

Exploring the Correlation Between the STAR Math Test and the  
WASL Math Assessment at Wishkah Elementary

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Dr. Robert Kraig  
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Tove Reibel  
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FACULTY APPROVAL

Exploring the Relationship Between the STAR Math Test and the  
WASL Math Assessment at Wishkah Elementary

Approved for the Faculty

\_\_\_\_\_, Faculty Advisor

## ABSTRACT

The researcher sought to find out if there was a correlation between the Spring 2008 STAR Math scores and Spring 2008 WASL math scores. The Wishkah Valley School District used STAR assessment scores to place students in a LAP math class. The researcher was interested in finding out if there was a correlation between these scores, thus warranting the use of the test as a tool to identify students who might struggle on the WASL. After analyzing the data it was found that

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## CHAPTER 1

### Introduction

#### Background for the Project

Since President Bush passed the No Child Left Behind Act of 2001, teachers have been trying to prepare their students for the high stakes tests that measure a student's academic standings. However, this has been a struggle to prepare all students to pass the Washington Assessment of Student Learning (WASL). After the researcher experienced fluctuations in STAR Math test scores an interest developed in how Wishkah Elementary identified students who needed help in the classroom. After reviewing several articles on math assessment and how it was used to guide instruction, the researcher was interested in investigating how assessment was used at Wishkah Valley School. The researcher wanted to find out whether or not the STAR Math assessment that Wishkah Valley School used to identify students who struggled in math was finding the students who were also failing to succeed on the Washington Assessment of Student Learning (WASL) and if

a correlation existed between the STAR math assessment and WASL scores.

### Statement of the Problem

The researcher wanted to find out if a correlation existed between the 2008 star math placement tool and student achievement of the 2008 math WASL.

The Wishkah Valley School District used the star math test scores as a placement tool for the math LAP program. Some teachers in the district had been unhappy with this practice as the test scores can fluctuate. This created a question of the STAR tests reliability and validity. The researcher investigated whether or not the STAR math test had a relationship with WASL scores. The researcher was especially interested in finding out if success on the math part of the STAR test could predict with any degree of accuracy success on the math portion of the WASL. The researcher was interested in determining if the star math testing could be used to predict which students would be successful and unsuccessful on the math portion of the

WASL test. If a correlation did exist then the researcher could use the test to find help for those students needing help. However, if there was no correlation there would be students who received assistance that did not need it and other students that needed help but were being passed over due to an unreliable placement tool.

#### Delimitations

This project was delimited to the 3<sup>rd</sup>/4<sup>th</sup> grade class at Wishkah Valley School. The 3<sup>rd</sup>/4<sup>th</sup> grade classroom had students from various social-economic backgrounds and learning styles. Students in this classroom also ranged from 2.5 to 4.5 in academic grade level according to the pre-study level tests given at the beginning of the year. The class was a combined class consisting of 14 students. The data collected was from the 2008 spring Star testing and the spring 2008 WASL test scores.

### Assumptions

The researcher trusted that throughout the testing, the students tried their best on the test and that the students who were taking the test could read and write.

The researcher also assumed that the star math and the WASL were properly administered by the classroom teachers or coordinators.

Another assumption was that the star math and the WASL testing accurately measured the students understanding of the subject matter.

### Hypothesis or Research Question

There is a positive correlation between the Star math placement tool and student achievement on the math WASL. Staff members will believe that the Star test is an effective placement tool.

### Null Hypothesis

There is no correlation between the Star math placement tool and student achievement on the math

WASL. Staff members will not believe that the Star test is an effective placement tool.

#### Significance of the Project

This project was important to the researcher and others at Wishkah School because it informed the researcher to whether or not the practice of placing students in the LAP math class, where they will receive extra math help, based on the STAR math test was a practice that should continue. The project was important to those involved because students who had been identified by the STAR math assessment as struggling, would also have performed poorly on the WASL math assessment, showing that the extra help was justified. If STAR math and WASL scores did in fact show a correlation then this would be a practice that the researcher and the Wishkah School would continue to support and administer.

## Procedure

For the purpose of this project, the following procedures were implemented:

1. Permission to conduct research at Wishkah School was granted by Principal Joel Tyndell. (see Appendix A)
2. A review of literature was conducted at Heritage University and the internet. Articles were reviewed to provide an ample amount of background information for the study.
3. A survey was created to poll the students on their opinion of their math skills (see Appendix b)
4. A survey was created to poll the staff on their opinion of the math curriculum and the star math placement tool.(see Appendix c)
5. Survey approved by Mr. Joel Tyndell.(see Appendix c)
6. Data was gathered and analyzed to determine if a correlation existed between the STAR math and WASL math
7. Test scores for Star Math and WASL were obtained from the curriculum director Jude Killen.(see Appendix e)

8. The researcher then used the Pearson's Product test, which is a test that is a measure of correlation, appropriate when both variables are expressed as continuous. (i.e. ratio or interval data. (see Appendix f)
9. Data was compiled and represented in graphs. (see Appendix g)
10. Conclusion was drawn and documented in written form.
11. Data was shared with Principal Tyndell and curriculum director at the end of the study.

#### Definition of Terms

WASL: The WASL was a reading assessment given to 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> graders of Washington State.

Star Test: STAR Math is a computer-adaptive assessment created by the company Renaissance Learning.

Correlation: A quantitative measure of the degree of correspondence between two or more variables

Pearson Product r: A measure of correlation appropriate for the data when both variables to be correlated are expressed as continuous (i.e., ratio or interval) data.

