. It was also expected there would be a statistically significant difference in the performance levels between males and females with females scoring higher in reading overall and males scoring higher in math overall. In addition, it was expected that students who were of Hispanic, African American, and of low-socioeconomic status would consistently

score lower than Whites, Asians, and students who were not on free or reduced lunch.

The results of the statistical analyses indicate that all of these assumptions proved to be correct with the exception of the females scoring higher than males on the reading TAKS tests. Males out-performed females in both math and reading consistently. The standard for statistical significance of $P\text{-value} < .05$ failed to be met when using gender, ethnicity, and socioeconomic status as factors.

Summary of chapter four.

This chapter presented the results of the analyses of data obtained from the Department of Research and Accountability in a large suburban district in Texas. The sample size included 222 students who did not meet promotion standards at the end of the '06-'07 school year and were either retained or placed. A longitudinal quantitative study was conducted using five-years of archival data. Each research question was addressed using various functions of SPSS 20.0 including a MANOVA, ANOVA, Estimated Means, Frequencies, Between Subjects Effects, and Levene's Test for Errors of Variances. In order to answer the research questions for the study, descriptive statistics were used to organize the data. Chapter 5 provides an in-depth discussion of the findings.

Chapter V: Discussion, Implications, and Recommendations

Discussion

Every classroom, campus, district, and state has a group of students who, for whatever reason, are unable to master the knowledge and skills that are being taught at a given point in time. The task of figuring out how to best serve these struggling students falls on the shoulders of teachers, administrators, and parents. This study examined the impact of retention as compared to grade placement for a total of 222 students who were not meeting promotion standards over a five-year time period. The study was designed to add to the body of research that already exists with respect to the impact that retention and placement decisions have upon struggling learners. This chapter will (1) discuss the findings and interpretations, (2) identify implications of the study, (3) make recommendations for future research, and (4) provide a concluding summary of the study.

Findings and interpretations.

There were four research questions in this study. The first question of the study asked how report card grades for math and reading of the retained students compared to those of placed students of similar achievement levels over the course of the five-years of the study. Examination of the means and standard deviations revealed that the retained students showed higher mean scores on their final report card grades over the five-years of the study in both math and reading with the exception of the first year, where the placed students scored higher in both math and reading (see Tables 7 & 8). It seems plausible that the first year of the study, '06-'07, retained student report card grades would be lower than that of placed students, which probably led to the decision to retain the students rather than place them. Appendices E and F show the estimated marginal

means tables for final report card grades for reading and math respectively by year for easy reference. When comparing the data across the span of the five years of the study, it becomes evident that the advantage achieved by the retained group of students over the placed group of students is strongest in the second year of the study, immediately after retention, nearly ten percentage points, and dwindles down to merely one or two percentage points in the fifth and final year of the study.

The second question of the study asked how the achievement levels on state-mandated assessments for reading and math of the retained students compared to those of the placed students of similar achievement levels over the five-years of the study. Examination of the means and standard deviations revealed that the retained students showed higher mean scores with respect to the percent of items correct on the TAKS tests in both math and reading in each of the five-years of the study. The trend held true for all years of data collected with the exception of the first year. It seems plausible that in the first year of the study, retained student scores would be lower than that of placed students, which likely led to the decision to retain the students rather than place them. Appendices G and H show the estimated marginal means tables for percent of items correct for reading and math TAKS respectively by year for easy reference. When comparing the data across the span of the five years of the study, it becomes evident that the advantage achieved by the retained group of students over the placed group of students is strongest in the second year of the study, immediately after retention, nearly ten percentage points, and dwindles down to merely two percentage points in reading and four percentage points in math in the fifth and final year of the study

The third question of the study asked how absence rates were distributed amongst the retained and placed groups of students and whether or not the absence rate impacted the achievement of the students in math and reading as measured by performance on state assessments over the course of the five-years of the study. A frequency table was created to see how the absence rate for the placed group compared to that of the retained group. Both cohorts of students had 65 to 70% of their students fall in the low absence category, less than five days absent, across the span of the five-year study.

Examination of the means and standard deviations revealed that in years one and two of the study, '06-'08, students with higher absence rates showed higher mean scores on the reading TAKS when compared to the mean score of the percent of items correct of both the students with low and moderate absence rates. It could be conjectured that this was due to the very small number of students with a high absence rate, only 22 participants of the total, 222. The mean score of the percent of items correct on the math TAKS test was about the same across the low, moderate, and high absence rate groups during both of the first two years of the study.

