A Study of the Relationship Between Grade Point Average, Reading Fluency and the Washington Assessment of Student Learning

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A Special Project

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FACULTY APPROVAL

A Study of the Relationship Between Grade Point Average, Reading Fluency and the Washington Assessment of Student Learning

Approved for the Faculty,

_____, Faculty Advisor

ABSTRACT

The purpose of this correlation research study was to determine which type of intervention, focused on fluency, or focused on GPA, had a higher relationship to student performance on the WASL. To accomplish this purpose, a review of selected literature was conducted. Additionally, a Pearson-R correlation coefficient was utilized for purposes of data analysis, from which related generalizations, conclusions and recommendations were formulated. Results of the research study provided convincing evidence that there was a correlation relationship between RCBM scores, cumulative GPAs, and passing the WASL.

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CHAPTER 1

Introduction

Background for the Project

Since 1994, the State of Washington has required students to take a standardized test to demonstrate their proficiency in the subjects of reading, writing, communication, and mathematics called the Washington Assessment of Student Learning (WASL). These tests were given in grades four, seven, and ten. Then, in 2001, President George W. Bush signed into law the No Child Left Behind Act of 2001 (NCLB) with the focus to "provide all children with a fair, equal, and significant opportunity to obtain a high-quality education." This bill included four pillars of education:

Accountability: to ensure those students who are disadvantaged, achieve academic proficiency.

Flexibility: Allows school districts flexibility in how they use federal education funds to improve student achievement.

Research-based education: Emphasizes educational programs and practices that have been proven effective through scientific research.

Parent options: Increases the choices available to the parents of students attending Title I schools (NCLB, 2001).

This new law represented his education reform plan and contained the most sweeping changes to the Elementary and Secondary Education Act since it was enacted in 1965 (Department of Education, 2008, reading pamphlet). The Act contained a call for stronger accountability for results, and required states to test all students in mathematics and reading each year from third to eighth grades. Therefore, Washington changed the WASL to include testing reading and mathematics at each of the specified grade levels and also tested the students in science at grades five and eight, as well as continuing to test writing at grades four, seven, and ten. NCLB emphasizes the implementation of educational programs and practices that have been demonstrated to be effective (OSPI, 2007, www.k12.wa.us).

Some school districts struggled to meet Adequate Yearly Progress (AYP) as established by the Federal Government (Bush, n.d.). Because of this, schools needed to implement interventions to show they were attempting to remedy the situation. For example, a school was considered not meeting AYP if one or more of the established criteria were not met. Most commonly, the areas not met were in the subcategories concerning minority groups. At Lewis and Clark Middle School (LCMS) in Yakima, Washington the largest area of achievement gap was with the Bilingual/ELL students of which 19.1 percent were

classified as Bilingual/ELL and 22.7 percent migrant. The focus of these interventions was on mathematics and reading.

The International Reading Association (IRA) established five components of reading; phonemic awareness, phonics, reading fluency, vocabulary development, and reading comprehension strategies. Dr. Steve Hirsch (2008), Washington State University (WSU), predicted with reliability based only on a students' fluency whether or not they would pass the state standardized test.

Statement of the Problem

Title I stipulations of the NCLB indicated that schools not meeting AYP must have provided interventions helping students to meet the requirements of the state tests. Specifically, the intervention classes at LCMS focused on reading fluency and vocabulary needed to help the Bilingual/ELL students to close the achievement gap. Teachers wanted to provide students with extra help with their academic classes. As stated by Hirsch, "If we can't help students pass, college is out of the question, and high school may be too" (p.1). Providing the best possible intervention was the goal of the researcher. Since all students need to pass the WASL, the researcher needed to determine which had a higher relationship to the WASL—increasing reading fluency, or increasing their

grades. Because all students ultimately have to pass the WASL, all students can benefit from the findings of the research.

Accordingly, the problem which represented the focus of the present study may be stated as follows: Does a correlation exist between students reading at benchmark and passing the WASL or their GPA and passing the WASL?

Purpose of the Project

The purpose of this correlation research study was to determine which type of intervention, focused on fluency, or focused on GPA, had a higher relationship to student performance on the WASL. To accomplish this purpose, a review of selected literature was conducted. Additionally, a Pearson-R correlation coefficient was utilized for purposes of data analysis, from which related generalizations, conclusions, and recommendations were formulated.