Acronyms

STAR Standardized Test Assessment of Reading

GLE's Grade Level Expectations

NCLB No Child Left Behind

WASL Washington Assessment of Student Learning  
WVS Wishkah Valley School

AYP Adequate Yearly Progress

ITBS Iowa Tests of Basic Skills



## CHAPTER 2

### Review of Selected Literature

#### Introduction

Assessment has always been a topic where heated discussions arise. Administrators, teachers, parents and students all have their opinion of what assessment tools should be used. In recent years, the introduction of the WASL assessments in Washington State has especially fueled the debate of high stakes testing. Identifying tools to recognize students who need extra help to successfully perform on these high stakes tests has been tricky business. The researcher sought to find a correlation between the tool that the researcher's school was using to place students in the LAP Math program and the students' performance on the WASL.

#### No Child Left Behind

On January 8, 2002, President George W. Bush signed the No Child Left Behind Act (NCLB). This act reauthorized and amended federal education programs

established under the Elementary and Secondary Education Act (ESEA) of 1965.

The major focus of No Child Left Behind 2001 was to provide all children with a fair, equal, and significant opportunity to obtain a high-quality education. The four pillars of the NCLB were: The first was a stronger accountability for results; states are working to close the achievement gap and make sure all students, including those who are disadvantaged, achieve academic proficiency. The second was more freedom for states and communities as states and school districts had unprecedented flexibility in how they used federal education funds. The third was proven educational methods. The NCLB put emphasis on determining which educational programs and practices had been proven effective through rigorous scientific research. The final pillar had created more choices for parents. Parents of children in low-performing schools had new options under NCLB. In schools that did not meet standards for at least two consecutive years, parents were allowed to transfer their children to a

better performing school, including a public charter school, within their district. According to a survey by The Center of Education policy, school districts had increased time spent on English and math and decreased time spent in all other subjects, including social studies, since the law enacted in 2002. (Gale 2006)

#### Washington Assessment of Student Learning

Washington State adopted the Washington Assessment of Student Learning (WASL) to improve public schools and to better prepare the students of Washington for a global economy (Bergeson, 2006). The WASL had been used by schools to assess both student and school progress in a variety of subject areas. Using the WASL as a guide could have been a problem for some because of questions that had been raised about the tests validity (Doyan, 2006). Although many groups disagreed with the use of the WASL, Washington State had to implement a plan to be in accordance with the No Child Left Behind Act (NCLB), a federal act that moves schools towards outcome-based education. The WASL was a standards-

based test and it had been a model for other states in their quest to comply with NCLB standards (Taylor 2006).

For the graduating class of 2016/2017 Washington State required students to pass the WASL in all subject areas to receive a high school diploma. While this law was still in place there had been talk in the legislature of modifying this practice until the state saw more students succeeding on the WASL.

A student's success on the 10<sup>th</sup> grade WASL could be predicted by performance on the 4<sup>th</sup> grade WASL. According to a study conducted by Dr. Fouts in 2002, Fouts found that if a student scored a one on the writing section of the WASL in 4<sup>th</sup> grade, the same student only had a 3.1% chance of passing with a 3 or 4 in the 7<sup>th</sup> grade. A score of a one or a two was below standard and a three and a four was at or above standard. Schools used WASL results to influence the instructional materials used in the classrooms (Bergeson, 2006). If students who struggled in the lower grades were identified before the WASL they could

receive help. Consequently WASL scores would increase, helping students and schools too.

The WASL test scored the student by Performance Level Descriptors. These descriptors gave teachers, parents/guardians and students more information about a student's strengths and areas for improvement after taking the Washington Assessment of Student Learning (WASL). Performance Level Descriptors were broken down by grade and by the score levels students can earn. Basic (Level 2), Proficient (Level 3) and Advanced (Level 4). There were no descriptors for Below Basic (Level 1). Committees of Washington State teachers, parents, community members and business representatives determined the Performance Level Descriptors during the standard setting processes. (OSPI)

#### STAR Math Assessment

STAR Math was a computer-adaptive assessment created by the company Renaissance Learning. According to their website this program provided a computer-adaptive mathematics test and database that provided

objective, timely, and accurate information to help teachers dramatically improve math instruction. It also stated this assessment program accurately assessed the math achievement of students in grades 1-5. Reports provided information to help teachers, students, administrators, and parents find the right level of learning for each student as well as focus on the areas necessary for progress. The site also stated that the program predicted results on state and national standardized tests including ITBS, CAT and Terra Nova. (Renaissance) The STAR Math program has been the main tool used in the researcher's school to place students in the LAP math program.

The Star Math test scores showed where students land nationally with other students. The percentile rank score ranges from 1-99. The students were scored by where they landed and which interval that scores falls under for that grade level.

#### Everyday Math

Everyday Mathematics was a research-based curriculum developed by the University of Chicago

School Mathematics Project. UCSMP was founded in 1983 during a time of growing consensus that our nation failed to provide its students with an adequate mathematical education. The goal of this on-going project was to significantly improve the mathematics curriculum and instruction for all school children in the U.S. This was the current math curriculum being used in the classroom during the time the researcher completed the study.

According to the Renaissance Learning Site Everyday Math was a program that provides evidence-based programs to support high-quality instruction. Everyday Math had targeted interventions to help struggling students catch up to their peers, progress monitoring information to drive data-driven decision making and support—including family involvement—to make sure every student experiences success (Renaissance).

### Test Taking

Studying was only a part of getting good results on an exam. No matter how hard a student studied, if

they didn't know how to go about taking a test, whether multiple choice or essay, they didn't score the highest possible mark. (Killen 2009)

Another factor that the researcher considered in the research was that the students taking the Star test at the beginning of the year may have taken the test dealing with some summer regression. According to Joyce E. Higgs of the Culvert Chronicles, her research showed that Congress found that when students did not engage in educational experiences during the summer, they could on average lose more than one month's worth of academic skills, and two months or more of mathematics concepts and skills.

#### Reliability and Validity

According to William M.K. Trochim of Cornell University, reliability was the consistency of your measurement, or the degree to which an instrument measures the same way each time it was used under the same condition with the same subjects. In short, it was the repeatability of your measurement. A measure was



considered reliable if a person's score on the same test given twice were similar. It was important to remember that reliability was not measured, it was estimated. Validity was the strength of conclusions, inferences or propositions. (Trochim)

Factors that the researcher considered when reviewing the WASL math assessment and the STAR math assessments were reliability, fairness, validity, and ease of administration. All of these issues had to do with how much value a teacher or parent put on a single test.

