

Early In-Grade Retention in the Prediction of TAKS Reading Achievement Scores Among Third Grade Students in a South Texas School

Cynthia S. Johnson, Ed.D
Gonzaga University-Spokane Washington
USA

Abstract

Research on grade retention, focusing on the effects on children's academic performance and socio-emotional development has been controversial. The main reason for the controversy has been, despite the evidence against the use of retention it has continued as a common practice even though the research indicates that retained students perform lower academically and are more likely to drop out of school (Anderson, Whipple, & Jimerson, 2003). Schools have been under an increased pressure to have all students achieve at high performance levels; therefore grade retention is utilized as a remedy to solve academic struggles. The National Association of Psychologists (2003) found that "despite a century of research that fails to support the efficacy of grade retention, the use of grade retention has increased over the past 25 years. It is estimated that as many as 15% of American students are held back each year, and 30% - 50% of students in the US are retained at least once before ninth grade" (p. 1).

1. Introduction

Retention has been one of the most controversial practices in education. For more than 40 years, research has continued to prove the same results, failing then retaining a student is the single largest predictor of whether he or she will drop out of school (Thomas, 2010). By utilizing the practice of retention it only exacerbates the achievement gap (Thomas, 2010). Student retention rates have been high and according to Woelfel (2003) the rates have continued to climb. Woelfel went on to state between fifteen and nineteen percent of all students in the United States have been retained each year. Thomas (2010) asserts that African-American and Hispanic students are retained at over three times the rate of white students. The National Association for Student Psychologists (2003) found that the "highest retention rates are found among poor, minority, inner-city youth" (p.1). Thompson and Cunningham (2001) asserted the issue of whether it was better to retain low-performing students in grade or to pass the low performing students along with peers has been debated and heavily studied for decades. Advocates of retention have maintained a message has been sent to all students that weak effort and poor performance will not be tolerated. Current trends toward utilizing grade retention appear to be on the rise due to high stakes testing, increased accountability along with national and state standards, and the demand for an increase in student achievement results.

2. Research Rationale

Research on grade retention, focusing on the effects on children's academic performance and socio-emotional development has been contentious. The main reason for this continued debate is that despite the current policies of the No Child Left Behind Act (NCLB), a greater number of students are being left behind because of use and implementation of grade retention practices (Jimerson, Pletcher, and Kerr, 2005). Students in the United States are held back every year despite evidence against its use. "For most students, grade retention had a negative effect on all areas of achievement (e.g., reading, math, and language) and social and emotional adjustment (e.g., peer relationships, self-esteem, problem behaviors, and attendance)" (Jimerson, Pletcher, and Kerr, 2005, p. 1). Research has found that implementing effective alternatives instead of using retention will provide students the ability to achieve education outcomes (Jimerson, Pletcher, and Kerr, 2005). The advocates for retention viewed the purposes of retention in the early grades as a way to prevent failure before it occurs. "Sometimes children are recommended for retention when their academic performance is low or if they fail to meet grade-level performance standards established by the district or state. Some children may be recommended for retention if they seem socially immature, display behavior problems, or are just beginning to learn English. Occasionally, students who have missed many school days because they were ill or because of frequent moves are recommended for retention" (Jimerson, Woehr, and Kaufman, 2004, p. 65). The extra year was believed to provide children with additional time for personal adjustment, maturation, and skill development.

One study examining the impact of retention on dropout rates revealed that it has been estimated that currently 2.4 million students are retained every year and it is estimated that it costs over 13 billion dollars per year to pay for the extra year of schooling (Anderson, Whipple, and Jimerson, (2003). Anderson, et al. (2003) goes on to state that retention can lead to unwanted behaviors in the classroom such as aggression, acting out, or other conduct issues. A growing concern about the success of student achievement has created a paradigm shift in public school education in Texas over the past decade. The key elements of this shift have been the educational trend of high stakes testing and accountability resulting in a large increase of students being retained. Grade level retention has been a controversial issue that warrants extensive research. The problem has been schools, teachers, and administrators continued to utilize the practice of retention without knowing if the practice hindered student progress, increased academic performance, or made no difference in the area of student achievement. The relationship between retention and academic achievement of public school children in South Texas needed to be examined. Little was known if the students retained early on in the primary grades levels performed as well as those students not retained as measured by the first administration of the third grade reading Texas Assessment of Knowledge and Skills examination scores.