Delimitations

A total of 154 seventh grade students at LCMS participated in this research project during the 2007-2008 school year, among these students were 19.1 percent Bilingual/ELL students and 22.7 percent migrant. The Reading Curriculum Based Measurement (RCBM) of reading fluency was administered to all students in the fall, 2007, to determine a baseline reading fluency score at the beginning of the year, and again

in the winter and spring to assess yearlong growth. The WASL was only administered in the spring, 2008. Grades were given on a quarterly basis and the grade point average (GPA) was determined cumulatively. The researcher (Michelle L. Helseth) used the winter, 2007 RCBM test results, the 2008 reading WASL scores, and the cumulative GPA as a comparison.

Assumptions

The researcher assumed the participating seventh grade teachers were all trained in the areas that they taught and the grades given reflected understanding of the student performance in class. The researcher further assumed the teachers scoring the two types of assessments were equally trained to administer and score the tests.

Participating students were 13 to 15 years old, and were enrolled in four core curricula: reading, history, science, and mathematics. The curricula were adopted based on research and recommendations from the Office of the Superintendent of Public Instruction (OSPI). These curricula were taught daily.

Hypothesis or Research Question

A significant correlation relationship exists between a students reading fluency or GPA and passing the WASL.

Null Hypothesis

There will be no a significant relationship between students' fluency and passing the WASL. Nor will there be a significant relationship between students' grades and passing the WASL. Significance was determined for $p \geq$ at 0.05, 0.01, and .001 levels.

Significance of the Project

Academic skills learned each year in the classroom assisted a student in passing the standardized WASL test at the end of the year. Students needed to pass classes to be promoted to the next grade level, and students needed to pass the WASL to graduate. Two very different curricula were considered to be incorporated into the reading intervention classes. Teachers wanted to help intervention students with their classes, and the district wanted the teachers to work on reading fluency. Therefore, the researcher needed to determine which variable provided a higher relationship to success on the WASL.

Procedure

When students at LCMS did not pass the reading section of the WASL, they were enrolled in an intervention class that focused on increasing the students' reading fluency. If fluency did not have a high relationship to passing the WASL, then it should not have been the focus of a class to help students succeed on the WASL. However, if fluency had

a high relationship to passing the WASL then the student should have worked on increasing their fluency. If the grades of the students had a high relationship to success on the WASL then the focus should have been placed on helping the students with their class work.

LCMS measured students' fluency with the RCBM test in the fall, winter, and spring of their 2007-2008 school year. With this in mind, the seventh grade students were assessed on the RCBM in September as a baseline for their fluency. They were tested again in February and May to monitor their progress. A score of 121 words per minute (wpm) was considered to be benchmark for a seventh grader in the winter test results. Each student received grades four times a year and their cumulative GPA was calculated. The students took the WASL in April, and the scores were reported in August. LCMS implemented a reading program for the students not passing the reading portion and a curriculum focusing on number sense for those who did not pass the mathematics portion.

Definition of Terms

Significant terms used in the context of the present study have been defined as follows:

benchmark. A student was considered to be reading at benchmark in the 7th grade if they can read 96 wpm in the fall, 121 wpm in the winter, and 148 wpm in the spring.

correlational research. Research that involves collecting data to determine whether, and to what degree, a relationship exists between two or more quantifiable variables.

intervention. A modification to a students learning.

pass the WASL. Passing the WASL was defined as scoring a three or four on the WASL.

Pearson-*r*. A measure of correlation appropriate when both variables are expressed as continuous (i.e., ratio or interval) data; it takes into account each and every score and produces a coefficient between -1.00 and +1.00.

reading fluency. Capable of using a language easily and accurately

Acronyms

AYP. Adequate Yearly Progress

DOE. Department of Education

ELL. English Language Learners

ERIC. Educational Resources Information Center

ESEA. Elementary and Secondary Education Act

GLE. Grade Level Expectation

GPA. grade point average

IRA. International Reading Association

LCMS. Lewis and Clark Middle School

NAEP. National Assessment of Educational Progress

NCLB. No Child Left Behind

ORF. Oral Reading Fluency

OSPI. Office of the Superintendent of Public Instruction

RCBM. Reading Curriculum Based Measurement

WASL. Washington Assessment of Student Learning

wpm. words per minute

WSU. Washington State University

CHAPTER 2

Review of Selected Literature

Introduction

The researcher, Michelle L. Helseth, reviewed the practices of teaching fluency in reading classes. The research showed that the rapid and automatic decoding of words can affect reading ability and comprehension skills, both needed to pass a state standardized test (National Institute of Child Health and Human Development [NICHD], 2000).The review of literature also examined how the policy of standardized testing was established and what effect it had on a public school, as well as the grading policies that teachers use.