During the last three years of the study, '09-'11, the students with the higher absence rate scored lower than the students with the low and moderate absence rates on both the reading and the math TAKS tests. There was little to no difference between the mean score on both the reading and math TAKS tests for the low and moderate absence rate groups of students. It could be conjectured that being absent 10 days or less seemingly has little to no impact on student performance for struggling students. The standard for statistical significance of $P\text{-value} < .05$ failed to be met in these analyses which could be

taken as further indication that absence rates failed to have an impact on the performance of either the retained or the placed groups of students.

The fourth question of the study asked how the factors of gender, ethnicity, and socioeconomic status were distributed among the retained and placed groups of students and whether or not those factors had an impact on the achievement of the students in math and reading as measured by performance on state assessments over the five-years of the study. Examination of the frequencies of distribution revealed that Hispanic and African American students are over-represented in both the retained and placed groups when compared to the demographics of the district in its entirety. This also proved to be true for students who receive free and reduced lunch, as well as male students (see Tables 60, 61, & 62).

Examination of the means and standard deviations for the reading and math TAKS scores revealed the following trends: (1) males tend to score higher than females in both reading and math across all five-years of the study as well as across both the retained and placed groups of students (see Appendix I), (2) African American and Hispanic students tend to score lower than Whites and Asians in both reading and math across all five-years of the study as well as across both the retained and placed groups of students (see Appendix J), and (3) students who receive free and reduced lunch tend to score lower than students who do not receive free and reduced lunch in both reading and math across all five-years of the study as well as across both the retained and placed groups of students, (see Appendix K).

Statistical significance failed to be met at $P\text{-value} < .05$, indicating that in this study, the factors of gender, ethnicity, and socioeconomic status did not impact student achievement when comparing the cohorts of retained versus placed students.

Implications

There are several educational practice implications from this study. Some of the implications include: (1) retention and placement decision making for struggling students, (2) addressing the needs of minority and lower socioeconomic status students to close the achievement gap that exists between them and their Asian and White counterparts, and (3) meeting the needs of female students to close the achievement gap between them and their male counterparts.

Retention and placement decision making.

Based on the data collected in this study, for every student that is retained, there are two others who are performing at equally low achievement levels that are placed, in spite of their low achievement scores. Educators who are making the decision to place those students in spite of the fact that they have not yet mastered the essential knowledge and skills for their current grade level may be doing those children a disservice. The findings in this study imply that students would achieve higher on both their report card grades and their state assessments if they were retained rather than placed, at least in the first two years immediately after retention. However, careful consideration should be given to the fact that the gains in this study dwindled down to very little, between one and four percentage points, by the fifth and final year of the study. Educators must decide

whether the stigma of being retained and the impact that may have on a child's self-esteem is worth the slight gain over the performance of their placed peers.

The outcome of this study should be considered cautiously and discretion should be used when making grade placement decisions. The defined construct was small and limited to only one school district. This particular school district provides high levels of intervention to all struggling students without regard to whether they were retained or placed which could have led to the comparable gains made by both groups of students. In addition, the SSI requirements put in place by the state during the course of this study mandated individualized instructional plans for each of these students, which most likely also impacted their performance.

Addressing the needs of minority and lower socioeconomic status students.

The findings of this study are aligned with the national trend for Hispanic, African American, and impoverished students to perform significantly below their White, Asian, and wealthier peers (Jimerson, 1999). This outcome reinforces the well heeded call to arms for all educators to use scientifically-based and well-researched instructional practices when working with these groups of students (Darling-Hammond, 1998). If we already know that the minority and impoverished groups of students will struggle with the curriculum, why do we continue to present it to them without differentiation? They enter our classrooms and we give them the same instruction and experiences that we give to the White, Asian, and wealthier students, completely ignoring the knowledge that they need something more.

Meeting the needs of female students.

The findings of this study imply a need to examine how we meet the needs of female students who are struggling to master essential knowledge and skills as is evidenced by the difference in their performance as compared to the males (see Appendix I). Although there are studies that indicate females perform better in some subjects and at some age groups when compared to their male peers (Jimerson, 2001), the findings of this study clearly indicate that females who struggle tend to achieve lower levels of performance in both reading and math than their male counterparts. This implies that teachers need to differentiate for the female students, specifically for lower performing female students.

Recommendations for future research

While the current study adds to the body of research that already exists respecting the impact of retention and placement on student performance, there is a need for additional research. Several recommendations may provide valuable insights when considering whether to retain or place a student who has not mastered the required essential knowledge and skills at the end of a school year:

1. Longitudinal research should be conducted to determine students' performance over the span of their educational journey. This would make the outcome more reliable when making retention and/or placement decisions that aim to increase student achievement in the long run.
2. A larger sample size comprised of more than one district would allow for broader generalizations and conclusions. It is possible that the size of the selected

construct combined with the levels of intervention provided in this particular district may make comparisons to other districts unreliable.