2.1. Significance of the Study

In 1997 President Clinton announced it was time to end social promotion -- the practice of promoting students to the next grade, regardless of their academic progress. Educators and legislators since then have been clearly listening. Many states, including Texas, have passed laws forbidding the practice; in effect, these states required schools to reinstate retention (Kelly, 1999). According to Darling-Hammond (2003) a comprehensive approach to school improvement has not been pursued by everyone. She goes on to explain that "high stakes testing" for some states are the primary policy reform. States such as Texas have seen rising drop-out rates and the findings have been tied to retention, discouragement, exclusion, and transfer policies encouraged by the implementation of high stakes tests (Darling-Hammond, 2003). Public schools have increased standards and accountability as a result of President Clinton's "end of social promotion" stance, resulting in rigid state mandated tests. George W. Bush then proposed the No Child Left Behind Act (NCLB) of 2001 which required all government run schools receiving federal money to develop and administer a state-wide standardized test.

As of August 8, 2011 there is no bill to reform the federal education law (NCLB) even though a proposal to fix NCLB has been in the Congress for 16 months (U.S. Department of Education, 2011). Testing has been used in many schools to determine whether a child will go on to the next grade or repeat the same grade. More and more students have been facing the possibility of retention because the students were not achieving test scores required for promotion with the current push for high educational standards. Retention was viewed as a way to ensure greater accountability — to guarantee the school was doing its job. In some cases, retention was the new "get tough" policy to stop or reduce "social promotion" (Kelly, 1999). The information gathered from the study may help school districts, administrators, teachers and parents to better understand the effects of retention and the impact of the practice on academic achievement. The information may also be used to formulate school policy which has been more acceptable to help low achieving students be successful in schools.

3. Theoretical Framework

The theoretical framework derived for this study assisted in making sense of the practices of retention and the impact that it has on student learning and closing the achievement gap. The three main areas of focus were on the history of retention, retention effects, and school alternatives. Together, the findings from the literature review provided the theoretical foundation and the guidance for describing and understanding the practices, effects, and findings inherent to this study. Census data indicated the percentage of students retained in grade has risen steadily over the last 25 years. In the mid-1960s about 24% of boys and 16% of girls were at least a year behind grade level by sixth grade; in 1990, those percentages ranged from a low of 24% for white females to a high of 47% for Hispanic males (U.S. Department of Commerce, Bureau of Census, 1966, 1990, cited in Alexander, Entwisle, & Dauber, 1998). "Nationally, by high school, the retention rate for boys is about ten percentage points higher than for girls. In the early grades, retention rates are similar among whites, African Americans, and Hispanics, but by high school, the rate is about 15 percentage points higher for African Americans and Hispanics than for whites" (Thompson & Cunningham, 2001, p. 161). Many educators believed retaining students in grade during their early years in education would not impact them later.

Recent research, however, by Jimerson, Kaufman, Anderson, Whipple, Figueroa, and Rocco et al. (2002) found through a meta-analysis which included children retained from kindergarten through third grade, negative outcomes for students retained at any age could occur. They also stated in the studies conducted retention at any grade level was associated with dropping out later at high school, as well as with other harmful, long-term outcomes. “There is clearly no single silver bullet intervention that will effectively address the specific needs of all low-achieving students” (Jimerson, et al., 2005 p.12). A growing number of schools were implementing alternative intervention programs. Karl Alexander, a Johns Hopkins University professor wrote: *On the Success of Failure: a Reassessment of the Effects of Retention in the Primary Grades* that it was a shame to cast out the terms retention and social promotion and there should be a lot of things in between.

4. Study Design and Methodology

The study employed an ex-post facto design, which is classified as a non-experimental study. Therefore, no causal inferences were made. The reading achievement scores on the first administration of the Texas Assessment of Knowledge and Skills examination was the outcome measure. The predictor variables were 1) retention, 2) gender, 3) ethnicity, 4) socio-economic status, and 5) date of birth.

4.1. Selection Process

The accessible population consisted of the Corpus Christi Independent School District third grade students who took the first administration of the reading Texas Assessment of Knowledge and Skills (TAKS) examination in the 2004 – 2005 school year.

4.2. Data Collection and Analysis

The data for this study had already been collected by the Assessment Office of the Corpus Christi Independent School District and permission was granted to analyze the data for the purpose of this study. The raw data consisted of nearly 13,000 cases, although there were only 2645 students who had taken the third grade TAKS reading assessment. The huge discrepancy was due to the fact that each student had been listed more than once based on the entry and withdrawal dates for each school year. To prepare the data for statistical analyses, the researcher had to go through all 13,000 student data entries one by one to identify the students who had either been retained or not retained prior to their third grade school year, and coded them accordingly. This was a time-consuming process which took nearly 150 hours to complete. The researcher met with one of the university professors to have the data compilation checked for accuracy. This process was done randomly and no errors were detected. Once it was determined that the data collection was accurate, the information that was collected was imported into the Statistical Package for the Social Sciences (SPSS) for the purpose of data analysis.

