Retention Effect on Academic Growth Using the

Measures of Academic Progress Assessment

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A Special Project

Presented to

Dr. Gretta Merwin

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In Partial Fulfillment

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Terri A. Clawson

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FACULTY APPROVAL


Retention Effect on Academic Growth Using the

Measures of Academic Progress Assessment


Approved for the Faculty

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_____, Date

ABSTRACT

The purpose of the project was to gather evidence on the long-term impact of retention on academic growth. If retention had a significant positive impact on student achievement, then implementation of a retention policy should be initiated. The researcher compared MAP scores to determine if there was a significant correlation between retention and academic growth.

The researcher found that scores did improve significantly during the second year of education in mathematics and reading. Most students did not maintain that growth through the seventh or eighth grade. However, the sample size the researcher used was too small to be generalized across a population and should be redone with a larger sample.

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# TABLE OF CONTENTS

Page

# LIST OF TABLES

# LIST OF FIGURES

CHAPTER 1

Introduction

<u>Background for the Project</u>

Did making students repeat a grade help or hinder their academic progress? This question had plagued the researcher for many years. The researcher found, while working in several school districts in Washington State, that some students earned failing grades and yet were sent on to high school. Were these students adequately prepared? There was no formal retention policy in the school district where the researcher was employed. At the end of the 2010-2011 school year, eighth grade teachers discussed individual students who had earned failing grades with regards to their readiness for high school. Recommendation options included retention, completing a summer course prior to promotion, attending an alternative high school, or going on to the high school of record. These recommendations were given to the administration. Some students went through the summer program, some went to the alternative high school and the rest transitioned to their registered high school. No students were retained.

This study analyzed data from seventh grade and eighth grade students who had been retained prior to seventh grade to determine if holding students back for a year had an impact on their academic achievement. The data provided a comparison of test scores before and after retention as well as test scores from the current grade level, using the Measures of Academic Progress (MAP) mathematics and reading assessments.

Statement of the Problem

Did retaining a student have a positive impact on his or her learning? The school district had no specific retention policy; therefore the students had no incentives to do well. The students knew that they would be promoted to the next grade even if they failed their classes. The teachers were hesitant to recommend retention because they did not believe the students would have performed any better academically if the students repeated a year. Also, the teachers believed that there would have been negative behaviors in the students who had been retained. The teachers needed a strategy that motivated the students to work to the best of their ability.

Purpose of the Project

The purpose of the project was to gather evidence on the long-term impact of retention on academic growth. The MAP test gave the researcher measureable data to support or reject the hypothesis that students achieved positive academic growth after repeating a school year. The MAP test also provided information on the students' academic level at seventh or eighth grade. If retention had a significant positive impact on student achievement, then implementation of a retention policy should be initiated.

Delimitations

The researcher investigated seventh and eighth grade students from a middle school in Southeastern Washington State who had been retained at any time during their school career. The research took place during the 2011-2012 school year. The research addressed the differences in reading and mathematics MAP scores before and after retention. The research also addressed the differences in the MAP scores of the students in their current grade to the grade-level expectations. Table 1

showed the demographics of the district of which the elementary and middle schools were a part.

Table 1.

Student Demographics

_____

| | | |
|---|---|---|
| October 2010 Student Count | 16,444 | |
| May 2011 Student Count | 16,346 | |
| Gender (October 2010) | | |
|    Male | 8,482 | 51.6% |
|    Female | 7,962 | 48.4% |
| Race/Ethnicity (October 2010) | | |
|    American Indian/Alaskan Native | 148 | 0.9% |
|    Asian | 446 | 2.7% |
|    Pacific Islander | 61 | 0.4% |
|    Asian/Pacific Islander | 507 | 3.1% |
|    Black | 383 | 2.3% |
|    Hispanic | 5,530 | 33.6% |
|    White | 9,804 | 59.6% |
|    Two or More Races | 72 | 0.4% |
| Special Programs | | |
|    Free or Reduced-Price Meals (May 2011) | 7,828 | 47.9% |
|    Special Education (May 2011) | 1,919 | 11.7% |
|    Transitional Bilingual (May 2011) | 1,849 | 11.3% |
|    Migrant (May 2011) | 1,224 | 7.5% |
|    Section 504 (May 2011) | 129 | 0.8% |
|    Foster Care (May 2011) | 0 | 0.0% |
| Other Information (<u>more info</u>) | | |
|    Unexcused Absence Rate (2010-11) | 7,406 | 0.4% |
|    Annual Dropout Rate (2009-10) | 220 | 4.6% |
|    Estimated Annual On-Time Graduation Rate (2009-10) | 890 | 69.9% |
|    Estimated Annual Extended Graduation Rate (2009-10) | 977 | 76.7% |
|    Actual Adjusted On-Time Cohort Graduation Rate (Class of 2010) | | 70.4% |
|    Actual Adjusted 5-year Cohort Extended Graduation Rate (Class of 2010) | | 76.0% |

_____

<u>Assumptions</u>

All investigated students had been enrolled in a public elementary or middle school within this district before and after retention. Students remained in the system through middle school. Teachers at all grade levels were highly qualified in their content areas. The MAP test was the standard and accepted form

of assessment used to measure annual growth for student learning in both reading and mathematics.

Hypothesis

Students who had been retained showed significant growth in mathematics and/or reading as demonstrated by the MAP assessment during the repeated year. In addition, the students maintained that growth until seventh or eighth grade.

Null Hypothesis

Students who had been retained showed no significant growth in mathematics and/or reading as demonstrated by the MAP assessment during the repeated year. Significance was determined for $p \geq .05$, $p \geq .01$, $p \geq .001$ (Gay, Mills, & Airasian, 2009).

Significance of the Project

Retention was one intervention strategy that was intended to improve student learning. If the MAP scores demonstrated that retained students showed significant growth and maintained grade-level scores at the seventh or eighth grade, the retention would have appeared to have been successful. An assumption could be made that students were deemed prepared for their

5

eighth or ninth grade year. Therefore, teachers would have been more willing to retain students knowing retention was a good tool for improved student learning. On a bigger scale, the district would have been willing to implement a district retention policy that would support effort and achievement at the seventh and eighth grade level.