3. A qualitative study that measures the effectiveness of interventions provided for a child after he/she has been either retained or placed could serve to shed even more light on whether or not one intervention is more beneficial to a struggling learner than another.
4. A qualitative study that focuses on prevention rather than intervention may be of more benefit to practitioners in meeting the needs of students before they are facing possible retention.
5. A study that is based on normative measures rather than criterion-based measures may result in a different interpretation of results.
6. Similar studies should be conducted that examine the impact of the quality of first-time teaching as a contributing factor to the status of the learners as low-performing both before and after retention and placement decisions become necessary.

Summary

The findings of this study produced more recent research on the impact of retention and placement on the performance of students who are struggling to master the essential knowledge and skills at a particular grade level. The study consistently showed higher achievement levels as measured by report card grades and performance on state-mandated assessments in both math and reading for students who were retained over students who were placed. The advantage of the retained students was strongest in the

second year of the study, immediately after retention, but dwindled down to only one to four percentage points when compared to the achievement levels of the placed students for both math and reading in the fifth and final year of the study.

In addition, significant differences in means were revealed between males and females, minority students and non-minority students, impoverished students and non-impoverished students over the course of the five-year study. This study provides implications respecting the long term benefits of retention for struggling students. The disaggregated data provide administrators and teachers with considerations that should drive an action plan to improve the low performance among diverse groups of students, whether across gender, ethnicity, or socioeconomic status.

This study provides statistically sound research that informs educators and parents as they grapple with the decision to hold a student back or push him/her on when one is struggling to learn. Recommendations for future research involve longitudinal research, larger selected constructs, and qualitative studies of interventions for struggling students as well as preventative measures before they begin to fail, studies that involve normative measures, and studies that examine the impact of quality first-time teaching on students who struggle to learn. Such research would support the decision making of teachers, administrators, and parents as they determine how to support students who have failed to meet the promotion standards for their current grade level, by retaining them or placing them. The outcome of this study was in line with the position of Jackson (1975), Holmes and Mathews (1984), and Jimerson (2001), all of whom concluded that sufficient data

does not exist that indicates the benefits of retaining a student outweigh those of placing him and providing intervention.

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Appendix A
University Approval

UNIVERSITY of **HOUSTON**
DIVISION OF RESEARCH

February 27, 2012

Imelda Medrano
c/o Dr. Angus MacNeil
Educational Leadership & Cultural Studies

Dear Imelda Medrano,

Based upon your request for exempt status, an administrative review of your research proposal entitled "AN INVESTIGATION INTO THE IMPACT OF GRADE RETENTION AND GRADE PLACEMENT AS INTERVENTIONS IN A LARGE SUBURBAN SCHOOL DISTRICT IN TEXAS" was conducted on February 1, 2012.

At that time, your request for exemption under **Category 4** was approved pending modification of your proposed procedures/documents.

The changes you have made adequately respond to the identified contingencies. As long as you continue using procedures described in this project, you do not have to reapply for review. * Any modification of this approved protocol will require review and further approval. Please contact me to ascertain the appropriate mechanism.

If you have any questions, please contact Alicia Vargas at (713) 743-9215.

Sincerely yours,



Kirstin M. Rochford, MPH, CIP, CPIA
Director, Research Compliance

*Approvals for exempt protocols will be valid for 5 years beyond the approval date. Approval for this project will expire **January 1, 2017**. If the project is completed prior to this date, a final report should be filed to close the protocol. If the project will continue after this date, you will need to reapply for approval if you wish to avoid an interruption of your data collection.

Protocol Number: 12466-EX

Appendix B
District Approval

EXECUTIVE DIRECTOR FOR RESEARCH, ASSESSMENT, AND ACCOUNTABILITY

February 8, 2012

Imelda Medrano
6802 Hedgewick Drive
Houston, TX 77084

Dear Ms. Medrano,

The [REDACTED] Independent School District research review committee has met to consider your application for research in our district. This letter is to confirm that your research study, "An Investigation into the Impact of Grade Retention and Grade Placement as Interventions in a Large Suburban School District in Texas", has been approved.

Your study will request includes use of district data that is not publicly available. This letter will serve as notice of cooperation from [REDACTED] SD that you have permission to use the dataset that you have requested. District staff members will develop the dataset and provide you with an electronic copy. You will be responsible for redacting all student identifiers during the course of your analysis.

We appreciate your interest in conducting research in [REDACTED] ISD and wish you the best in your endeavors. When your research is complete, please be sure to provide a copy of the results to my office.

