ANALYSES OF PERFORMANCE SERIES TEST SCORES AND MAP SCORES.

IS THERE A PREDICTABLE MODEL?

By

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ABSTRACT

The purpose of this study was to analyze the Missouri Assessment Program (MAP) scores to see if they can be predicted by the Performance Series scores. The research includes findings that answer the question, ‘Can the Missouri Assessment Program scores be predicted from the Performance Series scores in third and fourth grade reading and math and fifth grade reading, math, and science?’ The research was conducted using scores from third, fourth, and fifth grade students in a suburban Missouri school district. The Performance Series test is a computerized test that the district requires every third, fourth, and fifth grade student to take. It compares the scores of all students in those grade levels against one another. The findings were analyzed through Microsoft Excel and A Statistical Program (ASP) software utilizing Simple Linear Regression. Findings indicate that the third grade, fourth grade, and fifth grade MAP Communication Arts and Math scores can be predicted from the Performance Series Communication Arts and Math scores. These can be predicted with high significance. Further study of internal and external factors is warranted. Additionally, school districts may want to consider how “bubble” students will be targeted after the Performance Series is taken in preparation for the MAP test.
INTRODUCTION

Background, Issues and Concerns

A suburban school district located in the Midwest, hereafter referred to as LPS, has experienced a strong desire to achieve at a high level on the Missouri Assessment Program test, referred to as the MAP test. LPS gives the Performance Series test as a measure of how the students are performing in reading and math in third and fourth grade and reading, math, and science, in fifth grade, the tested subjects on the MAP test. The Performance Series allows LPS to compare students in a particular grade level across the district. The MAP test compares the schools across the state of Missouri. In 2012, LPS ranked number 31 out of 557 districts in the state of Missouri ("Show-me: education; know how," 2012). The MAP test is divided into four scoring categories. The categories consist of below basic, being the lowest, basic, proficient, and advanced being the highest. This test is given to students in third through twelfth grade. This research consists of scores of third through fifth graders in a LPS elementary school.

During the 2012 school year in the LPS district 33.2% of third graders were proficient and 21.5% were advanced in Communication Arts (CA) and 50.5% proficient and 19.9% advanced in math. Out of all fourth graders 36.2% were proficient and 29.2% advanced in CA and 26.3% proficient and 20.8% advance in math. Fifth graders were tested in three curriculum areas, communication arts, math, and science. In CA 36.9% were proficient and 29.8% advanced; in math 40.6% were proficient and 33.1% advanced and in science 30% proficient and 37% advanced in science (DESE, 2012). The MAP test is required by the state of Missouri, but the Performance Series test is a district wide test. The scores are computerized and allow the teachers to create assessments, discuss with parents, and determine if the student needs help in other areas.
Practice Under Investigation

The practice under investigation is whether or not the Performance Series test is a predictable model of the MAP scores.

School Policy to be Informed by the Study

The suburban school that was surveyed is required to give the Performance Series test three times a school year. Those three times include the Fall, Winter, and Spring of each school year. The Performance Series test is based on a computer adaptive model that targets the instructional level of each student. Question difficulty is altered for each student and depends on their previous answers. If a student answers correctly, the test increases the item difficulty to appropriate challenge the student. The Performance Series is a test that provides an accurate account of the student’s ability on, below, or above grade level. Once the student has finished the test it can be viewed immediately to provide feedback to the student, teacher, school, and district. It allows for the district to the compare the scores of all students in a particular grade level and curriculum area (Scantron Corporation, 2012).

The other scores being surveyed are the MAP scores of the third, fourth, and fifth grade students. This is a state wide assessment given to all students beginning in third grade. It is given during the testing window established by DESE. Schools decide when they will complete the test in the spring of each year contingent on the open window time frame. The study of these scores is to analyze whether or not the Performance Series is a predictable model of the MAP test scores.
Students’ scores from a suburban Missouri school district were selected to determine if the Performance Series test was a predictable model for the MAP test. After analyzing and evaluating these statistics, the results can be linked to the work and conceptual underpinnings provided by the No Child Left Behind act, established in 2002 by President Bush. Many districts have implemented and required so many assessments because of this act. High-stakes testing helps enforce educational accountability. The majority of the United States enforces some type of High Stakes Testing to evaluate student performance. President Bush enacted “No Child Left Behind” in 2002 which changed the role of the United States government in education.