As educational practices evolved over the years, so did the goals and laws of public education. Everyone deserved an education, an education that would help them to be a productive citizen of society. This called for a shift in how students were taught, what they were taught, and how they showed they had mastered essential academic skills.

The researcher also inspected the REWARDS Plus Reading Curriculum to determine if the program utilized effective strategies to teach students to read fluently, and to conclude if it followed the goals and laws of the education system today.

Data current primarily within the last five (5) years were identified through an online computerized literature search of the Educational Resources Information Center (ERIC), the internet, and Proquest.

Reading Instruction in Fluency

Fluency was defined as "an effortless, smooth, and coherent, oral production of a given passage… in terms of phrasing, adherence to the author's syntax, and expressiveness." Proficient reading was essential for academic and personal success. Much research has identified effective strategies for aiding reading development. These include the alphabetic principle, phonemic awareness, oral reading fluency, vocabulary, and comprehension. Although, all of these aspects are important, one has been focused on by this researcher, fluency. Creating opportunities for students to practice reading in order to build fluency was an equally important component. Fluent reading with comprehension was the desired outcome of reading instruction. Recent brain research showed that "students with fluency difficulties required intensive, on going instruction with evidence-based activities, such as repeated reading" (Peebles, 2007, p. 578).

Research conducted by Rasinkski (2006), identified three key elements to reading fluency: "accuracy in word decoding, automaticity

in recognizing words, and appropriate use of prosody or meaningful oral expression while reading" (p. 704). Therefore good instruction should have included mastery of these components and a well-defined purpose. Students needed a reason to be practicing their reading fluency, and should not only be practicing for a test. Rasinkski suggested, reading orally for an audience which should probably not be an informational text because it does not tend to lend itself to expressiveness. Teachers should steer towards rhythmical, rhetorical or interactive texts. This not only would give students an authentic reason to practice fluency, but would also aid them in exposure to different works of literature.

The National Assessment for Educational Progress (NAEP) has tested students using an Oral Reading Study. Most recently this occurred in 2002. Some 40 percent of the students included in the study had trouble with some sort of oral reading task. The findings showed that the students did well with accurately decoding the words, but struggled with comprehending what they had read. Also, students varied their reading depending on the assessment that was given. If a student was given a one-minute reading assessment they tended to read they story quickly, whereas if they were given a lengthier task they tended to read slower and more accurately (www.edweek.org, 2005). Richard Arlington, president of the International Reading Association (IRA), suggested that

the practices of focusing on basic skills and using one-minute reading assessments such as some schools do, "may not be the most effective" (p. 2). Said Arlington, "One might wonder why so much emphasis is being given to decoding in early-literacy programs and in so many reading-intervention plans. Fluency was a bigger problem" (p. 2).

Standardized Testing Policy

The goals of education have changed dramatically throughout the decades. In the 1800s, the goal of education was for students to be able to write down what was said. When World War I began, soldiers needed to be able to read instructions to use equipment, and thus had to be able to read paragraphs they had never seen before. Those who received an education changed as well throughout the history of the United States. The pattern of thought about who to educate eventually evolved to include every child in the United States. The education system finally achieved the goal of allowing each child to receive a free and equal education in order to create a common bond between all citizens. Each person had the opportunity to reach their full potential as a result of that education (MSN Encarta).

As quoted in Education: The Promise of America (2004), President George W. Bush stated:

> Education has always been a fundamental part of achieving the American Dream. An educated citizen is more likely to hold a good job, escape poverty, own a home, start a business, be free from crime, and participate in America's democracy (n.p.).

American Educators have long wished that each individual could take care of themselves. This desire for school reform became the center of attention after a federal commission wrote *A Nation At Risk* in 1983. This report showed that "American students were outperformed on international academic tests by students from other industrial societies. Statistics also suggested that American test scores were declining over time" (MSN Encarta, n.d., n.p.).