Descriptive statistics were used to summarize all study variables. All analyses were performed at the .05 level of significance.

The first research question was answered by performing a t-test for independent samples. Specifically, since there were unequal sample sizes (retained = 221, not retained = 2424) and the homogeneity of variances assumption had not been met, Welch approximate t, which does not assume equal variances, was used (Stevens, 1999).

A series of two by two factorial analysis of variance, ANOVA, was employed to answer research questions two to five. Specifically, the main and interaction effects of retention and selected demographic variables on the outcome measure of Texas Assessment of Knowledge and Skills reading achievement scores were investigated. The demographic variables were ethnicity, gender, socio-economic status, and date of birth. For the purpose of data analysis, ethnicity was coded as Hispanic vs. Non-Hispanic, socio-economic status as free or reduced lunch vs. neither free nor reduced lunch, and date of birth as June - August vs. September – May to distinguish between children who were born during the summer months and those who were not. Due to unequal sample sizes and variances, all ANOVA procedures were performed three times, 1) using the original data, 2) using the square root of original data, which is a recommended data transformation procedure for skewed data with heterogeneous variances, and 3) using the Base 10 Logarithm of original data, which is another data transformation procedure for skewed data. The transformed, as well as, original data produced the same results. Additionally, a random sample of 221 students who had not been retained was drawn to form a sample equal to the retained sample. All ANOVA's were repeated, using the two equal samples of retained and not retained students, and the results were the same.

Thus, it was concluded that the original data, transformed data, as well as data obtained from the original two samples (2424 not retained vs. 221 retained) and the two samples of equal number of participants (221 not retained vs. 221 retained) produced the same results. Only original data for all study participants are reported in the study. Hierarchical multiple regression analysis (Stevens, 2002) was performed to answer the last research questions. Specifically, the association between each of the predictor variables (retention, ethnicity, gender, socio-economic status, and date of birth) and the outcome measure of the reading TAKS scores was obtained. Then based on the magnitude of the associations, the predictor variables were ranked from the highest to the lowest. The predictor variables were entered one at a time on the basis of their strength of the association with the TAKS raw scores and the unique contribution of each was examined. Cohen's *d* was used to describe the effect sizes, which was computed by dividing the mean difference by pooled standard deviation. The effect sizes were characterized as .2 = small effect, .5 = medium effect, and > .8 = large effect (Cohen, 1988).

5. Findings

The ex-post facto study investigated third grade students from Corpus Christi Independent School District that took the first administration of the Reading TAKS examination during the 2004-2005 school year. The focus of the study was on the third grade students that were retained prior to the third grade school year. The study sought to determine if there was statistical significance between the students retained early on in the primary grade levels in comparison to students not retained based on the reading achievement scores on the first administration of the TAKS examination. The study also sought to determine if the reading achievement scores were influenced by retention, gender, ethnicity, socio-economic status, and date of birth.

The study affirmed the students not retained outscored the students retained prior to the third grade school year on the basis of the Texas Assessment of Knowledge and Skills raw score.

1. There were two hundred and twenty one students retained ($M=27.56$, $SD=6.79$).
2. There were two thousand four hundred twenty-four students not retained ($M=30.58$, $SD=5.41$).

The results appeared to emphasize the fact early in-grade retention may not be the suitable intervention in helping children "catch-up" or understand previous concepts taught. Other interventions should be considered and tried prior to the contemplating retaining a child in grade. ***Ethnicity***

The study also considered ethnicity and whether or not students retained early on in the primary grade levels influenced the reading achievement scores on the first administration of the TAKS examination. Nearly 74% of the students analyzed in the study were of Hispanic origin. The data showed the differences due to retention were significant, $p<.001$ and the differences due to ethnicity were also significant, $p<.001$, but the retention by ethnicity interaction affect was not significant. The students not retained did better on the TAKS examination than the students retained. Additionally, Non-Hispanic students ($M=31.83$, $SD=4.85$) did better on the third grade reading TAKS examination than Hispanic students ($M=29.80$, $SD=5.75$). When educators looked at the practice of retention at an individual level, according to Jimerson et al. (2002), educators found more minority students retained than white students. Jimerson et.al (2002) went on to state retained students suffered from poor academic achievement and low standardized test scores, numerous school challenges, and absenteeism.