A reliable test gives consistent results over time. The publishers of STAR math claimed the STAR math assessments had a reliability score in the .85 range (Samuels, 2004). The WASL was deemed both reliable and valid by the National Standards for Educational and Psychological Testing.

After reading several different studies regarding reliability/validity of the WASL several serious questions were raised. In one case 204,000 writing WASL

tests were scored improperly causing the scoring company to rescore all of the tests. (Winterrose 2007)

Fair tests are bias free and follow recognized test administration standards. The STAR math test was graded by a computer, making the test more objective. Judy Killen said this about the Wishkah Valley Elementary. "When the STAR test was conducted at Wishkah Elementary the setting often changed depending on the student's teacher and the size of the class." (Killen, 2009). The WASL was stricter with its administration; it was be given exactly according to the directions with only specified accommodations permitted. Cultural and linguistic differences might affect the fairness of a test. For example, children from rural areas might have difficulty with a math comprehension test based on the wording of a story problem that they did not relate to.

Fairness might also be affected by the amount of time students were instructed in test taking methods. STAR math scores would have increased if a student received a lot of direct instruction in math vocabulary

and also participated in the Accelerated Math Program (Scott, 1999). The question of fairness was also considered by the researcher when precious instructional time was lost so students could be taught how to take the WASL in WASL prep courses.

Validity was the extent to which a test measures what it intends or claims it measures. The STAR Math test was reported to have a correlation with other standardized reading assessments around the .80 range. The WASL assessment has had no independent study of WASL validity and recognized by the legislature.

(Doyan, 2006)

There was little training involved when it came to administering the STAR Math assessment or the WASL. During the STAR Math test students sat in front of a computer and pressed number one through four on the keyboard. Directions were often given to the students once or twice in their younger years and as experience develops the students no longer needed to be taught how to take the test. Students started taking the WASL in third grade. Every time the students took the test a

set of instructions were read to them directly from the manual. This made it easy on the test administrator because the routine could be strayed from.

Administration or scoring of tests by unqualified personnel was a serious ethical violation and would also result in invalid or misleading test results. In 2000, the state of Minnesota paid out a large sum of money for a class-action lawsuit because Pearson Educational Consultants also known as NCS incorrectly scored 45,739 tests. NCS was the same company that scored WASL tests (Doyon, 2006) NCS had a history of improperly scoring test and this raised serious questions with the WASL and its use.

Tests should be as easy to take and to administer as possible. Scores could be adversely affected if the test-taker or the test administrator did not understand the directions. The STAR and the WASL were assessments that were easy in both aspects. Young people who have limited experience taking tests may waste precious test time concentrating on the process rather than the content of the test. When students took the STAR Math

test they were only allowed a certain amount of time for each of the 25 questions. If after a measure of time no answer was given then the test automatically moves on to the next one, assuming that the test taker did not know the answer. On the WASL Math test there was a certain amount of time recommended but students were allowed to use whatever reasonable amount of time they need as long as they were working.

### Summary

Assessment has always been a topic that brought about heated discussions. Should schools use this kind of testing or that kind of testing? How much money should states put into testing state standards? Did the test being used accurately assess the students' knowledge? Were students taught to the test? All of these questions and many more had been brought up daily by educators around the world. The tools that schools used dictated their direction and were scrutinized for accuracy, validity, and reliability. The researcher was especially interested in finding out as much

information as possible about the STAR Math assessment and the WASL so that a good background could be developed and also so that researcher could possibly have found out why a school district would use a short math assessment that centers around computation to predict performance on a test that assesses comprehension and critical thinking skills.

## CHAPTER 3

### Methodology and Treatment of the Data

#### Introduction

The researcher set forth to find out if a correlation existed between Wishkah Valley third and fourth grade Spring 2008 Star Math scores and the third and fourth grade Spring 2008 WASL math scores. The researcher used the Spearman rho for test of significance.

The Wishkah Valley School District used STAR math scores to identify struggling students and place them in the LAP math program. The researcher sought to find out if the practice was in fact identifying students who would struggle on the WASL supporting the practice. If students who performed poorly on the STAR math assessment did well on the WASL math assessment then those students might have been receiving help and not needed it or the help that they did receive helped them greatly. When the researcher reviewed STAR math assessment scores over time, the scores fluctuated showing no real consistent growth in the test scores.

This concerned the researcher and forced questioning the use of the test.

### Methodology

The researchers chose to do a correlation study. The researcher used one group of students and two sets of scores to conduct the study and calculated the probability that a correlation existed.

### Participants

The researcher chose the 2008 combination class of 3<sup>rd</sup>/4<sup>th</sup> graders. There were 15 students total in the class. The diversity of the population showed 1 student of Hispanic descent and the remaining 14 students of Caucasian decent. The researcher chose to include every student in the fourth grade that had valid WASL math and STAR math scores.



## Instruments

Information gathered for the study came from the Spring 2008 STAR math and Spring 2008 WASL math test scores.

On the STAR math website one study indicated that the STAR Math scores had a medium correlation to the ITBS test scores. The STAR Math test assessed the students' math skill level and gave the results as a number that was equivalent to a grade level. The STAR Math test was administered to the research population Wishkah Valley 3<sup>rd</sup>/4th graders, in the school's library by the school curriculum director. The test was given three times a year to every student (Fall, Winter, and Spring) to monitor student progress as well as to identify struggling students.