In 2002, President George W. Bush signed the No Child Left Behind (NCLB) Act. "This law insists that testing, accountability, and high standards will join with record new funding to help ensure educational excellence for every child" ("Education: The Promise of America," 2004, p.1). Under this act, schools were required to be accountable for increasing student achievement; states had to assess students yearly in grades three through eight and one time between grades 10 through 12; and consequences were put into place for schools not meeting adequate yearly progress. More funds were provided to reward schools for their

programs; states that met success were rewarded with funds while states that failed saw a reduction in funding. Other focal points included giving parents more options for their child's education, making sure teachers were well-qualified and ensuring safety at school. Reading had become a top priority not only for accountability on the reading tests, but as a skill needed to be successful in all content areas:

> Reading opens the door to learning about math, history, science, literature, geography and much more. Thus, young, capable readers can succeed in these subjects…On the other hand, those students who cannot read well are much more likely to drop out of school and be limited to low-paying jobs throughout their lives (U.S. Department of Education, 2003, p. 15).

Suddenly reading was an undeniably critical success to society, and was finally being recognized. Laws affecting public education have had an affect on the teaching of reading and writing. Thomas (2001) wrote about experiences as a teacher and a father in an article in the English Journal which diminished the importance of standardized testing. Thomas' daughter was quoted in the article as follows: "All they care about is the [standardized] test; they don't care if we learn anything." Was this the belief that standardized testing had created?

Many of these tests have determined grade promotion and eventually graduation. Standards and testing were not new, and Thomas pointed out "the reduction of instruction to teaching-to-the-test has been a part of education for much of this century…These standards and tests have overshadowed decades of research on the most effective best practices for teaching" (p.67). In essence the tail was wagging the dog. When instruction became a slave not only to the content but to standardized testing, education became superficial at the expense of students and society. Instruction needed to be kept authentic.

REWARDS Plus Curriculum

Because of NCLB, schools needed to change their curricula to reflect the help that students were in need of (NCLB). In Washington State, textbooks, including supplemental ones, were approved for funding by the textbook adoption committee. These committees recommended selected curricula that school district textbook adoption committees may choose from. In May 2004, the Office of the Superintendent of Public Instruction (OSPI) released a *Grades 4-12 Reading Intervention Materials Review: Washington State Evaluation Report*. In this report, the committee addressed the five components of reading as well as recognizing four Intervention Program Construction Components: Explicit Instructional Guidance, offering various aspects of

systematic and direct guidance to the teacher, as well as the student; Program Design, material construction and how those materials work together; Assessment, program assessments provide measures for standards; and Universal Access, differential options for ensuring all students are given the support that they need. The review process included prescreening; all materials were screened and depended on the following criteria before being granted a full review. Prescreening criteria one: alignment with Washington State Grade Level Expectations (GLE). Prescreening criteria two: alignment with scientifically-based research. Prescreening criteria three: publishers identified the submitted materials into a specified classification and attested to the fact that it met the qualification of those criteria. Only then was it granted a full review to be included in the recommendations.

The REWARDS Plus Curriculum was listed in these findings as a supplemental and stand-alone intervention program that met the instructional components of fluency only, yet met all four of the criteria for program construction components. REWARDS Plus was a specialized reading program designed for middle and high school students who were below grade level in their reading achievement. This curriculum was designed to expand on the original REWARDS program, focused on decoding long words and building fluency. Still, additional practice was

needed to “cement” these practices, to increase transfer into content area reading, and to move secondary students closer to grade level reading. The goals of REWARDS Plus were:

> Accurately read more multisyllabic words found in science, social studies, and health textbooks; Read content-area passages not only accurately, but fluently; Experience increased comprehension as their accuracy and fluency increases; Accurately complete challenging multiple-choice items, justifying their answers; Accurately respond to short-answer questions, incorporating wording from the question into the answer; Write coherent summaries of, and extended responses to, reading passages; and Have more confidence in their reading and writing abilities (REWARDS Plus, 2004, p.1).

Students that understood and mastered these goals should have been more successful readers. However, students were only successful if the program was taught in the way intended. The intention was for each application lesson to be taught over two days; four parts the first day and three the next. There were 15 application lessons, requiring 30 instructional days.

Grading

In classes that should have been focused on mastering reading fluency, and classes teaching the skills needed to pass a standardized test each student receives a grade. However, grades may not have been the accountability measures needed. Each teacher's grading policies may have been different or at least enforced differently. Grades alone did not make the student suddenly want to become better, but the modeling of the teacher might have (Wormeli, 2006).