Gender

The retained students in the study consisted of 101 female students and 120 male students. The non-retained sample consisted of 1,241 female students and 1,183 male students. The gender split was relatively similar. The study found gender and the retention by gender affect were not statistically significant. Both female and male students not retained did better on the reading TAKS examination than students, either female or male, retained early-on.

Socio-Economic Status

The results of the study were surprising when the independent variables of socio-economic status and retention were examined. Retention was found to be statistically significant, $p<.001$. Differences due to socio-economic status and retention by socio-economic status interaction affect were not statistically significant. Students not retained performed better on TAKS examination than the students who had been retained. The research showed that socio-economic status did not play an integral part in school success or failure. Researchers such as Alexander, Entwisle, and Dauber (1994) asserted that "academic problems at the very beginning of school are the backdrop to retention."

Alexander, Entwisle, and Dauber (1994) also stressed children raised in poverty have skill deficiencies brought in from outside of school and such problems were likely to be common. The results of the study did not support the assumption, rather the opposite. In the study retention was the backdrop to poor academic achievement on the first administration of the Reading TAKS examination, not if child was economically disadvantaged.

Date of Birth

One of the first questions always asked by an educator when a child has been struggling in school or has had low academic performance is “does the child have a summer birthday?” The perception existed a child born during the summer months lacked both the social skills and developmental ability to be as academically successful as children born in non-summer months. The study found retention to be statistically significant, $p < .001$. The date of birth main effect and the date of birth by retention interaction effect were not statistically significant. The students who had been retained and had birthdays from June to August had an $M = 27.41$, $SD = 6.97$. The students who had been retained and had birthdays from September through May had an $M = 27.66$, $SD = 6.70$. The non-retained students born in the months of June, July, and August had an $M = 30.16$, $SD = 5.56$ and the students who had not been retained and had been born during the months of September through May had a $M = 30.71$, $SD = 5.35$. Findings reveal date of birth does not play a significant role in determining a student’s success on the first administration of the reading TAKS examination.

Unique Contributions

A hierarchical multiple regression analysis was conducted to examine the unique contributions of retention, ethnicity, gender, socio-economic status, and date of birth in explaining variation in the first administration of reading TAKS examination. On the basis of magnitude the predictor variables in the study were analyzed one at a time on the basis of their strength of the association with TAKS raw scores. Ethnicity accounted for 2.5% of the variation, retention accounted for 1.9% of the variation, date of birth accounted for .2%, gender accounted for .1%, and socio-economic status accounted for .1% of the variation. Altogether, the predictor variables for this study only accounted for nearly 5% of the variation in the outcome of the TAKS reading scores. It was statistically significant, $p < .001$. The data showed retention was a statistically significant factor in predicting a student’s TAKS reading scores. Ethnicity was a useful predictor of the outcome measure. Regression analysis revealed nearly five percent of the variation in the TAKS reading scores was explained by all predictor variables, which were low in magnitude, but statistically significant. Use caution when interpreting the results of the study because of the large sample size represented. The other aspect to be considered is that the study only explained around 5% of the variation, leaving 95% unexplained.

6. Recommendations

The findings of the study established the students retained did not perform as well on the first administration of the reading TAKS examination as students not retained prior to the third grade school year. The data from the study provides many ideas for further study. Below is a small sample of recommendations that could be used for future research.

1. Qualitative research is needed to understand the perceptions of teachers in the practice of retaining students.
2. Further research is needed to understand why school districts and school administrators still utilize the practice of retention.
3. A replicated study should be conducted to include similar school districts across South Texas.
4. Research the factors attributed to why boys (especially minority boys) are retained more than girls and determine what practices could be implemented to reduce this phenomenon.

7. Conclusion

Research on grade retention concludes that repeating a grade provides few remediation benefits and may, in the long run, place students at a higher risk of dropping out of school (Jimerson et al., 2005). Research has shown that retention can result in long-term consequences. Repetition of a year’s worth of material does little to help students who have failed. Several comprehensive reviews of the literature on retention have shown similar conclusions: grade retention is an ineffective, if not harmful, practice. In addition, retention is three times more as likely to occur among African American and Hispanic students than among Anglo students (Thomas, 2010) Retention is more likely to impact students from low-income families, minorities, and inner city youth (National Association of School Psychologists, 2003).

8. References

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