The WASL test was a standards based test that was taken by the students of Washington State in the spring. The WASL and the 1993 Education Reform legislation was influenced by the Business Round Table, many of whom were not satisfied with the quality of high school graduates. (Rust 2009)

Certificates of Mastery were received once a 10<sup>th</sup> grader had passed all parts of the WASL, bringing a culture of high stakes testing to the schools of Washington State. The likelihood of scores differing on subjective tests was very high. Errors could happen frequently because humans bring their own biases and are not 100% consistent all of the time. Objective tests were rarely swayed by the scorer. One of the students in the studied population did not take the WASL; instead they participated in the WAAS assessment where the individual compiled work to show they are making progress. (Killen 2009)

### Design

Scores were taken from the spring 2008 WASL math testing and the spring 2008 STAR math testing. A correlation study was constructed on a lineplot to determine if a linear relationship existed between the two scores. The objective of the study was to find out if a relationship existed and to what degree. The sample was extremely small for this type of study so

the results of the study might not be typical of a larger population.

The students were assessed on STAR Math in the school library. The testing coordinator and the school librarian were present throughout the testing. When assessed for the WASL test the students remained in their classroom with their classroom teacher throughout the test. There was no talking throughout the test and all scripted test procedures were followed.

There was one student in the class that took the WASL but did not have spring STAR math scores as he had come from a different school that did not administer STAR math, so his scores were excluded from the study.

### Procedure

During the months of October, November, December and January the researcher sought to gather as much information as possible about the Star Math assessment and the Washington State Assessment of Learning test. The researcher gathered additional information from research articles and library books at Heritage

University, regarding this subject matter to insure enough information was collected for the study. Next, the researcher took the data collected from the testing supervisor and used it in a correlation study. The information gathered showed two separate scores of data. The Star Math and the WASL Math tests were administered during a close time frame. The researcher then used the Pearson Product  $r$ , a mathematical test to see if a correlation existed, using rank order, and tested to see if there was a significant correlation between the two sets of scores. In the next step the researcher took the information collected and graphed the data to have visual representation of the results.

#### Treatment of Data

The tool that the researcher used to analyze the data was the Pearson Product  $r$  correlation coefficient. This mathematical tool is used to find the correlation between a pair of ranked scores that are expressed as continuous. In the case of the study that the researcher conducted, the two scores that were compared

were the STAR Math assessment results and the WASL math assessment results.

Each student had two scores and each set of scores were ranked from the highest score to the lowest score for that group. The two sets of scores were graphed on a line plot and analyzed with the Pearson Product R.

### Summary

The researcher gathered data from the 2008 3<sup>rd</sup>/4<sup>th</sup> grade class which will graduate in 2017/2016 respectively. The researcher chose to do a correlation study with one set of students and two sets of data from the spring 2008 WASL and STAR Math assessments. The researcher compiled, ranked, graphed and analyzed the data using line plots and the Pearson Product R. Using this technique enabled the researcher to see if a correlation existed using data expressed as continuous (i.e. ratio or interval).

## CHAPTER 4

### Analysis of the Data

#### Introduction

The purpose of this study was to find out if a correlation existed between the STAR math assessment and the WASL math assessment. If a correlation existed, then the researcher felt that Wishkah Valley School District should continue to use that STAR math as a placement tool for students placed into the math LAP program. This program was designed for students who struggled in math. If placed into the program, these students received extra help or assistance in improving their math skill level. If a correlation did not exist, the researcher felt that the school should research alternative placement tools to determine eligibility to the LAP program.

#### Description of the Environment

The researcher gathered scores from the 3<sup>rd</sup>/4<sup>th</sup> grade class at Wishkah Valley School. The 3<sup>rd</sup>/4<sup>th</sup> grade classroom had students from various social-economic

backgrounds and learning styles. Students in this classroom also ranged from 2.5 to 4.5 in academic grade level according to the pre-study level tests given at the beginning of the year. The class was a combined class consisting of 14 students. The data collected was from the 2008 spring Star testing and the spring 2008 WASL test scores.

#### Hypothesis

There is a positive correlation between the Star math placement tool and student achievement on the math WASL. Staff members will believe that the Star test is an effective placement tool.

#### Null Hypothesis

There is no correlation between the Star math placement tool and student achievement on the math WASL. Staff members will not believe that the Star test is an effective placement tool.

### Results of the Study

The researcher found that when comparing the results from the WASL math assessment and the STAR math test there was significant relationship between the two scores.



Table 1 showed the data that was analyzed in the study. The x column showed the WASL math scores from 2008. The Rx column showed the rank order of the WASL math scores. The y column showed the STAR math scores taken from spring 2008. The Ry column showed the rank order of the STAR math assessment scores.

2008 Wishkah WASL Math and STAR Math Results

| Student                     | WASL (x) | Rank (Rx) | STAR (y) | Rank (Ry) |
|-----------------------------|----------|-----------|----------|-----------|
| <u>3<sup>rd</sup> grade</u> |          |           |          |           |
| S1                          | 440      | 1         | 81       | 2         |
| S2                          | 417      | 2         | 70       | 4         |
| S3                          | 405      | 3.5       | 23       | 5         |
| S4                          | 405      | 3.5       | 89       | 1         |
| S5                          | 400      | 5         | 79       | 3         |
| S6                          | 381      | 6         | 17       | 6         |
| S7                          | 365      | 7         | 4        | 7         |
| <u>4<sup>th</sup> grade</u> |          |           |          |           |
| S7                          | 518      | 1         | 89       | 1         |
| S8                          | 441      | 2         | 79       | 3         |
| S9                          | 430      | 3         | 85       | 2         |
| S10                         | 406      | 4         | 52       | 4         |

Table 1

Table 2 showed the values of the correlation of coefficient. The degrees of freedom was 9, there were 11 valid scores and  $df = n - 2$ . After calculating the correlation of coefficient it was found that the relationship was .67. According to Gay (2006) the r value must be higher than the threshold value to support the hypothesis and to reject the null hypothesis. Table 2 showed that at all levels of significance the hypothesis was supported and the null hypothesis was rejected.