Procedure

The researcher began the project by looking at the history of every student enrolled in seventh and eighth grade at the researcher's middle school during the 2011-2012 school year. The researcher selected students for the study who had been retained during any school year while enrolled in one of the district's elementary or middle schools. The researcher compared MAP scores in reading and mathematics before and after retention to determine significance of retention. The researcher also compared MAP test scores from the seventh or eighth grade year to state grade-level standard scores to determine if the retained students were at grade level. All of the data was used to generate a correlation coefficient to determine the significance of retention.

Definition of Terms

  Measures of Academic Progress. Measures of Academic Progress was defined as a standardized test used across the district to measure a student's academic growth in mathematics and reading from year to year.

  retention. Retention was defined as a student repeating an entire school year

  social promotion. Social promotion was defined as a student being sent on to the next grade with current classmates regardless of grades earned.

Acronyms

  ELL. English Language Learner

  MAP. Measures of Academic Progress

  NWEA. Northwest Evaluation Association

  OSPI. Office of Superintendent of Public Instruction

  RIT. Rasch Unit

  RTI. Response to Intervention

  SPED. Special Education

CHAPTER 2

Review of Selected Literature

<u>Introduction</u>

Retention remained a controversial topic in education. The researcher looked for articles that would give both sides to the controversy but found it difficult to find any that supported retention. The researcher found evidence that retention had been linked to behavior issues, drop-out rates and low socio-emotional status. The researcher also found evidence of high emotional and financial costs on students and society, respectively.

<u>Academic and Financial Research</u>

Historically, past research had concluded that grade retention was not a good tool for academic intervention. Jimerson (2001b) found there were three major reviews covering studies performed between 1911 and 1989. One review conducted by G. Jackson in 1975 involved 30 studies that were conducted between 1911 and 1973. Another review by Holmes and Matthews that involved 44 studies from 1929 to 1981 was

conducted in 1984 and the last review, also by Holmes, in 1989 involved 19 additional studies.

In 1975, Jackson separated the studies into three different types. The first type was an experimental design. This design looked at students who were randomly retained or promoted (Jimerson, 2001b). The results compared the academics of the students retained against the academics of the students who could have been retained but were promoted instead.

The second design form of study was a pre-post test. This type of study compared the test scores of students before and after retention. The studies also looked at the behaviors and emotions of the students after retention (Jimerson, 2001b).

The final type of review of studies was the naturalistic design. This design compared students who were retained or promoted under normal school policies and studied academics as well as socioemotional adjustments. Jackson found evidence in favor of promotion (Jimerson, 2001b).

A second major review was performed in 1984 by Holmes and Matthews. This review involved 44 studies published and compared various combinations of IQ, gender, academic

achievement, socioeconomic status as well as other factors. Holmes and Matthews found that, overall, the retained students had lower academic achievement and lower self-concept than those students who were promoted (Jimerson, 2001b).

The final major review that was performed was by Holmes in 1989. This involved 19 additional studies. Holmes reported in this meta-analysis that 54 of the 63 indicated negative effects and that the positive effects of the other nine diminished over time (Jimerson, 2001a).

After studying the history of retention for most of the 1900s, Jimerson found that few studies addressed the social and psycholological adjustments of students (Jimerson, 2001a). Before Jimerson's research, the last major study had been in 1989 so Jimerson looked for retention studies that had been performed between 1990 and 1999 and found 20. Jimerson categorized these studies into two sections, academic and emotional. Most of the students examined were from the lower elementary grades. A few of the students were from the middle school age group. The authors of these studies reported that retention by itself was not the best for the students.

Comparisons of the academic results of students retained at lower grades versus higher grades were insignificant (Jimerson, 2001b). Out of the 20 studies included in this meta-analysis only four supported retention. Three were from the early, K-4, grades. Jimerson (2001b) found that retained students had scored lower than the promoted students but in the subsequent year their scores improved. However, retention alone was not the best practice. Remediation with early reading programs was more constructive than repeating the same curriculum.

In 2006, Lorence analyzed the meta-analysis of Holmes and Jimerson. Lorence (2006) found a few flaws in these studies. Some teachers used retention strategies not consistent with district policies. The students that were studied were assumed to be similar but the matching did not always work. The promoted students were a year ahead of those retained. This caused a problem in comparing the grade-equivalent scores. Lorence also found that the sample sizes were too small, students were not adequately matched and some students were tested at the beginning of the year while others were tested at the end of the year.

The Massachusetts Department of Education (2006) put out a report regarding the numbers involved with retention. The report documented the numbers and percentages of students that were retained and the grades that those students were retained in. The department put the report out not as a supporter or antagonist of retention but as a document the districts were to use in their decision-making regarding retention. According to Massachusetts Department of Education (2006), in Massachusetts there was a 2.6% retention rate. The students missed an average of 26.3 days the year they were retained and only 24.9 days the second year of the repeated grade. The state used a Massachusetts Comprehensive Assessment System (MCAS) to evaluate the students. Of those students retained, those retained in 4th grade had the highest percentage of students, 39%, that showed improvement during the repeated grade. The students in the eighth grade showed the lowest percentage of students, 19%, that showed improvement (Massachusetts Department of Education, 2006).

These were not the only numbers that were found. Xia and Glennie (2005) found that retention increased the risk of

dropping out by 30%-50%. This led to a high economic cost for both the students and society. The national average cost of educating a student during the 2001-2002 school year was $7,523. Jimerson (2001b) found that between 5%-10% of all students or 2.4 million students in the nation were retained. Therefore the cost to repeat a year amounted to approximately $18 billion. However, this amount was reduced by the savings generated by the students who dropped out of high school.

There were two more financial factors affected by retention. The first was the lifelong earnings of students who had dropped out. The average lifetime earnings for a dropout were less than those with a high school diploma (Xia & Glennie, 2005). This then lessened the amount of taxes communities collected for needed services.