Sincerely,

[REDACTED]
Executive Director for Research, Assessment,
and Accountability

Appendix C

Test of Between Subjects for Report Card Grades by Year

Table C1

Tests of Between Subjects Effects for Final Reading Report Card Grade '06-'07

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	624.604	10.699	.001	.045
Intercept	1	1063854.088	18223.051	.000	.988
RetainedorPlaced0607	1	624.604	10.699	.001	.045
Error	222	58.380			
Total	222				
Corrected Total	222				

Table C2

Tests of Between Subjects Effects for Final Math Report Card Grade '06-'07

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	902.078	16.300	.000	.067
Intercept	1	1045348.541	18889.074	.000	.988
RetainedorPlaced0607	1	902.078	16.300	.000	.067
Error	222	55.341			
Total	222				
Corrected Total	222				

Table C3

Tests of Between Subjects Effects for Final Reading Report Card Grade '07-'08

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	395.691	7.986	.005	.034
Intercept	1	1312503.883	26489.181	.000	.992
RetainedorPlaced0607	1	395.691	7.986	.005	.034
Error	222	49.549			
Total	222				
Corrected Total	222				

Table C4

Tests of Between Subjects Effects for Final Math Report Card Grade '07-'08

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	4148.264	81.993	.000	.265
Intercept	1	1327461.731	26238.195	.000	.991
RetainedorPlaced0607	1	4148.264	81.993	.000	.265
Error	227	50.593			
Total	222				
Corrected Total	222				

Table C5

Tests of Between Subjects Effects for Final Reading Report Card Grade '08-'09

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	851.837	14.829	.000	.062
Intercept	1	1329713.784	23148.448	.000	.990
RetainedorPlaced0607	1	851.837	14.829	.000	.062
Error	222	57.443			
Total	222				
Corrected Total	222				

Table C6

Tests of Between Subjects Effects for Final Math Report Card Grade '08-'09

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	762.052	12.218	.001	.051
Intercept	1	1320140.568	21165.725	.000	.989
RetainedorPlaced0607	1	762.052	12.218	.001	.051
Error	222	62.372			
Total	222				
Corrected Total	222				

Table C7

Tests of Between Subjects Effects for Final Reading Report Card Grade '09-'10

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	4.174	.067	.796	.000
Intercept	1	1337031.598	21548.110	.000	.990
RetainedorPlaced0607	1	4.174	.067	.796	.000
Error	222	62.049			
Total	222				
Corrected Total	222				

Table C8

Tests of Between Subjects Effects for Final Math Report Card Grade '09-'10

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	275.917	4.558	.034	.020
Intercept	1	1311206.083	21660.613	.000	.990
RetainedorPlaced0607	1	275.917	4.558	.034	.020
Error	222	60.534			
Total	222				
Corrected Total	222				

Table C9

Tests of Between Subjects Effects for Final Reading Report Card Grade '10-'11

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	283.108	2.583	.109	.011
Intercept	1	1282739.249	11702.463	.000	.981
RetainedorPlaced0607	1	283.108	2.583	.109	.011
Error	222	109.613			
Total	222				
Corrected Total	222				

Table C10

Tests of Between Subjects Effects for Final Math Report Card Grade '10-'11

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	58.364	.446	.505	.002
Intercept	1	1243679.189	9507.914	.000	.977
RetainedorPlacedGroup	1	58.364	.446	.505	.002
Error	222	130.805			
Total	222				
Corrected Total	222				

Appendix D
Tests of Between Subjects for Percent Correct by Year

Table D1

Tests of Between Subjects Effects TAKS Reading Percent Correct '06-'07

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	2854.299	13.589	.000	.057
Intercept	1	921545.425	4387.522	.000	.951
RetainedorPlaced0607	1	2854.299	13.589	.000	.057
Error	222	210.038			
Total	222				
Corrected Total	222				

Table D2

Tests of Between Subjects Effects TAKS Math Percent Correct '06-'07

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	3978.236	13.670	.000	.057
Intercept	1	815250.547	2801.399	.000	.925
RetainedorPlaced0607	1	3978.236	13.670	.000	.057
Error	222	291.016			
Total	222				
Corrected Total	222				

Table D3

Tests of Between Subjects Effects TAKS Reading Percent Correct '07-'08

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	3795.210	17.266	.000	.071
Intercept	1	1295916.952	5895.619	.000	.963
RetainedorPlaced0607	1	3795.210	17.266	.000	.071
Error	222	219.810			
Total	222				
Corrected Total	222				