Values of the Correlation of Coefficient

|                        |   | P     |       |       |
|------------------------|---|-------|-------|-------|
|                        |   | ----- |       |       |
| Df                     | 9 | .05   | .01   | .001  |
| Significance Threshold |   | .6021 | .7348 | .8471 |

Table 2

Table 3 showed the mathematical formula for calculating the Pearsons r correlation of coefficient. The X and Y represented the two different sets of scores from the Spring 2008 WASL and the Spring 2008 Star Math scores used for the study. The r value was then found by calculating the data using the formula.

Pearsons r

---


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

$$r = .67$$


---

Table 3

Table 4 showed the data collected from both sets of data. This graph identified a strong correlation between the Spring WASL 2008 scores and the STAR math placement tool.

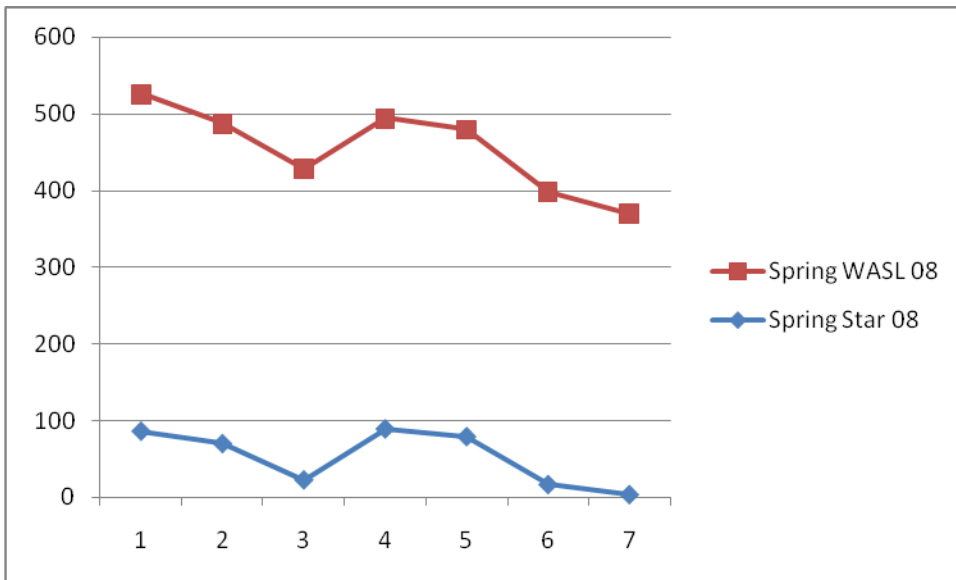


Table 4

Figures 5-13 represent the Wishkah Valley Elementary staff's responses to a survey. The survey was presented so that the researcher could understand how the staff felt about using STAR math as a placement tool. The data collected was shared with the staff at a staff meeting following the completion of the study.

To the statement, "Staff members believe that the Star test is an effective placement tool." The staff members were split in their feeling about the effectiveness of the STAR Math placement tool.

Question #1

Staff members believe that the Star test is an effective placement tool.

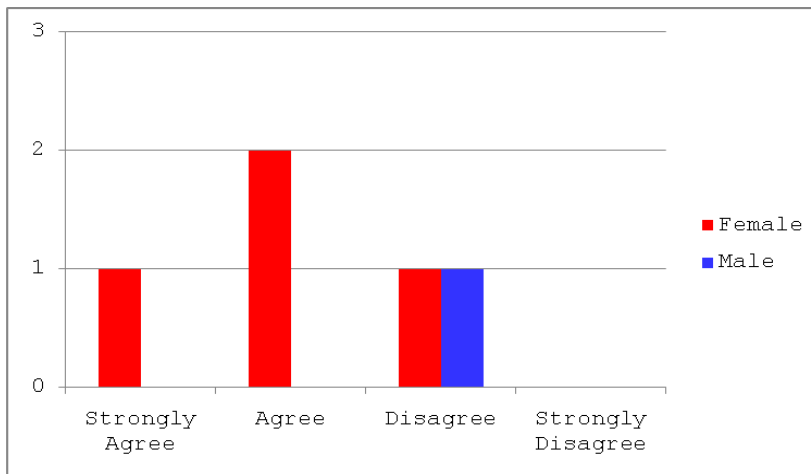


Figure 5

The staff member's responses to the statement, "The Star Test verifies students' knowledge of the state standards." The staff strongly believed the STAR test does not verify their students' knowledge of the state standards.

Question #2

The Star Test verifies students' knowledge of the state standards."

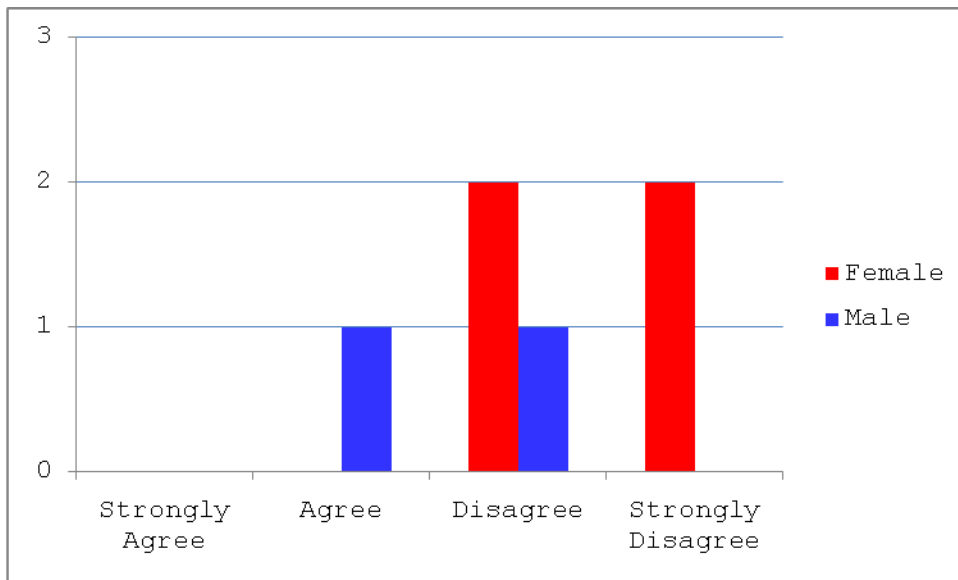


Figure 6

When posed the following question, "*The Star Test identifies the students' appropriate level of instruction.*" Staff members did not believe the Star test identified the student's appropriate level of instruction.