The other factor involved crime. Research found that students who had been retained showed a higher level of poor behavior. Juvenile detention costs per crime ranged from $1100 to $1928 in 1995 (Xia & Glennie, 2005). Juvenile delinquency was a strong indicator of adult crime. The operation expense per crime in Washington D.C. averaged $17,047. Added to this

amount were the victims' losses. These costs ranged from $370 to $1.2milliion which included pain and suffering.

<u>Relationship Between Retention and Drop-out Rates</u>

There have been many reasons why a student was retained. These reasons included lack of maturity, lack of readiness to be promoted, and hope for improved academic achievement. Retention was an intervention strategy to improve the achievement of higher standards and alleviate social promotion. However, the negatives that have been identified as either precursors to retention or the effects of retention have been considered to outweigh the positives.

There were two positives that the researcher found during the study. The first was that some students did improve academically in the year immediately following retention. The growth however did not last long term. The other was that retention was a predictor of dropping out (Jimerson, Ferguson, Whipple, Anderson, & Dalton, 2002). Having known this, students on the at-risk list may have been given different interventions to help them be successful. Other options could have included summer school classes or tutoring, for example.

The number of negatives the researcher found outweighed these positive attributes. First, the socio-emotional impact on the student was a major influence on student drop-out rate. Students who had been retained "had been shown to have lower self-esteem" (Stearns, Moller, Blau, & Potochnick, 2007, p.212). They were seen as failures by themselves as well as their peers. Students had to make new friends while overcoming the label of having flunked. With friends being a reason some students went to school, students may have felt alienated from school when retained (Stearns et al., 2007). Low self-esteem added to the lack of motivation to improve.

A second negative found was that behavior problems increased with retained students. When a student was retained and deemed a failure, he or she looked for other ways to be successful (Stearns et al., 2007). Some of these could have included acting out, becoming class clown or keeping others off task as to not look stupid. Penna and Tallerico (2005) found that students also made some bad choices such as drug use and skipping school which added to their lack of academic success. Older students gained positive feedback with jobs. However, as

the job became more appealing, school became less which also led to dropping out.

Another problem of retention was that it did not appear to work. A few years after retention the academic outcomes were below those of their peers (Bowman, 2005). One thing students said in the Penna and Tallerico (2005) study was that taking the same class again was unhelpful. The same teacher taught the same curriculum without extra help. This added to their frustration and poor behavior. If there was a positive relationship with the teacher, however, there was a less likely chance of students dropping out between the tenth and twelfth grades (Stearns et al., 2007). When a student was retained, he or she may have developed a negative view on school and those associated with school so retained students were less likely to ask for help from a teacher.

Low reading scores were equated to poor behavior (Jimerson et al., 2002). Poor behavior led to retention. Retention led to dropping out. Students who dropped out earned lower income and were more likely to be on welfare or in jail (Bowman, 2005). Educators found that it became less clear

16

whether a student had chosen not to learn, was unable to learn or lacked the resources needed to learn.

Decision Practices Regarding Retention

The 1983 A Nation at Risk Report played an important role in retention policies (Bowman, 2005). Bowman (2005) stated that social promotion was looked down on because students did not have the skills necessary to move on to the next grade. Some factors that have been looked at to determine if students were to be retained included the number of times a student could be retained, the number of years behind grade level a student was, and cutoff scores on district tests (Bowman, 2005). Policies for retaining a student have varied across the country. Murray, Woodruff and Vaughn (2010) found that principals from elementary schools in one district from the southwest knew their own building policy for retention but not of one for the entire district.

The policy for the district in which this study took place stated, "Retention will be considered as the option of last resort. The building review committee will take all factors into consideration, including the cooperation of the student in

working through various interventions tried during the school year" (Administrative Regulation No. 2421). Teachers have made recommendations for retention in order to help the students. Parents have also made recommendations when their children had shown a lack of initiative or lack of cooperation (Akmal & Larsen, 2004). Psychologists were not usually on the committee to determine retention (Schnurr, Kundert, & Nickerson, 2009). If they would have been part of the process, students who had been at risk may have been identified sooner. Students may have been monitored by the counselors once retained to help alleviate any negative esteem factors.

Discussions have occurred as to which grade level was more beneficial for a student to repeat. Witmer, Hoffman and Nottis (2004) found there was a discrepancy in the beliefs of teachers from the K-2 grades and the 3-4 grades. The teachers of the younger group used academic performance as a guiding factor for recommending retention. The teachers of the older students used academic performance as well as the effect on self esteem as a determining factor for retention. Self-esteem appeared to impact the positive or negative view students had

about their retention. Teachers were hopeful that retaining a student in the early years would prevent failure in future years (Silberglitt, Jimerson, Burns, & Appleton, 2006). In high school, retention included students repeating a single class to meet graduation requirements. Teachers found it was difficult to promote when the student was not prepared (Akmal & Larsen, 2004). There needed to be something to hold the students accountable for their education.

Social promotion did not appear to work for students any better than retention. Schools needed to find other options to help students be successful. Murray and others (2010) investigated the effect of implementing a response to intervention (RTI) in reading on the retention level of first-grade students. The new program was believed to have helped reduce the number of retained students but an increase in disruptive behaviors from those retained was noticed. The students were given additional support from teachers. Teachers' preparedness played a factor on the engagement of students. Different strategies of instruction provided an alternative intervention to retention. Students that dealt with issues outside of the school

needed something more than education. Low socio-economic status of students also seemed to be connected to the retention rates. Teachers needed to put forth a caring attitude and control what they could control (Akmal & Larsen, 2004).

Summary

There were many studies conducted during the twentieth century regarding retention. Most did not support retention as a solution to the academic problems of students. The studies showed that although there was a short-term improvement of test scores during the repeated year, this improvement was not maintained over the long term. Many studies demonstrated that the emotional impact of retention on students was negative. Attendance dropped and poor behaviors increased. Students who had been retained were determined to be at a higher risk level of dropping out, earning lower incomes than those who had been promoted, and ending up in jail.