Wormeli even went so far as to say, "grading policies such as refusing to accept late work, giving grades of zero, and refusing to allow students to redo their work may be intended as punishment for poor performance, but such policies will not really teach students to be accountable" (p. 27). A low grade would not have given us any indication of what a student could actually do or whether they mastered the material. Assessment and feedback are the only indicators.

A grade must have remained accurate in order to be useful, and was not accurate when it was mixed with non-academic factors. A student should not have been able to pass a class by only passing the tests and doing none of the work. This indicated, for example, that the homework given was useless. If a student passed the standardized test, but not any of their classes, then the classes did not serve their purpose.

A class should have provided practice, rather than a formative assessment, and should have been transformative and meaningful. One suggestion made by Wormeli was "to change standardized test data into information students can use and put feedback in student-friendly language" (p.28).

Summary

The review of selected literature reported in Chapter 2 supported the following research themes:

1. Three key elements to reading fluency included: accuracy in word decoding; automaticity in recognizing words; and, appropriate use of prosody or meaningful oral expression while reading.
2. Recent standardized testing policy has insisted testing, accountability, and high standards will help ensure educational excellence for every child.
3. Educators need to have a specialized reading program designed for middle and high school students who were below grade level in their reading achievement.
4. Research authorities have suggested that standardized test data should be converted into information students can use when presented in student-friendly language.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The purpose of this correlation research study was to determine which type of intervention, focused on fluency, or focused on Grade Point Average (GPA), had a higher relationship to student performance on the Washington Assessment of Student Learning (WASL). To accomplish this purpose, a review of selected literature was conducted. Additionally, a Pearson-*r correlation coefficient* was utilized for purposes of data analysis, from which related generalizations, conclusions, and recommendations were formulated.

Chapter 3 contains a description of the methodology used in the study. Additionally, the researcher included details concerning participants, instruments, design, procedure, treatment of the data and summary.

Methodology

The researcher used a research methodology involving the Pearson *r correlation coefficient*. This statistical procedure provided a measure between -1.00 and +1.00.

Participants

This study included 154 students enrolled in the 7th grade for the 2007-2008 school year. These students had completed both the Winter 2007 Reading Curriculum Based Measurement (RCBM) test for fluency measure and the 2008 WASL. Then, 102 students were randomly selected from those 154 for the Pearson *r* analysis. Since all students must pass the WASL, the students represented a cross-section of the characteristics of students at Lewis and Clark Middle School (LCMS). Students at LCMS are 50.7 percent male and 49.3 percent female. There is an 89.8 percent free and reduced lunch rate. Of these students, 13.3 percent are in special ed. programs, 19.1 percent are classified as Bilingual/ELL, and 22.7 percent migrant.

Instruments

Essential instruments used in the study included RCBM fluency test, the WASL test, and their cumulative GPA through 7th grade.

Design

The researcher looked at student's fluency scores on the Winter 2007 RCBM fluency test, their scores on the 2008 WASL, and their cumulative GPA through 7th grade to determine a significant relationship. The Pearson *r* data analysis was conducted to formulate related inferences, conclusions, and recommendations.

Procedure

Procedures employed in the present study evolved in several stages, as follows:

1. On November 2, 2008 researcher received approval for study from building principal, Mrs. Lois Betzing.
2. Acquired a list of all student currently enrolled in the 8th grade class of 2008-2009.
3. Acquired a list of 2007-2008 RCBM scores from LCMS reading coach, Mrs. Jan Pease.
4. Acquired list of reading WASL scores from 2008.
5. Acquired list of cumulative GPAs for the 8th grade class of 2008-2009.
6. Created chart of students scores on RCBM, WASL, and GPAs in the previous year.
7. Eliminated students that did not have information for all categories.
8. 102 random students were selected for the analysis.

Treatment of the Data

A Pearson *r correlation coefficient* was used in conjunction with the Windows STATPAK statistical software program that accompanied the Educational Research: Competencies for Analysis and Applications

text (Gay, Mills, & Airasian, 2006). This allowed the researcher to determine a possible relationship between winter 2007 RCBM test scores and the 2008 WASL, or between cumulative GPAs and the 2008 WASL. The following formula was used to test for significance:

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{(\sum X^2 - \frac{(\sum X)^2}{N})(\sum Y^2 - \frac{(\sum Y)^2}{N})}}$$

Summary

Chapter 3 provided a description of the research methodology employed in the study, participants, instruments used, research design, and procedure utilized. Details concerning treatment of the data obtained were also presented.