Table D4

Tests of Between Subjects Effects TAKS Math Percent Correct '07-'08

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	5121.435	20.178	.000	.082
Intercept	1	1087329.831	4283.912	.000	.950
RetainedorPlaced0607	1	5121.435	20.178	.000	.082
Error	222	253.817			
Total	222				
Corrected Total	222				

Table D5

Tests of Between Subjects Effects TAKS Reading Percent Correct '08-'09

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	851.837	14.829	.000	.062
Intercept	1	1329713.784	23148.448	.000	.990
RetainedorPlaced0607	1	851.837	14.829	.000	.062
Error	222	57.443			
Total	222				
Corrected Total	222				

Table D6

Tests of Between Subjects Effects TAKS Math Percent Correct '08-'09

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	762.052	12.218	.001	.051
Intercept	1	1320140.568	21165.725	.000	.989
RetainedorPlaced0607	1	762.052	12.218	.001	.051
Error	222	62.372			
Total	222				
Corrected Total	222				

Table D7

Tests of Between Subjects Effects TAKS Reading Percent Correct '09-'10

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	4.174	.067	.796	.000
Intercept	1	1337031.598	21548.110	.000	.990
RetainedorPlaced0607	1	4.174	.067	.796	.000
Error	222	62.049			
Total	222				
Corrected Total	222				

Table D8

Tests of Between Subjects Effects TAKS Math Percent Correct '09-'10

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	275.917	4.558	.034	.020
Intercept	1	1311206.083	21660.613	.000	.990
RetainedorPlaced0607	1	275.917	4.558	.034	.020
Error	222	60.534			
Total	222				
Corrected Total	222				

Table D9

Tests of Between Subjects Effects TAKS Reading Percent Correct '10-'11

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	283.108	2.583	.109	.011
Intercept	1	1282739.249	11702.463	.000	.981
RetainedorPlaced0607	1	283.108	2.583	.109	.011
Error	222	109.613			
Total	222				
Corrected Total	222				

Table D10

Tests of Between Subjects Effects TAKS Math Percent Correct '10-'11

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1	1400.418	6.180	.014	.027
Intercept	1	816327.545	3602.604	.000	.941
RetainedorPlaced0607	1	1400.418	6.180	.014	.027
Error	222	226.594			
Total	222				
Corrected Total	222				

Appendix E

Estimated Marginal Means Final Reading Report Card Grade Table by Year

Year	Retained/Placed Cohort	Mean	Std. Error	95% Confidence Interval		N
				Lower Bound	Upper Bound	
'06-'07	Placed	71.759	.643	70.491	73.027	139
	Retained	68.364	.814	66.759	69.969	83
'07-'08	Placed	76.468	.593	75.300	77.636	139
	Retained	79.170	.750	77.692	80.649	83
'08-'09	Placed	76.450	.641	75.188	77.712	139
	Retained	80.420	.808	78.828	82.013	83
'09-'10	Placed	78.404	.663	77.097	79.711	139
	Retained	78.682	.840	77.027	80.336	83
'10-'11	Placed	75.893	.885	74.149	77.636	139
	Retained	78.182	1.116	75.983	80.381	83

Appendix F

Estimated Marginal Means Final Math Report Card Grade Table by Year

Year	Retained/Placed Cohort	Mean	Std. Error	95% Confidence Interval		N
				Lower Bound	Upper Bound	
'06-'07	Placed	71.489	.626	70.255	72.724	139
	Retained	67.409	.793	65.846	68.972	83
'07-'08	Placed	73.887	.599	72.706	75.067	139
	Retained	82.636	.758	81.142	84.130	83
'08-'09	Placed	76.170	.665	74.860	77.481	139
	Retained	79.920	.842	78.262	81.579	83
'09-'10	Placed	76.652	.655	75.361	77.944	139
	Retained	78.909	.829	77.275	80.543	83
'10-'11	Placed	75.336	.967	73.431	77.240	139
	Retained	76.375	1.219	73.973	78.777	83

Appendix G

Estimated Marginal Means Reading TAKS Table by Year

Year	Retained/Placed Cohort	Mean	Std. Error	95% Confidence Interval		N
				Lower Bound	Upper Bound	
'06-'07	Placed	68.931	1.225	66.517	71.344	139
	Retained	61.663	1.545	58.618	64.707	83
'07-'08	Placed	73.141	1.249	70.681	75.602	139
	Retained	81.511	1.580	78.396	84.625	83
'08-'09	Placed	76.450	.641	75.188	77.712	139
	Retained	80.420	.808	78.828	82.013	83
'09-'10	Placed	78.404	.663	77.097	79.711	139
	Retained	78.682	.840	77.027	80.336	83
'10-'11	Placed	75.893	.885	74.149	77.636	139
	Retained	78.182	1.116	75.983	80.381	83