Teachers involved in these studies believed that retention alone would not solve the problems the students were having in school. Teachers needed to find alternative methods to reach the students.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The researcher had been part of many decisions regarding

the promotion or retention of eighth-grade students. During the

2009-2011 school years, there was no retention policy in place

in the building where the researcher was employed. The

researcher conducted an investigation with the purpose of

gathering evidence regarding retention as a successful strategy

to help low-achieving students. The researcher found which of

the students had been retained, what year they had been

retained and what their MAP mathematics and reading scores

were before and after retention. The MAP scores were used to

measure the academic growth the students achieved after

repeating the same year of school.

Methodology

The researcher used an experimental research method to

compare three different years of test scores for one group of

students. Experimental research involved the manipulation of an

independent variable and observing the results on the dependent

variable (Gay et al., 2009). Retention, the independent variable in this investigation, was the treatment provided to the sample of students. The dependent variables in this investigation were the MAP test scores in reading and mathematics. The MAP test scores were used to measure the effect of retention on the academic growth of the students. Because numerical data was compared, this was a quantitative study. "Quantitative research is the collection and analysis of numerical data to describe, explain, predict, or control phenomena of interest" (Gay et al., 2009, p.7).

Participants

The criterion-based sample was selected from a middle school that had approximately 900 students. The seventh and eighth grade students were selected to be in the study if they had been retained at any grade level. Another study criterion was that students had also been enrolled in the current school district for both their elementary and middle school years. The sample included 13 students, 7 eighth graders and 6 seventh graders. The ethnic make-up of the sample included 7 Hispanic

students, 5 Caucasian students and 1 Black student. There were 3 girls and 10 boys.

Instrument

The instrument used to measure student academic growth was the Measures of Academic Progress (MAP). This was the evaluation that had been used for many years in the researcher's district. The test was an online, adaptive test in three subject areas; mathematics, reading and language. This test generated a RIT Scale, or Rasch Unit, that measured understanding regardless of grade level. The RIT scores were tracked from year to year to monitor a student's progress.

Reliability of the MAP test answered the question, "To what extent does the test administered to the same students twice yield the same results from one administration to the next?" (Northwest Evaluation Association, 2004, p.1). A number of test-retests were conducted generating a Pearson r coefficient. A coefficient of .80 was considered acceptable (NWEA, 2004). The reliability coefficient of the MAP test reliability ranged from .83 to .93 from 1999 to 2002.

The validity of the MAP test was based on comparing the test with other tests that assessed the same content on the same students and used different grading scales. The validity was also demonstrated using a Pearson r coefficient. A strong correlation was demonstrated with a .80 as well. The validity coefficient ranged from .84 to .96 (NWEA, 2004).

## Design

The researcher used a pre-experimental design to perform this study. The design used was the one-group pretest-posttest design to determine if retaining a student had a positive impact on his or her academic achievement. Scores from the tests of the year prior to the retention were compared to the scores from the tests of the year after the retention. This form of design did not control for threats to validity such as maturation, testing, instrumentation, regression or mortality (Gay et al., 2009).

## Procedures

The researcher began this investigation by looking for a sample group. The sample group was selected by looking up every student in the seventh and eighth grade on the grade-book program to determine if they were retained while in the

current school district. The researcher found 15 eighth-grade and 13 seventh-grade students that had been retained between the first and eighth grade. The researcher then looked to see if there was a MAP test administered in the original year and in the retained year for each of the 28 students. If there were not scores for both years for the student, then that student was eliminated from the sample.

After the students were selected, three years of MAP scores were reviewed for reading and mathematics; one each for the years repeated and one for the current grade, seventh or eighth, in which the student was enrolled. The researcher gathered the overall MAP scores as well as the students' percentile ranking. The researcher used information from NWEA to gather the cut score required for a student to have reached grade level expectations.

Data Treatment

MAP scores were used to measure the significance between the pretest and posttest after retention had occurred. Charts and graphs were used to display the data gathered. The Spearman rho test was performed using STAT-PAK software to determine

the significance of retention on MAP scores and grade-level expectations over a period of time.

Summary

The researcher followed a specific plan to determine the effectiveness of retention on MAP scores. The research was a pre-experimental design in the form of test-retest with a small group of students. The threats to validity were not controlled in this experiment. The significance between MAP scores and retention was determined by using the Spearman rho test; $p > .05$, $p > .01$, and $p > .005$ (Gay et al., 2009).

CHAPTER 4

Analysis of the Data

<u>Introduction</u>

This study analyzed data from seventh grade and eighth

grade students who had been retained to determine if holding

students back for a year had an impact on their academic

achievement. The data provided a comparison of test scores

before and after retention as well as test scores from the current

grade level, using the Measures of Academic Progress (MAP)

mathematics and reading assessments. The researcher used

STAT-PAK software to determine the significance of retention on

academic achievement.

<u>Description of the Environment</u>

The researcher investigated seventh and eighth grade

students from a middle school in Southeastern Washington State

who had been retained at any time during their school career.

The research took place during the 2011-2012 school year. The

research addressed the differences in reading and mathematics

MAP scores before and after retention. The research also

addressed the differences in the MAP scores of the students in their current grade to the grade-level expectations.

Hypothesis

Students who had been retained showed significant growth in mathematics and/or reading as demonstrated by the MAP assessment during the repeated year. In addition, the students maintained that growth until seventh or eighth grade.

Null-Hypothesis

Students who had been retained showed no significant growth in mathematics and/or reading as demonstrated by the MAP assessment during the repeated year. Significance was determined for $p \geq .05$, $p \geq .01$, $p \geq .001$ (Gay et al., 2009).

Results of the Study

The results of this study provided data that addressed the hypothesis. Varying results were found when the students with high needs were left out of the analysis because of being outliers of the data. The data demonstrated that students who had been retained, on average, improved academically during the repeated year but the growth diminished by the seventh or eighth grade.