CHAPTER 4

Analysis of the Data

Introduction

The present research study sought to determine whether a stronger correlation existed between students reading at benchmark and passing the WASL or their GPA and passing the WASL.

Chapter 4 has provided information detailing a description of the environment, hypothesis, and null hypothesis, results of the study, major findings, and a summary.

Description of the Environment

The present study included 102 students that were randomly selected from 154 students that had completed the winter, 2007 RCBM test, the 2008 WASL, and had a cumulative GPA listed while at LCMS. The students represented a cross-section of the characteristics of students at LCMS. The Reading Curriculum Based Measurement (RCBM) of reading fluency was administered to all students in the fall, 2007, to determine a baseline reading fluency score at the beginning of the year, and again in the winter and spring to assess yearlong growth. The WASL was only administered in the spring, 2008. Grades were given on a quarterly basis and the grade point average (GPA) was determined cumulatively.

Hypothesis

There was a significant correlation relationship between a students reading fluency or GPA and passing the WASL.

Null Hypothesis

There will be no a significant relationship between students' fluency and passing the WASL. Nor will there be a significant relationship between students' grades and passing the WASL. Significance was determined for $p \geq$ at 0.05, 0.01, and .001 levels.

Results of the Study

Table 1 illustrates the raw scores for the winter, 2007 RCBM fluency test, the 2008 WASL, and the cumulative GPAs for 7th graders at LCMS in the 2007-2008 school year. A score of 121 wpm is considered benchmark for a 7th grade student in the winter; and a score of 400 is considered passing in the WASL.

Table 2 illustrates the data collected from the 102 randomly selected students' winter, 2007 RCBM scores and 2008 WASL scores. A Pearson *r correlation coefficient* was used in conjunction with the Windows STATPAK statistical software program that accompanied the Educational Research: Competencies for Analysis and Applications text (Gay, Mills, & Airasian, 2006) to calculate data statistical values.

Table 1

Comparison of RCBM scores and the WASL and the Cumulative GPA

Student Number	RCBM Score	WASL Score	Cumulative GPA
1	128	405	3.00
2	149	388	2.01
3	126	394	3.20
4	122	390	2.38
5	161	402	.47
6	158	400	3.54
7	98	390	1.48
8	74	397	1.94
9	175	411	2.83
10	160	405	2.67

Key:

RCBM—Reading Curriculum Based Measurement.
WASL—Washington Assessment of Student Learning.
GPA—Grade Point Average.

Note. Table only is an example of the type of raw scores used to calculate the correlation coefficient. This information was gathered on all students to run the tests.

The Sum of X was 15236; the Sum of Y was 41260; the Sum of Squared X was 2397528; and the Sum of Squared Y was 16736544. The Mean of 'X' Scores was 149.37; the Mean of 'Y' Scores 404.51; and the Sum of XY was 6207694. The Pearson's r was .59 and the Degrees of Freedom were 100.

Table 2

Pearson's Product Moment Correlation—RCBM and WASL

Statistic	Values
Number of Items	102
Sum of X	15236
Sum of Y	41260
Sum of Squared X	2397528
Sum of Squared Y	16736544
Mean of 'X' Scores	149.37
Mean of 'Y' Scores	404.51
Sum of XY	6207694
Pearson's r	0.59
Degrees of freedom	100