Appendix H

Estimated Marginal Means Math TAKS Table by Year

Year	Retained/Placed Cohort	Mean	Std. Error	95% Confidence Interval		N
				Lower Bound	Upper Bound	
'06-'07	Placed	65.616	1.437	62.785	68.447	139
	Retained	57.047	1.819	53.464	60.630	83
'07-'08	Placed	65.969	1.342	63.325	68.613	139
	Retained	75.691	1.698	72.345	79.038	83
'08-'09	Placed	76.170	.665	74.860	77.481	139
	Retained	79.920	.842	78.262	81.579	83
'09-'10	Placed	76.652	.655	75.361	77.944	139
	Retained	78.909	.829	77.275	80.543	83
'10-'11	Placed	58.830	1.268	56.332	56.332	139
	Retained	63.914	1.605	60.752	60.752	83

Appendix I

Estimated Marginal Means Reading & Math TAKS Gender by Year

Dependent Variable	Retained or Placed	N	Gender	Mean	Std. Error	95% Confidence Interval	
						Lower Bound	Upper Bound
'06-'07 RD TAKS %	Placed	53	F	67.351	1.932	63.544	71.159
		85	M	69.983	1.578	66.875	73.092
	Retained	40	F	63.912	2.231	59.515	68.308
		44	M	59.609	2.132	55.408	63.810
'06-'07 MA TAKS %	Placed	53	F	58.223	2.151	53.985	62.461
		85	M	71.127	1.756	67.666	74.587
	Retained	40	F	56.435	2.483	51.541	61.329
		44	M	57.606	2.373	52.930	62.282
'07-'08 RD TAKS %	Placed	53	F	72.736	1.925	68.942	76.531
		85	M	74.084	1.572	70.986	77.182
	Retained	40	F	82.714	2.223	78.332	87.095
		44	M	80.412	2.125	76.226	84.599
'07-'08 MA TAKS %	Placed	53	F	59.381	2.049	55.344	63.418
		85	M	70.659	1.673	67.363	73.955
	Retained	40	F	74.759	2.365	70.097	79.420
		44	M	76.543	2.260	72.088	80.997
'08-'09 RD TAKS %	Placed	53	F	73.306	1.832	69.696	76.917
		85	M	72.771	1.496	69.822	75.719
	Retained	40	F	78.194	2.116	74.025	82.364
		44	M	79.627	2.022	75.643	83.611
'08-'09 MA TAKS %	Placed	53	F	62.252	2.056	58.200	66.304
		85	M	67.424	1.679	64.115	70.732
	Retained	40	F	75.429	2.374	70.751	80.108
		44	M	78.273	2.269	73.802	82.744

Dependent Variable	Retained or Placed	N	Gender	Mean	95% Confidence Interval		
					Std. Error	Lower Bound	Upper Bound
'09-'10 RD TAKS %	Placed	53	F	71.157	1.843	67.525	74.789
		85	M	73.338	1.505	70.373	76.304
	Retained	40	F	77.694	2.128	73.500	81.888
		44	M	80.210	2.034	76.202	84.217
'09-'10 MA TAKS %	Placed	53	F	54.651	1.866	50.321	57.298
		85	M	64.977	1.600	61.824	68.130
	Retained	40	F	68.669	2.262	64.210	73.127
		44	M	73.934	2.162	69.673	78.194
'10-'11 RD TAKS %	Placed	53	F	73.033	1.904	69.280	76.785
		85	M	76.775	1.555	73.712	79.839
	Retained	40	F	76.183	2.199	71.850	80.516
		44	M	76.911	2.101	72.771	81.052
'10-'11 MA TAKS %	Placed	53	F	54.742	1.983	50.835	58.649
		85	M	61.690	1.619	58.500	64.880
	Retained	40	F	61.749	2.289	57.237	66.260
		44	M	65.891	2.188	61.580	70.201