Table 2 set up the scores used for the data analysis. The researcher used the actual test scores of the student for reading. The researcher then used the cut scores from the NWEA to demonstrate the grade level score. Then, the researcher calculated the difference to determine how far from grade level the student was. The positive numbers represented above grade level scores while negative numbers represented below grade level scores. The last 4 students in Table 2 were in their second year of content and in their current grade level simultaneously. Therefore, there were no current grade-level scores available.

Table 2.

*Reading MAP Scores*

| 1st year RIT | Cut Score | Diff. | 2nd year RIT | Cut Score | Diff. | Current year | Cut Score | Diff. |
|---|---|---|---|---|---|---|---|---|
| 201 | 197 | 4 | 217 | 197 | 20 | 220 | 217 | 3 |
| 150 | 172 | -22 | 165 | 172 | -7 | 216 | 216 | 0 |
| 198 | 211 | -13 | 227 | 211 | 16 | 222 | 217 | 5 |
| 202 | 211 | -9 | 207 | 211 | -4 | 207 | 217 | -10 |
| 193 | 197 | -4 | 203 | 197 | 6 | 210 | 217 | -7 |
| 196* | 211 | -15 | 186 | 211 | -25 | 175 | 217 | -42 |
| 160* | 217 | -57 | 143 | 217 | -74 | 143 | 217 | -74 |
| 191* | 211 | -20 | 185 | 211 | -26 | 193 | 216 | -23 |
| 182* | 211 | -29 | 186 | 211 | -25 | 191 | 216 | -25 |
| 214+ | 216 | -2 | 210 | 216 | -6 | | | |
| 229+ | 217 | 12 | 237 | 217 | 20 | | | |
| 213+ | 216 | -3 | 200 | 216 | -16 | | | |
| 203+ | 216 | -13 | 225 | 216 | 9 | | | |

* SPED or ELL students
+2nd year was considered current year as well

A correlation coefficient of .75 was generated for reading

MAP scores using Spearman rho. The degrees of freedom were

11.  This comparison used all students. When the outlier values

of the SPED students were removed, the coefficient calculated to

.38. The degrees of freedom in this instance were 7.

Table 3.

Spearman Rho Analysis for Reading

| Statistic | All students | All students less outliers |
|---|---|---|
| Rho = | .75 | .38 |
| N= | 13 | 9 |
| DF= | 11 | 7 |

$$\text{RHO} = 1 - \frac{6 \sum d^2}{N(N^2 - 1)} \qquad = 1 - \frac{6 \sum d^2}{N(N^2 - 1)} \qquad = 1 - \frac{6 \sum d^2}{N(N^2 - 1)}$$

$$= 1 - \frac{6\,(91.5)}{13(13^2 - 1)} \qquad = 1 - \frac{6\,(75)}{9(9^2 - 1)}$$

$$= 1 - .2513 \qquad = 1 - .625$$

Significance was determined at p≥.05, p≥.01 and p≥.001

(Gay et al., 2009, p.558). The null hypothesis for reading was

rejected, thereby the hypothesis was supported at p≥.05

because the coefficient was .5529 and at p≥.01 because the

coefficient was .6835. The null hypothesis was accepted at

p≥.001 because .8010 was greater than .75. When the SPED

and ELL students were removed from the calculations, the null

for reading was accepted at all levels, therefore the hypothesis

was not supported because p≥ .38 was found at all levels.

Table 4.

*Correlation Coefficient Reading*

|  | | P | |
| --- | --- | --- | --- |
| *df* | .05 | .01 | .001 |
| 7 | .6021 | .7348 | .8471 |
| 11 | .5529 | .6835 | .8010 |

Table 5 set up the scores used for the data analysis. The researcher used the actual test scores of the student for mathematics. The researcher then used the cut scores from the NWEA to demonstrate the grade level score. Then, the researcher calculated the difference to determine how far from grade level the student was. The positive numbers represented above grade level scores while negative numbers represented below grade level scores. There were no current-year scores available for one of the SPED students. The last 4 students in Table 5 were in their second year of content and in their current grade level simultaneously. Therefore, there were no current grade level scores available.

Table 5.

*Mathematics MAP Scores*

| 1st year RIT | Cut Score | Diff. | 2nd year RIT | Cut Score | Diff. | Current year | Cut Score | Diff. |
|---|---|---|---|---|---|---|---|---|
| 206 | 204 | 2 | 216 | 204 | 12 | 228 | 233 | -5 |
| 208 | 222 | -14 | 231 | 222 | 9 | 230 | 233 | -3 |
| 208 | 222 | -14 | 213 | 222 | -9 | 215 | 233 | -18 |
| 214 | 204 | 10 | 235 | 204 | 31 | 229 | 233 | -4 |
| 194* | 233 | -39 | 161 | 222 | -61 | 177 | 233 | -56 |
| 185* | 233 | -48 | 175 | 233 | -58 | 175 | 233 | -58 |
| 202* | 222 | -20 | 207 | 222 | -15 | | | |
| 177* | 222 | -45 | 185 | 222 | -37 | 185 | 233 | -48 |
| 210+ | 227 | -17 | 217 | 227 | -10 | | | |
| 229+ | 233 | -4 | 237 | 233 | 4 | | | |
| 217+ | 227 | -10 | 223 | 227 | -4 | | | |
| 210+ | 227 | -17 | 215 | 227 | -12 | | | |

* SPED or ELL students
+ 2nd year was considered current year as well

A correlation coefficient of .95 was generated for mathematics MAP scores using Spearman rho. The degrees of freedom were 10. This comparison used all students. When the outlier values of the SPED students were removed, the coefficient calculated to .89. The degrees of freedom in this instance were 6.

Table 6.