Question #3

The Star Test identifies the students' appropriate level of instruction.

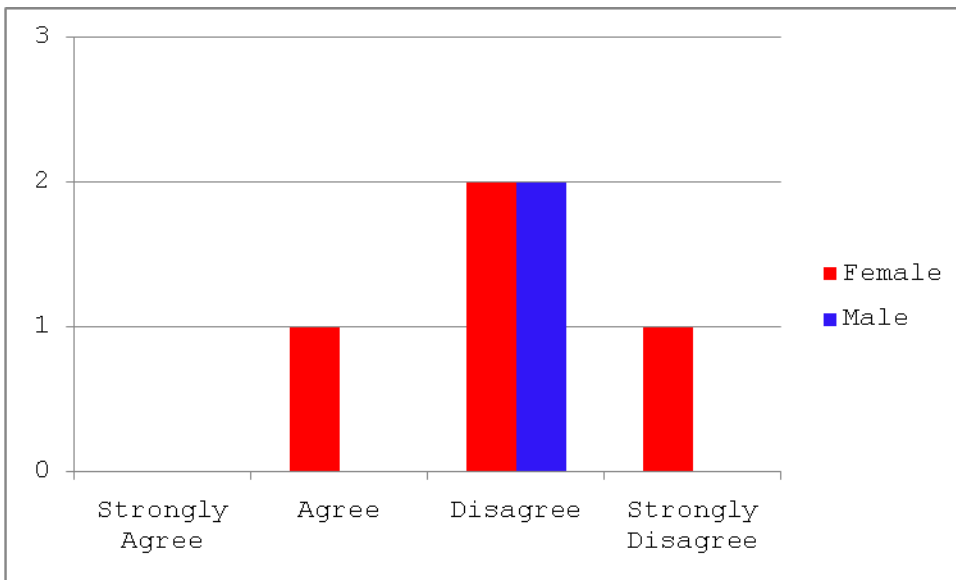


Figure 7



To the following question, "Summer retention does not affect placement results." Four of six staff members believed that summer retention did affect placement results.

Question #4

Summer retention does not affect placement results.

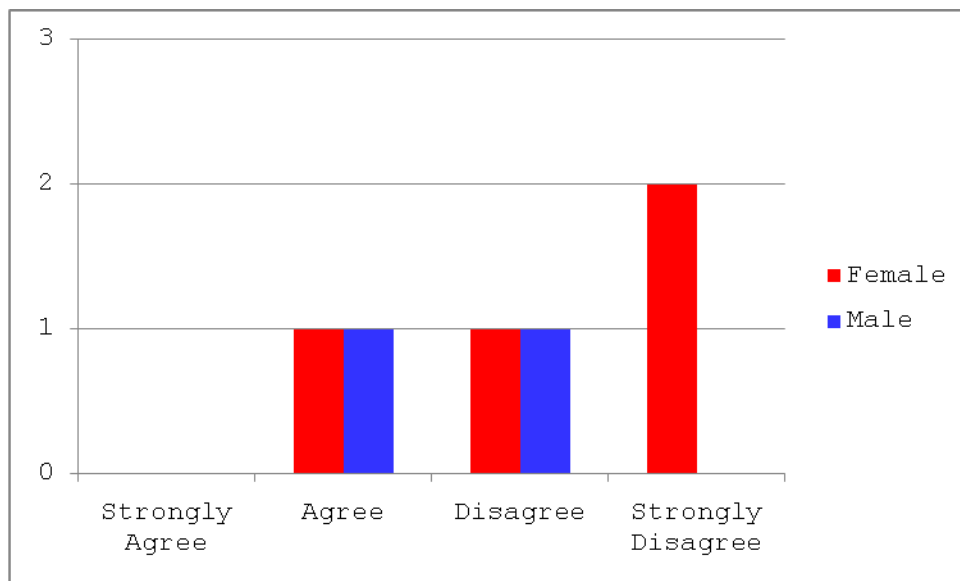


Figure 8

When posed the following question, "There is a high correlation between the Star Math placement tool and student achievement on the math WASL." A majority of staff members did not believe that there was a high correlation between the Star Math placement tool and student achievement on the math WASL.

Question #5

There is a high correlation between the Star Math placement tool and student achievement on the math WASL.

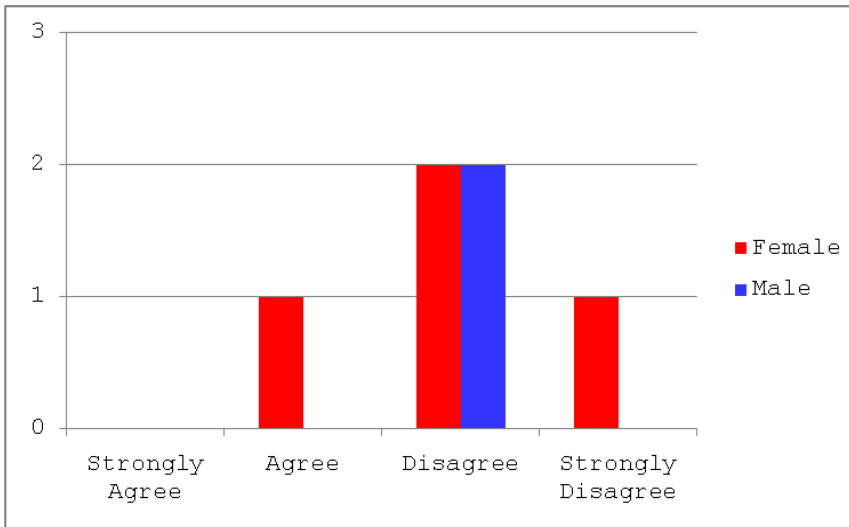


Figure 9

To the following question, "Our math program is aligned with the state GLE's." Staff members believed that the current math program was strongly aligned with the state GLE's.