Appendix J

Estimated Marginal Means Reading & Math TAKS Ethnicity by Year

Dependent Variable	Retained or Placed	Ethnicity	N	Mean	95% Confidence Interval		
					Std. Error	Lower Bound	Upper Bound
'06-'07 RD TAKS %	Placed	Asian or Pacific Islander	3	68.611	8.344	52.166	85.056
		Black not of Hispanic Origin	20	67.591	3.232	61.222	73.960
		Hispanic	85	67.156	1.577	64.048	70.264
		White not of Hispanic Origin	33	74.288	2.516	69.330	79.246
		Asian or Pacific Islander	2	58.333	10.220	38.192	78.474
	Retained	Black not of Hispanic Origin	15	61.056	3.732	53.701	68.410
		Hispanic	49	60.664	2.065	56.595	64.733
		White not of Hispanic Origin	22	64.603	3.081	58.530	70.676
		Asian or Pacific Islander	3	71.111	9.650	52.092	90.130
		Black not of Hispanic Origin	20	67.476	3.738	60.110	74.842
'06-'07 MA TAKS %	Placed	Hispanic	85	63.900	1.824	60.306	67.495
		White not of Hispanic Origin	33	69.838	2.910	64.104	75.572
	Retained	Asian or Pacific Islander	2	76.964	11.819	53.671	100.258
		Black not of Hispanic Origin	15	52.515	4.316	44.009	61.020
		Hispanic	49	56.684	2.388	51.978	61.390
		White not of Hispanic Origin	22	59.134	3.564	52.111	66.157

Dependent Variable	Retained or Placed	Ethnicity	N	Mean	95% Confidence Interval		
					Std. Error	Lower Bound	Upper Bound
'07-'08 RD TAKS %	Placed	Asian or Pacific Islander	3	61.587	8.222	45.384	77.790
		Black not of Hispanic Origin	20	75.397	3.184	69.121	81.672
		Hispanic	85	71.415	1.554	68.353	74.477
		White not of Hispanic Origin	33	78.930	2.479	74.044	83.815
		Asian or Pacific Islander	2	85.000	10.069	65.155	104.845
	Retained	Black not of Hispanic Origin	15	79.497	3.677	72.251	86.743
		Hispanic	49	80.883	2.034	76.873	84.892
		White not of Hispanic Origin	22	83.965	3.036	77.981	89.948
		Asian or Pacific Islander	3	68.579	9.125	50.596	86.561
		Black not of Hispanic Origin	20	70.268	3.534	63.304	77.233
'07-'08 MA TAKS %	Placed	Hispanic	85	63.509	1.724	60.111	66.907
		White not of Hispanic Origin	33	70.147	2.751	64.725	75.569
	Retained	Asian or Pacific Islander	2	87.857	11.175	65.833	109.881
		Black not of Hispanic Origin	15	72.593	4.081	64.551	80.635
		Hispanic	49	75.141	2.258	70.691	79.591
		White not of Hispanic Origin	22	77.923	3.369	71.282	84.563

Dependent Variable	Retained or Placed	Ethnicity	N	Mean	Std. Error	95% Confidence Interval	
						Lower Bound	Upper Bound
'08-'09 RD TAKS %	Placed	Asian or Pacific Islander	3	64.286	7.785	48.943	79.629
		Black not of Hispanic Origin	20	73.944	3.015	68.002	79.887
		Hispanic	85	70.754	1.471	67.855	73.654
		White not of Hispanic Origin	33	78.873	2.347	74.247	83.499
		Asian or Pacific Islander	2	78.214	9.535	59.423	97.005
	Retained	Black not of Hispanic Origin	15	76.644	3.482	69.783	83.506
		Hispanic	49	78.166	1.926	74.370	81.963
		White not of Hispanic Origin	22	82.308	2.875	76.642	87.974
		Asian or Pacific Islander	3	59.783	8.838	42.365	77.200
		Black not of Hispanic Origin	20	65.225	3.423	58.479	71.970
		Hispanic	85	63.921	1.670	60.629	67.212
		White not of Hispanic Origin	33	69.591	2.665	64.339	74.842
'08-'09 MA TAKS %	Placed	Asian or Pacific Islander	2	83.983	10.824	62.651	105.315
		Black not of Hispanic Origin	15	67.392	3.952	59.602	75.181
		Hispanic	49	78.979	2.187	74.670	83.289
		White not of Hispanic Origin	22	78.171	3.264	71.739	84.603
	Retained	Asian or Pacific Islander	2	83.983	10.824	62.651	105.315
		Black not of Hispanic Origin	15	67.392	3.952	59.602	75.181
		Hispanic	49	78.979	2.187	74.670	83.289