Spearman Rho Analysis for Mathematics

| Statistic | All students | All students less outliers |
|---|---|---|
| Rho = | .95 | .89 |
| N= | 12 | 8 |
| DF= | 10 | 6 |

$$\text{RHO}= 1 - \frac{6\sum d^2}{N(N^2-1)} \qquad = 1 - \frac{6\sum d^2}{N(N^2-1)} \qquad = 1 - \frac{6\sum d^2}{N(N^2-1)}$$

$$= 1 - \frac{6\,(15)}{12(12^2-1)} \qquad = 1 - \frac{6\,(9)}{8(8^2-1)}$$

$$= 1 - .05244 \qquad = 1 - .10714$$

Significance was determined at p≥.05, p≥.01 and p≥.001 (Gay et al., 2009, p.558). The null hypothesis for mathematics with the smaller group of students was rejected, thereby the hypothesis was supported at p≥.05 because the coefficient was .7067 and at p≥.01 because the coefficient was .8343. The null was accepted at p≥.001 because .92493 was greater than rho which was calculated at .89.  When all students were included in the calculations, the null for mathematics was rejected at all levels; therefore the hypothesis was supported because rho equaled .95 which was greater than all values of p.

Table 7.

*Correlation Coefficient Mathematics*

|  | *p* | | |
| --- | --- | --- | --- |
| *df* | .05 | .01 | .001 |
| 6 | .7067 | .8343 | .92493 |
| 10 | .5760 | .7079 | .8233 |

Significance was shown for academic growth during the second year for retained students. Figure 1 showed that 8 out of the 13 students showed growth during the repeated year. Five students were above grade level after the repeated year of education. When the SPED and ELL students were removed from the calculations, 7 out of 9 students showed growth but was not considered to be significant. The figure also showed that out of the 9 who had a current-year score, 5 scores had dropped, 2 increased, 2 remained the same. Three students remained at or above grade level.
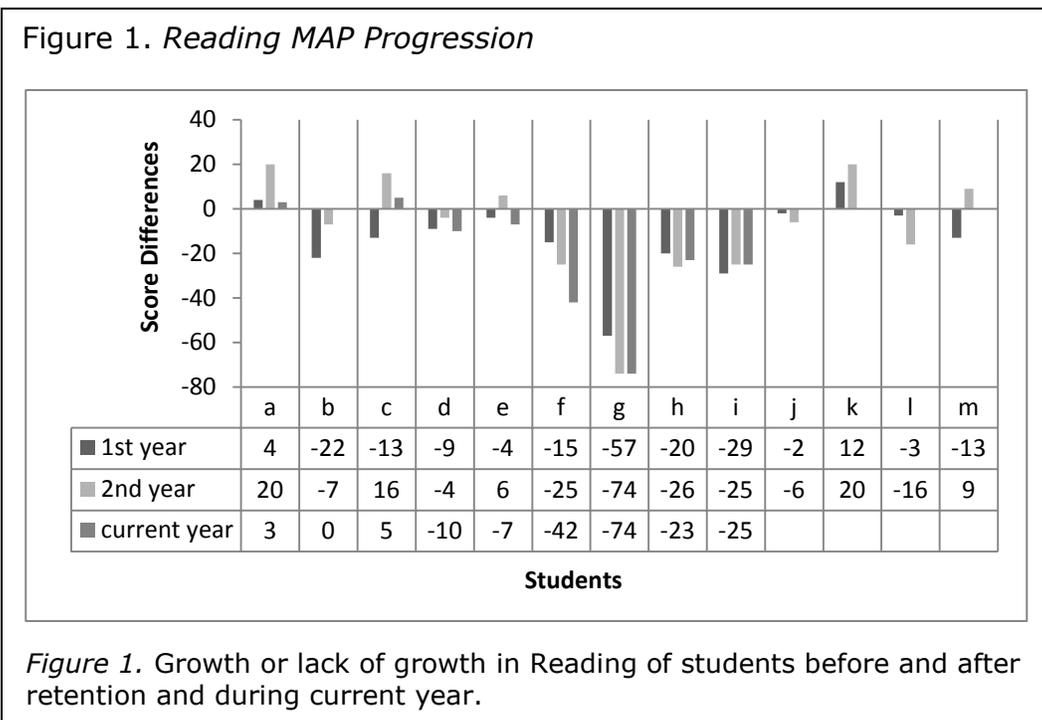
Figure 1. *Reading MAP Progression*



| | a | b | c | d | e | f | g | h | i | j | k | l | m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ■ 1st year | 4 | -22 | -13 | -9 | -4 | -15 | -57 | -20 | -29 | -2 | 12 | -3 | -13 |
| ▨ 2nd year | 20 | -7 | 16 | -4 | 6 | -25 | -74 | -26 | -25 | -6 | 20 | -16 | 9 |
| ■ current year | 3 | 0 | 5 | -10 | -7 | -42 | -74 | -23 | -25 | | | | |

**Students**

*Figure 1.* Growth or lack of growth in Reading of students before and after retention and during current year.

Significance was shown for academic growth during the second year for retained students. Figure 2 showed that 10 out of the 12 students showed growth during the repeated year. Four students were above grade level after the repeated year of education. When the SPED and ELL students were removed from the calculations, 7 out of 9 students showed growth and was still considered to be significant, unlike the reading scores. The figure also showed that out of the 7 who had a current-year score, 5 scores had dropped, 1 increased and 1 remained the same. No students remained at or above grade level.