Educators base instruction off of student progress. “At the core of the No Child Left Behind Act were a number of measures designed to drive broad gains in student achievement and to hold states and schools more accountable for student progress. They represented significant changes to the education landscape” (U.S. Department of Education, 2001 para. 3).

There were many requirements that No Child Left Behind (NCLB) required of educators and administrators. By the 2005-2006 school year, annual testing was to begin. Students in grades 3-8 were to be annually testing in reading and mathematics. The tests had to be aligned with state standards. States were required to bring students up to a ‘proficient’ level by the 2013-2014 school year. “Individual schools had to meet state "adequate yearly progress" (AYP) targets toward this goal (based on a formula spelled out in the law) for both their student populations as a whole and for certain demographic subgroups. If a school receiving federal Title I funding failed to meet the target two years in a row, it would be provided technical assistance and its students would be offered a choice of other public schools to attend” (Education Week, 2004 para.5). At the end of the 2005-2006 school year teachers were supposed to be “highly
qualified” in the subject they taught. NCLB has caused many controversies regarding the limitations of curriculum and the limitations of teachers. People question what truly is important and the best ways to know that students are learning. As of July 2012, Missouri earned a waiver to apply their own accountability systems and not follow NCLB any further. The demands of all ethic, socio-economic, and special education subgroups performing at proficient or advanced levels became too much. “Nearly nine out of 10 Missouri schools were no longer meeting the federal standard” (Robertson, 2012 para.3). As assessments become more relied upon teachers realize there are many internal and external factors that go into preparing for assessments. This not only affects the teaching of material, but also the concentration of learning from the students. It is important to realize all of the life factors that play into the students’ lives.

If the Performance Series test is an early indicator to predict MAP test scores, educators will have a better idea of identifying bubble and low achieving students. Thus, teachers and administrators will be able to work together to implement resources to enable higher student achievement on the MAP test and in other curriculum areas in the classroom. This would greatly affect NCLB and the scores that influence important decisions to meet necessary requirements. Identifying students early on will help teachers meet the individual needs of their students and help reduce the achievement gap that teachers see from year to year. It’s important to not lose focus on the bubble students since the majority of a teachers time is spent on low and high achieving students. The Performance Series is a piece of the puzzle to help identify and present data on specific students so the teacher can work towards maximizing their learning potential.
Statement of the Problem.

There is an abundance of assessments that teachers are required to give. Analyzing the Performance Series scores to see if it is a predictable model of the MAP scores will give teachers a better sense of how to help their students. Teachers will be able to better assist their “bubble” students with their learning and find the areas of studying that they are missing. The problem is determining if the Assessment Series can predict MAP performance.

Purpose of the Study.

The purpose of the study is to analyze the Performance Series scores to see if they can predict the Missouri Assessment Program scores. The information gained will help educators better determine which students need more help in specific areas. If there is a correlation, teachers will have a better knowledge base for how students will perform on the MAP test from the Performance Series scores. Overall, it will help teachers meet the needs of their students better.

Research Question

RQ 1: Can the MAP Scores be predicted from the Performance Series scores in third and fourth grade reading and math and fifth grade reading, math, and science?

Null Hypotheses

H₀. There is no predicted model. The Performance Series scores do not predict the MAP scores.

Anticipated benefits of the study.

The result of this study will inform educators in this suburban district if the Performance Series is a predictable model of the MAP scores. It will allow teachers to better target “bubble” students and meet their educational needs. Figuring out which educational skills students are
missing will help teachers push those students from Basic to Proficient on the MAP test. More individual and group instruction will take place focusing on specific target skills.