df	0.05	0.01	0.001
100	.1946	.2540	.3211

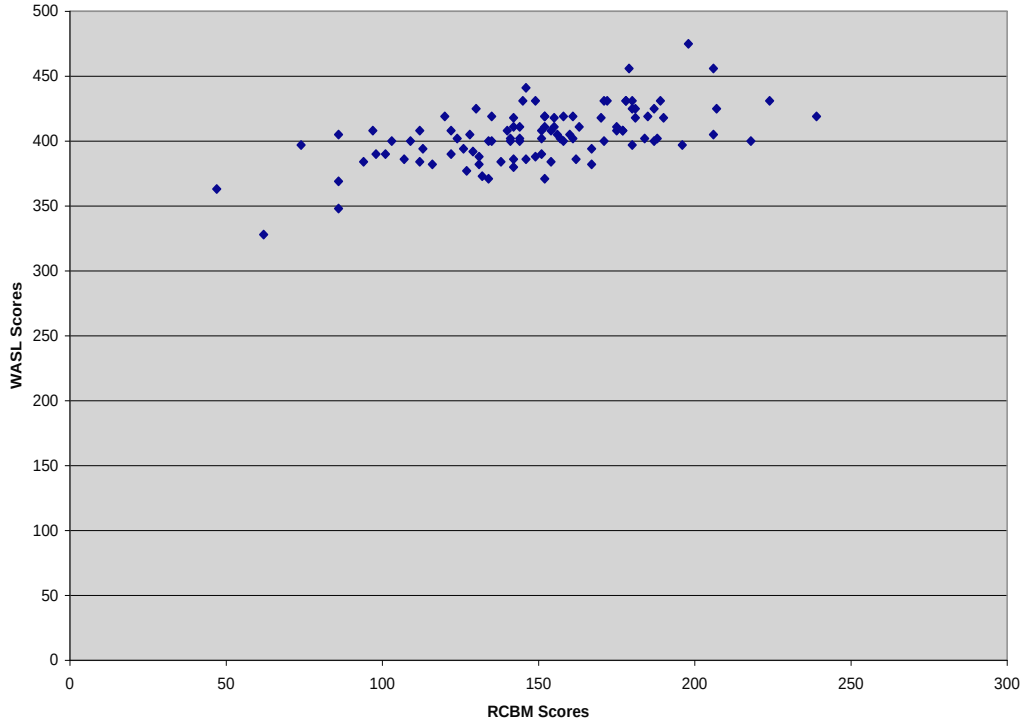

Figure 1. RCBM and WASL Scatter Gram illustrates the correlation between Winter, 2007 RCBM scores and 2008 WASL scores in a scatter gram.

Table 3 illustrates the data collected from the 102 randomly selected students' cumulative GPAs and 2008 WASL scores. A Pearson *r correlation coefficient* was used in conjunction with the Windows STATPAK statistical software program that accompanied the Educational Research: Competencies for Analysis and Applications text (Gay, Mills, & Airasian, 2006) to calculate data statistical values.

Table 3

Pearson's Product Moment Correlation—GPA and WASL

Statistic	Values
Number of Items	102
Sum of X	251.05
Sum of Y	41260
Sum of Squared X	696.80
Sum of Squared Y	16736544
Mean of 'X' Scores	2.46
Mean of 'Y' Scores	404.51
Sum of XY	102238.98
Pearson's r	0.36
Degrees of freedom	100

df	0.05	0.01	0.001
100	.1946	.2540	.3211

The Sum of X was 251.05; the Sum of Y was 41260; the Sum of Squared X was 696.80; and the Sum of Squared Y was 16736544. The Mean of 'X' Scores was 2.46; the Mean of 'Y' Scores 404.51; and the Sum of XY was 102238.98. The Pearson's r was .36 and the Degrees of freedom were 100.