Question #6

Our math program is aligned with the state GLE's.

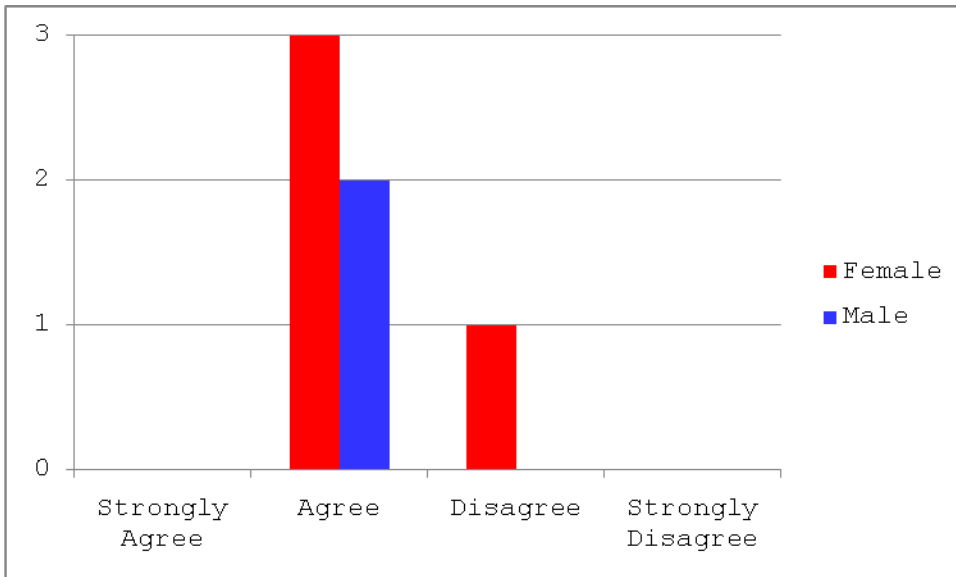


Figure 10

When asked this question, "Our students can easily be moved out of the LAP program when appropriate." The majority of staff members did not believe that students were allowed to move out of the LAP program when appropriate.

Question #7

Our students can easily be moved out of the LAP program when appropriate.

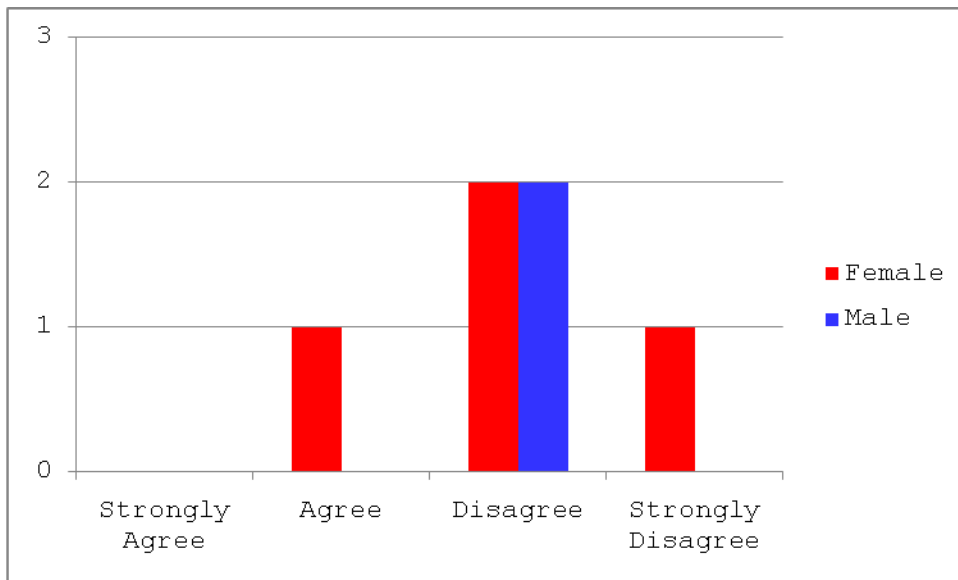


Figure 11

The staff members opinion on if assistance of aides in the classroom is effectively allocated was split three to three in the following question. "The assistance of aides in the classroom was effectively allocated."

Question #8

The assistance of aides in the classroom was effectively allocated.

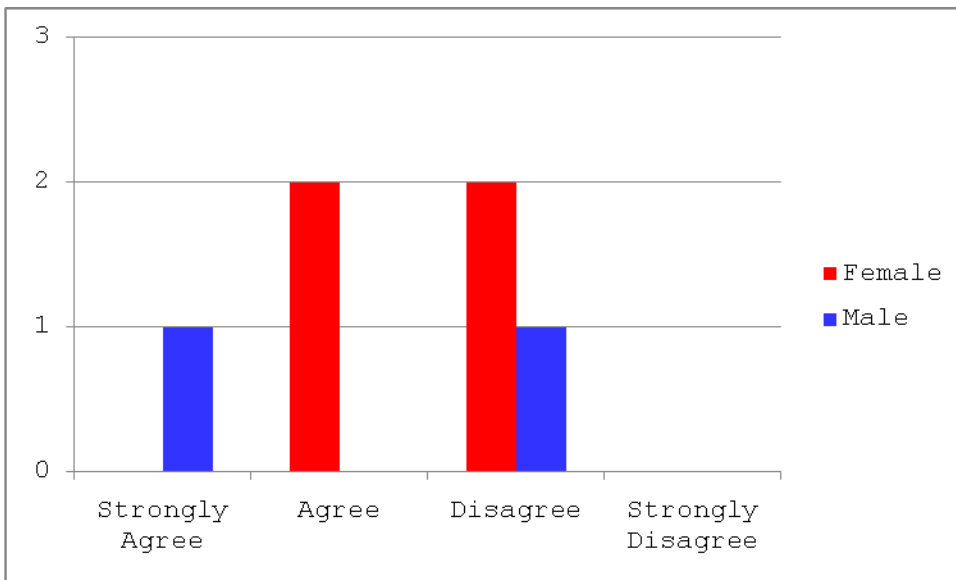


Figure 12

On the next question, "All students who need help in math are being serviced at this time." The staff members strongly agreed that the students that needed help had been serviced.