Definition of Terms.

MAP: Missouri Assessment Program
LPS: Liberty Public School District
DESE: Department of Elementary and Secondary Education
NCLB: No Child Left Behind Act of 2001
AYP: Adequate Yearly Progress
IEP: Individualized Education Plan
ELL: English Language Learner

Summary

LPS is a Midwestern suburban school district. The school district has implemented the Performance Series test for students in grades third, fourth, and fifth grade. It allows the district to compare the scores of all students in a particular grade level. This research analyzes the Performance Series scores to see if they can predict the MAP scores. The research will compare reading and math for third and fourth grade and reading, math, and science for fifth grade. Finally, the research will analyze the Performance Series and MAP scores to see if there is a predictable model.
REVIEW OF LITERATURE

This study will be using simple linear regression model to analyze the Performance Series scores and MAP scores. “Regression analysis is a statistical technique that attempts to explore and model the relationship between two or more variables. A linear regression model attempts to explain the relationship between two or more variables using a straight line.” (ReliaSoft Corporation, 2008 para.1). This analysis allows the researcher to model, explore, and examine spatial relationships. It helps explain the factors behind observed spatial patterns. It can also be used for prediction. Linear relationships are either positive or negative. “Regression analyses, on the other hand, make a stronger claim; they attempt to demonstrate the degree to which one or more variables potentially promote positive or negative change in another variable” ("Regression analysis basics," 2012 para.4).

The Missouri Assessment Program test (MAP) is a widely known test to parents and educators of elementary and secondary students. “It is a series of assessments for Communication Arts, Mathematics and Science at grades 3-8; and Communication Arts, Mathematics, Science and Social Studies in high school. These assessments are designed to see if students in Missouri are meeting the Show-Me Standards” ("Department of elementary," 2012 para.1). The Show-Me Standards are a guide to what the students should know and do. There are 40 knowledge standards and 33 performance standards that these test are constructed around. Each grade-level assessments are made up of multiple-choice, which are machine scored items, and “constructed response”. Students are required to write out their answers rather than select an appropriate response. Teachers work diligently each year to make sure students understand how to read each question so they can showcase their knowledge about a particular subject matter. Students not only must explain their thinking, but they must show how they arrived at their
answer. These processes take some getting used to for elementary students. It becomes a different way of thinking. There are many internal and external factors that go into testing. It is important for teachers to relay this information to parents to help give each child the best opportunity at maximizing their learning potential. For example: be certain your child has had adequate rest, be on time for school, eat a good breakfast, avoid scheduling appointments in the mornings of the testing days, etc. The MAP test can cause a lot of anxiety for children. It is important to reassure students that educators just want to see their best thinking. Some students will struggle with the time allotted for each section. For some it will be too much and others too little. Practicing these scenarios help students feel more comfortable ("Department of elementary," 2012).

The MAP test has created quite a bit of constraints for teachers. Teachers feel like they are teaching to the test and that curriculum is limited. Due to NCLB educators feel the added pressure of making sure students are learning the tested material for the MAP test. This creates more pressure to quickly get through material rather than more in-depth thinking about the subject matter. Students are focusing on breaking apart questions, reading between the lines, and analyzing their work so people that don’t know them can assess their knowledge level. As the Common Core standards are implemented it will be interesting to see the changes being made to the MAP test and the structure of questions.

The Performance Series is a test that provides an accurate account of the student’s ability on, below, or above grade level. “Performance Series from Scantron is a computer-adaptive test that lets you quickly pinpoint the proficiency level of your students, across a range of subjects that correspond with the specific standards of your state. This provides for more accurate student
Each student takes an individual test. The tests automatically adapt to the student’s ability level. If the student is getting the easier questions correct then the test will generate more challenging questions for the student to answer. If the student is answering incorrectly then easier questions will be given. This data then provides placement information. Students are grouped into four categories after the test is complete. Those categories are below average, low average, high average, and above average. Based on the student’s individual needs the teacher can create a learning plan for them (Scantron Corporation, 2012). This will help maximize their learning potential! This test is aligned to state standards and objectives that the students must know at the end of a particular grade level. A district that chooses to administer the Performance Series test is able to review results at the student, class, school, and district level. This is a positive for administrators to see if standards and objectives are being met. However, it is important to remember the internal and external factors that go into testing.