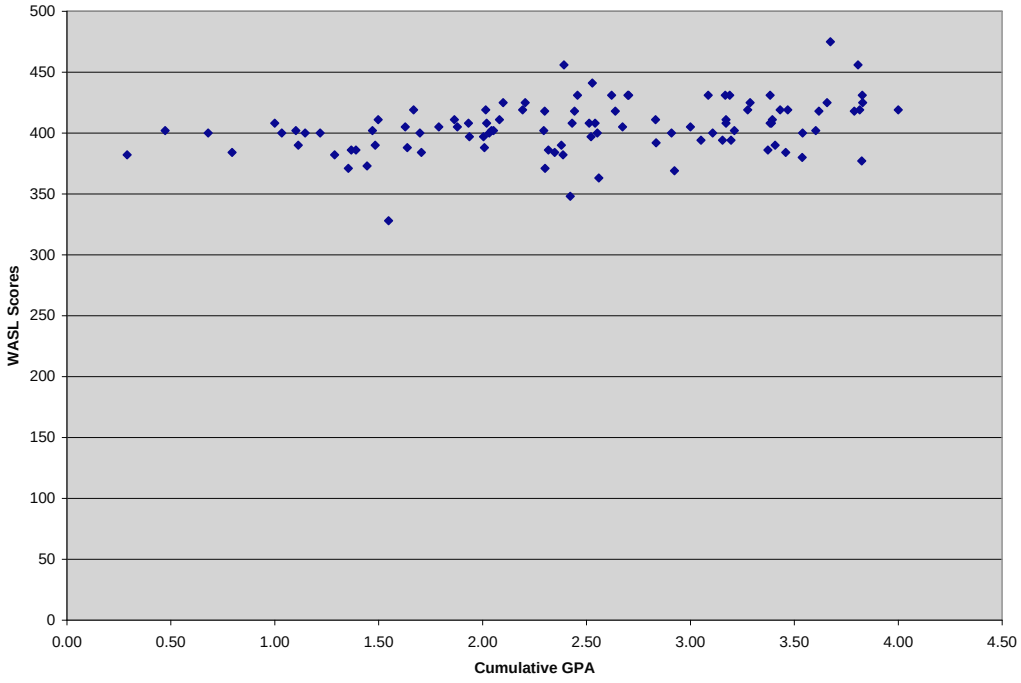

Figure 2. GPA and WASL Scatter Gram illustrates the correlation between cumulative GPAs and 2008 WASL scores in a scatter gram.

Findings

Significance was determined by the researcher for $p \leq$ at 0.05, 0.01, and .001 levels. An analysis of data indicated that the hypothesis was supported at all levels and the null hypothesis was rejected. Data obtained and analyzed further indicated there was a positive correlation between both RCBM scores and GPAs to passing the WASL. However, a

stronger correlation existed between the RCBM scores and passing the WASL, than the cumulative GPAs and passing the WASL.

Discussion

The researcher predicted there would be a correlation between RCBM scores, cumulative GPAs, and WASL scores. This researcher had conducted research on these fields that stated similar information, reported in Chapter 2. The research in these articles stated that the automaticity that is associated with reading fluency is needed to be successful on standardized tests, in this case the WASL. Furthermore, it supported the need to make grading practices more representative of the practice aspect of learning rather than only focusing on the tests. Grades are more subjective than a standardized test. The most closely related research was done by WSU professor, Steve Hirsch, who said that he could predict based on a students' fluency whether they would pass a standardized test. This research led the researcher to predict there would be a correlation between RCBM, cumulative GPA, and WASL scores.

Summary

The researcher's goal for this correlation research study was to determine if there was a stronger relationship between RCBM scores and passing the WASL or cumulative GPAs and passing the WASL. Results of

the study provided convincing evidence there was a correlation relationship between RCBM scores, cumulative GPAs, and passing the WASL; however, there is a stronger relationship between RCBM scores and passing the WASL. The hypothesis was supported at all levels for significance, and consequently the null hypothesis was rejected at all levels.

CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

The purpose of this correlation research study was to determine which type of intervention, focused on fluency, or focused on GPA, had a higher relationship to student performance on the WASL. To accomplish this purpose, a review of selected literature was conducted, information was obtained, a Pearson-*r correlation coefficient* was utilized for purposes of data analysis, and related generalizations, conclusions, and recommendations were formulated.

Phrased as a question, the problem which represented the focus of the present study may be stated as follows: To what extent does a relationship exist between a student's RCBM reading fluency score or cumulative GPA and passing the reading portion of the WASL?

Conclusions

Based on the review of selected literature in Chapter 2 and major findings reported in Chapter 4, the following conclusions were reached:

1. The three key elements to reading fluency include: accuracy in word decoding, automaticity in recognizing words, and appropriate use of prosody or meaningful oral expression while

reading is an important skill to be learned to be successful on standardized testing.

2. Recent standardized testing policy has insisted testing, accountability, and high standards will help ensure educational excellence for every child, and the path to this excellence will be benefitted by reading fluency.
3. Educators need to have a specialized reading program designed for middle and high school students who were below grade level in their reading achievement that includes oral reading fluency.
4. Standardized test data should be converted into information students can use to further understanding when presented in student-friendly language.
5. Analyzed data provided convincing evidence there is a higher correlation relationship between RCBM fluency scores and passing the WASL than cumulative GPAs and passing the WASL.

Recommendations

As a result of the conclusions stated above, the following recommendations have been suggested:

1. To increase student fluency scores, Intervention classes to help students not passing the WASL need to focus on fluency.

2. To increase students' fluency scores, curricula in reading classes need to focus on fluency.
3. To place a student in intervention classes, both grades and passing a standardized test need to be considered. Grades are a way to keep students accountable for what they are learning, and a way to show that they have learned academic skills that are needed, but it is not a predictor of whether they will pass a standardized test.
4. To see if the same results occur, another study may need to be done on another group of students.
5. To determine a correlation between grades and RCBM scores other research may need to be done.
6. Other schools designing intervention classes for students struggling to pass the WASL may wish to utilize this information contained in this study, or they may wish to continue this research for their own purposes.

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