Question #9

All students who need help in math are being serviced at this time.

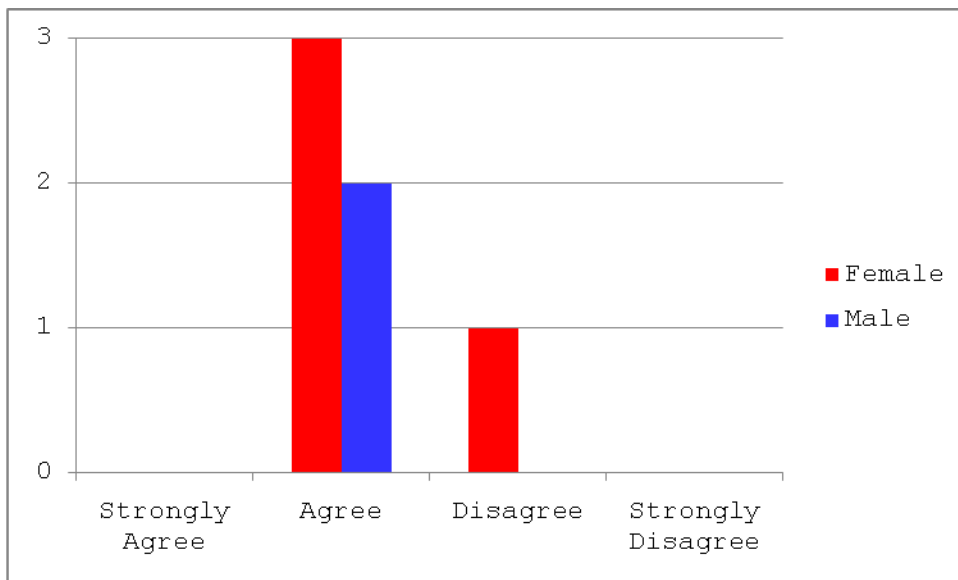


Figure 13

## Findings

After the researcher analyzed the data it was found that there was significant correlation between the WASL math test and the STAR math assessment. To test for significance of the coefficient of correlation must be higher than .05, .01, and .001. With the degrees of freedom (n-2) and computing significance with the r value at .67 the null hypothesis was rejected at all levels of significance and the hypothesis was supported at all levels. With a r value equal to .67 it was shown that a significant correlation existed between WASL math scores and STAR math scores for the third and fourth graders at Wishkah Elementary in the spring of 2008.

Being that both the STAR math assessment and the WASL math test assess math it was hypothesized that there would be a strong positive relationship between the two assessments. After reviewing other studies on the correlation between the WASL math test and the STAR math assessment, with other achievement tests, it was found that a relationship existed (Jones, 2004).

Although the findings of the study were consistent with other studies (Jones, 2004) if the sample group had been larger the outcome might have been different. The small sample size involved in this study showed only the result for one small combined class. The study would have been more relevant if it had involved different grade levels or a larger population to begin with.

#### Summary

It was found that there was a significant correlation existed at .05, .01, or .001 between the STAR math assessment and the WASL math test in the third/fourth grade from spring 2008. The data gave support to the hypothesis and the null hypothesis was rejected at all levels.



## CHAPTER 5

### Summary, Conclusions and Recommendations

The researcher conducted the study to find out if a significant correlation existed between the STAR math assessment and the WASL math test for the third/fourth grade class of 2008 at Wishkah Valley Elementary. The Wishkah Valley School used the results of the STAR math assessment to place students into the LAP math program. The researcher wanted to see if there was statistical data to support this practice.

#### Summary

After identifying a problem in the method Wishkah Valley School placed students into the LAP math program the researcher sought to find if there was a significant correlation between WASL math and STAR math assessment scores. Wishkah Valley School was using the STAR math test to place students into the LAP math program. If this practice identified students who would also perform poorly on the WASL math test then the practice would be of use. If a correlation did not

exist then the practice of placing students into LAP math should be reevaluated.

Several articles were reviewed by the researcher and background knowledge was gained about the value of the WASL math test and the STAR math assessment. Information about the assessments was used to better understand the purpose for the assessment and how their results are used by schools.

After analyzing the data using the Pearsons r correlation of coefficient it was found that a significant correlation existed between the STAR math assessment and the WASL math test.

### Conclusions

The findings of the study were important because the study group was under the researcher's direction in the third/fourth grade. The study was used to better identify students who needed extra help in math. With the guidance of the study, teacher recommendation was also used for student entry into the LAP math program.

For this study to be more meaningful at Wishkah Valley School it could have included data from a

variety of grade levels as opposed to just one combination class containing only eleven students.

### Recommendations

After finding that there is significant correlation between the WASL math test and the STAR math assessment it is the recommendation of the researcher that the STAR math test continue to be an assessment used to place students into the LAP math program. It is also the researcher's recommendation that the classroom teacher be able to use daily math data to refer students to the LAP math program. The STAR math assessment in conjunction with teacher recommendation would help to better identify struggling students, getting them the help they need to meet standard on the math portion of the WASL.

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