Figure 2. Mathematics MAP Progression



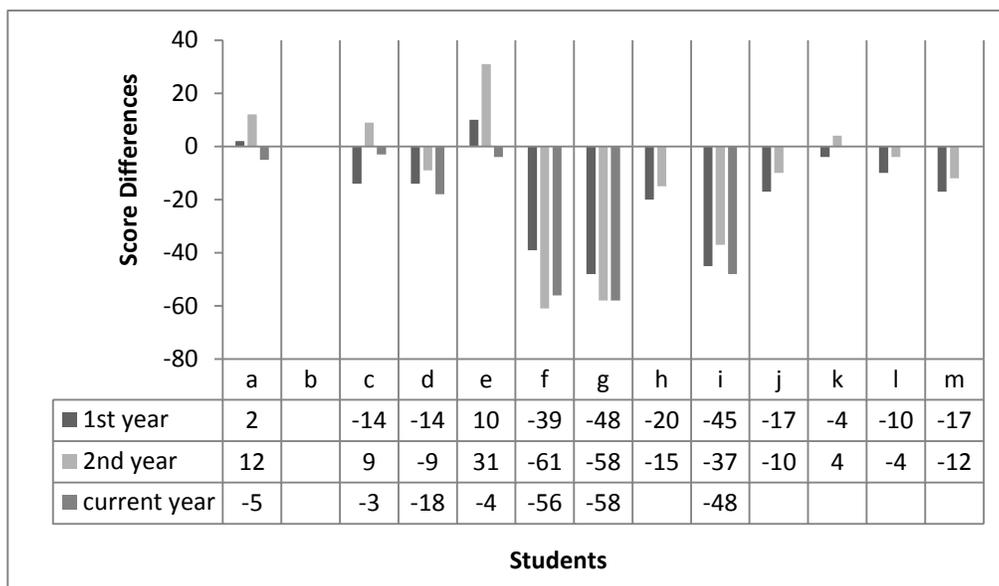| | a | b | c | d | e | f | g | h | i | j | k | l | m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ■ 1st year | 2 | | -14 | -14 | 10 | -39 | -48 | -20 | -45 | -17 | -4 | -10 | -17 |
| ■ 2nd year | 12 | | 9 | -9 | 31 | -61 | -58 | -15 | -37 | -10 | 4 | -4 | -12 |
| ■ current year | -5 | | -3 | -18 | -4 | -56 | -58 | | -48 | | | | |

**Students**

*Figure 2.* Growth or lack of growth in Mathematics of students before and after retention and during current year.

Discussion

The research both confirmed and rejected the researcher's expectations. The researcher expected to see growth during the retained year as well as the growth carried through the students' current year. The researcher found that test scores did improve during the repeated year but dropped below grade level by the current year.

Jimerson (2001b) found that retained students had scored lower than the promoted students but in the subsequent year their scores improved. The researcher did not use a control group to test this on, however, the MAP test scores of the sample group showed that scores did improve during the repeated year but declined by the students' current year. One noticeable item found was that in reading, 2 students, although their scores dropped, remained above grade level.  One improved to reach grade level. In mathematics, however, all students dropped below grade level by their current year after having growth during the repeated year.

From chapter 2, Lorence (2006) found that the sample sizes were too small and some students were tested at the

beginning of the year while others were tested at the end of the year. The researcher also found these to be issues as well. The researcher divided the students into three groups; those retained before their current year, those retained in their current year and those who had special needs. This made the sample sizes 5, 4 and 4 respectively, much too small to be able to generalize across a population. Thirteen students was not a size that could be generalized across a population either, however, it was a larger group to work with. Jimerson (2001b) found that between 5%-10% of all students or 2.4 million students in the nation were retained. The percentage of students retained in this study was 4.4%, close to the national average. The test scores' timing was also a difficulty the researcher found. Some of the students did not take the test in the spring so the researcher used the scores from the fall. This could have skewed the results of the study.

Bowman (2005) stated that social promotion was looked down on because students did not have the skills necessary to move on to the next grade. Based on the MAP scores, most of the students retained were below grade level in reading and

mathematics during their first year. Test scores improved significantly during the second year. Retention was shown to be a significant factor in academic improvement. This confirmed that social promotion may not have been the best choice for these students.

<u>Summary</u>

Did making students repeat a grade help or hinder their academic progress? The researcher hypothesized that students would have demonstrated significant growth during a repeated year and then maintained that growth through their current year of school. The researcher calculated the differences between the actual MAP test scores of the students and the grade-level cut scores. Then the researcher used the Spearman rho from STAT-PAK software to determine significance of growth.

For reading, rho was calculated at .75 when all students were included in the calculations. The null hypothesis that there would be no significant growth was rejected at $p \geq .05$ and $p \geq .01$. When the SPED and ELL students were removed from the calculations, rho equaled .38. The null was accepted at all levels which showed no significant growth for the students.

The mathematics MAP scores had a different outcome. The correlation coefficient for rho was .95 for all students and rho was .89 without the SPED and ELL students. The null was rejected at all levels except for $p \geq .001$ when rho equaled .89. This showed a high significant correlation between retention and improved mathematics score during the repeated year.

The researcher's hypothesis that there would be significant growth during the repeated year was supported for all students in mathematics. There was a mixed outcome for reading. When all students were included, there was significant growth but when the growth of the SPED and ELL students was removed, there was no significant growth for the rest of the students. Lastly, the hypothesis that the growth would be maintained through the students' current year was not supported.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

The researcher found, while working in several school districts in Washington State, that some students earned failing grades and yet were sent on to high school. Were these students adequately prepared? The researcher analyzed data from MAP scores for seventh grade and eighth grade students who had been retained to determine if holding students back for a year had an impact on their academic achievement. The data provided a comparison of test scores before and after retention as well as test scores from the current grade level.

Summary

Many studies conducted during the twentieth century regarding retention did not support retention as a solution to the academic problems of students. Researchers found that the long-term emotional impact of retention on students was negative. Attendance dropped and poor behaviors increased. The researcher found that students who had been retained were determined to be at a higher risk level of dropping out, earning

43

lower incomes than those who had been promoted, and ending up in jail. The researcher found studies that showed that although there was a short-term improvement of test scores during the repeated year, this improvement was not maintained over the long term.

The researcher used a pre-experimental design in the form of test-retest with a small group of students to determine if test scores did in fact improve the year after retention. The threats to validity were not controlled in this experiment. The correlation coefficient between MAP scores and retention was calculated by using the Spearman rho test. Significance was compared to $p>.05$, $p>.01$, and $p>.005$ (Gay et al., 2009).

Finally, the researcher used MAP scores to find out if the retained students had remained at grade level during the study time period. This could have indicated an ability of the students to progress to the next grade.

Conclusion

The researcher hypothesized that students would have demonstrated significant growth during a repeated year and then maintained that growth through their current year of school.

For reading, the researcher found that there was significant growth when the general education students, ELL and SPED students' scores were combined after retention.  However, the scores of the general education students alone showed no significant growth.