Dependent Variable	Retained or Placed	Ethnicity	Mean	N	95% Confidence Interval		
					Std. Error	Lower Bound	Upper Bound
'09-'10 RD TAKS %	Placed	Asian or Pacific Islander	62.004	3	7.771	46.689	77.319
		Black not of Hispanic Origin	77.449	20	3.010	71.518	83.380
		Hispanic	69.190	85	1.469	66.296	72.085
		White not of Hispanic Origin	78.734	33	2.343	74.116	83.351
		Asian or Pacific Islander	80.952	2	9.517	62.196	99.709
	Retained	Black not of Hispanic Origin	80.208	15	3.475	73.359	87.057
		Hispanic	78.829	49	1.923	75.040	82.619
		White not of Hispanic Origin	78.416	22	2.870	72.761	84.071
		Asian or Pacific Islander	57.277	3	8.598	40.332	74.221
		Black not of Hispanic Origin	65.932	20	3.330	59.369	72.494
'09-'10 MA TAKS %	Placed	Hispanic	57.681	85	1.625	54.479	60.883
		White not of Hispanic Origin	66.148	33	2.592	61.039	71.257
	Retained	Asian or Pacific Islander	89.921	2	10.530	69.169	110.673
		Black not of Hispanic Origin	65.557	15	3.845	57.980	73.135
		Hispanic	72.245	49	2.127	68.052	76.437
		White not of Hispanic Origin	71.902	22	3.175	65.645	78.159

Dependent Variable	Retained or Placed	Ethnicity	Mean	N	95% Confidence Interval		
					Std. Error	Lower Bound	Upper Bound
'10-'11 RD TAKS %	Placed	Asian or Pacific Islander	77.083	3	8.235	60.853	93.313
		Black not of Hispanic Origin	73.579	20	3.189	67.293	79.865
		Hispanic	73.931	85	1.556	70.864	76.999
		White not of Hispanic Origin	79.573	33	2.483	74.679	84.466
		Asian or Pacific Islander	79.315	2	10.086	59.438	99.193
	Retained	Black not of Hispanic Origin	74.246	15	3.683	66.988	81.504
		Hispanic	75.667	49	2.038	71.651	79.683
		White not of Hispanic Origin	79.892	22	3.041	73.898	85.885
		Asian or Pacific Islander	61.556	3	8.683	44.444	78.667
		Black not of Hispanic Origin	57.803	20	3.363	51.176	64.431
'10-'11 MA TAKS %	Placed	Hispanic	57.270	85	1.641	54.036	60.504
		White not of Hispanic Origin	63.518	33	2.618	58.359	68.678
	Retained	Asian or Pacific Islander	79.982	2	10.634	59.024	100.939
		Black not of Hispanic Origin	61.887	15	3.883	54.235	69.540
		Hispanic	63.797	49	2.148	59.563	68.031
		White not of Hispanic Origin	64.094	22	3.206	57.775	70.413

Appendix K

Estimated Marginal Means Reading & Math TAKS Socioeconomic Status by Year

Dependent Variable		N	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
'06-'07 RD TAKS %	Free	80	64.106 ^a	2.879	58.431	69.781
	None	89	68.449	2.588	63.347	73.550
	Reduced	53	59.805 ^a	3.847	52.220	67.390
'06-'07 MA TAKS %	Free	80	62.470 ^a	3.257	56.049	68.891
	None	89	69.429	2.928	63.657	75.201
	Reduced	53	54.826 ^a	4.353	46.244	63.408
'07-'08 RD TAKS %	Free	80	77.332 ^a	2.857	71.699	82.965
	None	89	80.080	2.569	75.016	85.144
	Reduced	53	69.345 ^a	3.819	61.816	76.874
'07-'08 MA TAKS %	Free	80	71.706 ^a	3.149	65.499	77.913
	None	89	74.507	2.830	68.927	80.087
	Reduced	53	66.428 ^a	4.208	58.132	74.725
'08-'09 RD TAKS %	Free	80	75.167 ^a	2.703	69.839	80.495
	None	89	77.061	2.429	72.271	81.850
	Reduced	53	69.441 ^a	3.612	62.320	76.563
'08-'09 MA TAKS %	Free	80	72.250 ^a	3.188	65.965	78.534
	None	89	71.738	2.866	66.088	77.387
	Reduced	53	63.335 ^a	4.261	54.936	71.735
'09-'10 RD TAKS %	Free	80	75.335 ^a	2.735	69.944	80.727
	None	89	77.561	2.458	72.715	82.408
	Reduced	53	69.409 ^a	3.655	62.203	76.615
'09-'10 MA TAKS %	Free	80	71.468 ^a	3.033	65.488	77.448
	None	89	67.005	2.727	61.630	72.381
	Reduced	53	60.341 ^a	4.054	52.349	68.333
'10-'11 RD TAKS %	Free	80	76.081 ^a	2.825	70.512	81.650
	None	89	78.122	2.539	73.115	83.128
	Reduced	53	73.765 ^a	3.776	66.322	81.209
'10-'11 MA TAKS %	Free	80	62.696 ^a	2.922	56.935	68.457
	None	89	64.665	2.627	59.486	69.844
	Reduced	53	59.477 ^a	3.906	51.776	67.177