 The mathematics MAP scores had a different outcome. The researcher's hypothesis that there would be significant growth during the repeated year was supported for all students in mathematics. When the SPED and ELL students' scores were removed, there was still significant growth for the general education students.

Lastly, the hypothesis that the growth would be maintained through the students' current year was not supported. One noticeable item found was that in reading, 2 students, although their scores dropped, remained above grade level.  One improved to reach grade level. In mathematics, however, all students dropped below grade level by their current year after having demonstrated growth during the repeated year.

<u>Recommendations</u>

The main recommendation that the researcher would suggest was to redo this study with a larger sample. Thirteen students was not a large enough group to generalize across a population. Also, the students should be grouped differently in any future studies. The SPED and ELL students had different needs and reasons for being retained. Studies that compared like students would have provided more accurate data.

Another way retention could be tracked would be to select students who were retained in first or second grades and fourth or fifth grades and follow them throughout their schooling.  A researcher should compare the test scores for all of these students each year to see if there was a relationship between the grade level retained and maintaining grade-level test scores.

One final suggestion would be to find comparable students with comparable test scores that had not been retained. Then compare those students' MAP scores with the retained students' test scores to determine if there was a significant difference between retained students and non-retained students at the seventh or eighth grade level.

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Table A1.
*Student Reading Data*

| Student and Year Retained | 1st Year Reading | | | | 2nd Year Reading | | | | Current Year Reading | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Actual RIT | % | Grade Level Score | RIT-MAP | Actual RIT | % | Grade Level Score | RIT-MAP | Actual RIT | % | Grade Level Score | RIT-MAP |
| A - 4TH | 201 | 44 | 197 | 4 | 217 | 77 | 197 | 20 | 217 | 52 | 217 | 3 |
| B - 2ND | 150 | 1 | 172 | -22 | 165 | 5 | 172 | -7 | 216 | 49 | 216 | 0 |
| C - 6TH | 198 | 10 | 211 | -13 | 227 | 77 | 211 | 16 | 222 | 52 | 217 | 5 |
| D - 6TH | 202 | 16 | 211 | -9 | 207 | 26 | 211 | -4 | 207 | 17 | 217 | -10 |
| E - 4TH | 193 | 17 | 197 | -4 | 203 | 40 | 197 | 6 | 210 | 22 | 217 | -7 |
| F - 6TH - LIFESKILLS | 196 | 8 | 211 | -15 | 186 | 2 | 211 | -25 | 175 | 1 | 217 | -42 |
| G - 8TH - SPED | 160 | 1 | 217 | -57 | 143 | 1 | 217 | -74 | 143 | 1 | 217 | -74 |
| H - 6TH - ELL | 191 | 4 | 211 | -20 | 185 | 2 | 211 | -26 | 193 | 4 | 216 | -23 |
| I - 6TH - LIFESKILLS | 182 | 1 | 211 | -29 | 186 | 2 | 211 | -25 | 191 | 3 | 216 | -25 |
| J - 7TH | 214 | 35 | 216 | -2 | 210 | 33 | 216 | -6 | | | | |
| K - 8TH | 229 | 38 | 217 | 12 | 237 | 47 | 217 | 20 | | | | |
| L - 7TH | 213 | 32 | 216 | -3 | 200 | 10 | 216 | -16 | | | | |
| M - 7TH | 203 | 12 | 216 | -13 | 225 | 73 | 216 | 9 | | | | |

NOTE: Actual RIT represented students' actual test scores
% represented the percentage of students at or below actual RIT
Grade-Level Score represented the cut score for each grade level
RIT-MAP represented the actual RIT less the grade-level score to determine how far from grade level each student was. - showed student was below grade level

54

APPENDIX B

Table B1.
Student Mathematics Data

| Student and Year Retained | 1st Year Reading | | | | 2nd Year Reading | | | | Current Year Reading | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Actual RIT | % | Grade Level Score | RIT-MAP | Actual RIT | % | Grade Level Score | RIT-MAP | Actual RIT | % | Grade Level Score | RIT-MAP |
| A – 4TH | 206 | 42 | 204 | 2 | 216 | 60 | 204 | 12 | 228 | 39 | 233 | -5 |
| B – 2ND | | | 177 | | 181 | 68 | 177 | 4 | 233 | 67 | 227 | 6 |
| C – 6TH | 208 | 14 | 222 | -14 | 231 | 63 | 222 | 9 | 230 | 44 | 233 | -3 |
| D – 6TH | 208 | 14 | 222 | -14 | 213 | 22 | 222 | -9 | 215 | 15 | 233 | -18 |
| E – 4TH | 214 | 54 | 204 | 10 | 235 | 95 | 204 | 31 | 229 | 41 | 233 | -4 |
| F – 6TH – LIFESKILLS | 194 | 2 | 233 | -39 | 161 | 1 | 222 | -61 | 177 | 1 | 233 | -56 |
| G – 8TH – SPED | 185 | 1 | 233 | -48 | 175 | 1 | 233 | -58 | 175 | 1 | 233 | -58 |
| H – 6TH – ELL | 202 | 7 | 222 | -20 | 207 | 12 | 222 | -15 | | | | |
| I – 6TH – LIFESKILLS | 177 | 1 | 222 | -45 | 185 | 1 | 222 | -37 | 185 | 1 | 233 | -48 |
| J – 7TH | 210 | 12 | 227 | -17 | 217 | 30 | 227 | -10 | | | | |
| K – 8TH | 229 | 38 | 233 | -4 | 237 | 60 | 233 | 4 | | | | |
| L – 7TH | 217 | 22 | 227 | -10 | 223 | 38 | 227 | 4 | | | | |
| M – 7TH | 210 | 12 | 227 | -17 | 215 | 22 | 227 | -12 | | | | |

NOTE: Actual RIT represented students' actual test scores.
% represented the percentage of students at or below actual RIT
Grade-Level Score represented the cut score for each grade level
RIT-MAP represented the actual RIT less the grade-level score to determine
how far from grade level each student was. - represented below grade level

55