In addition to this regression model being tested, there have been other regression model analyses done in the Elementary School setting. One of the studies looked at mobility of elementary students in correlation to their reading levels. Typically mobility is associated with low-income status, race/ethnicity, inner city residence, single parent households, migrant status, speaking English as a second language, stressful life events, grade repetition, and behavioral difficulties in class. Research indicates that changing schools has a great influence on reading and mathematics achievement. Some research is even stating that mobility has a great effect on reading and mathematics achievement than the other factors listed above. Teachers have reported that in districts with high mobility rates that they are rarely given any advance notice about when
the new student will arrive, no indication of the child’s past or current performance levels in the form of records or assessments. This research indicated that school mobility had a negative influence on both math and reading achievement. The research also pointed out those students made only one school change in high school was twice as likely to drop out of high school as non-mobile students. In addition, elementary mobile students were more likely to be retained than their non-mobile peers. Overall, changing schools is more detrimental for students with a low SES status than students with a higher SES status. This accounts the external factors that play into those situations (Burkam, Lee, Dwyer, 2009).

This next Regression model discussed whether or not sixth grade should be in elementary school or middle school and the impact it had on student behavior. According to data used in North Carolina it is apparent that sixth graders are more likely to be cited for behavior problems in middle school than in elementary schools. One of the plausible findings is that sixth graders are at an extremely impressionable age and in middle school they are exposed and influenced by older peers. Based on the findings of this research, there is a strong argument to separate sixth graders from older peers to reduce the possible behavior problems students might have (Cook, MacCoun, Muschkin, Vigdor, 2007).

A study of more than 500 third-grade teachers was done to address technology and rural elementary schools. The first analyses compared rural and non-rural teachers. It discovered that rural teachers had a more positive attitude towards technology than non-rural teachers (Hough, Howley, Wood, 2011). This was surprising considering most rural schools do not have the amount of technology as big suburban districts. Quite possible this is why rural teachers have a more positive attitude because they are allowed more time to get used to the technology and learn it. “Regression results showed that attitudes, teachers’ preparation for using technology, and the
availability of technology had significant positive associations with technology integration, whereas the schools’ remoteness and socioeconomic status did not have significant associations” (Hough, Howley, Wood, 2011 para.1). However, rural teachers have noted that their experience to technology has been limited as well as their preparation. Therefore they struggle with the implementation of technology into lessons as well as maintaining student engagement with these sophisticated applications.

Overall the regression model is a model that is widely used to research findings in elementary schools. Many researchers have a constant dependent variable, but want to change the independent variable multiple times to achieve the desired results. The regression model allows this to be done. It is also used mostly with natural occurring variables. Many of these variables present themselves nicely to this model! The purpose of regression analysis is to come up with an equation of a line that fits through that cluster of points with the minimal amount of deviations from the line (Abrams, 2007).
RESEARCH METHODS

Research Design

A collection of third and fourth grade reading and math Performance Series and MAP scores was collected and fifth grade reading, math, and science Performance Series and MAP scores for a suburban school in the LPS district. The alpha level was set at 0.25 for all tests with this research. The independent variable was the Performance Series scores and the survey will measure the results of several dependent variables. The tests run will include the simple linear regression model.

Study Group Description

The study group for this research consisted of 116 third graders, 84 fourth graders, and 106 fifth grade students in the same school. This school is a suburban school district in Missouri. This district is referred to as LPS. These scores represent the Performance Series test that was given in the winter of 2011 and the MAP test scores of 2012. They are from the 2011-2012 school year. In 2011, 594 students attended the suburban LPS school. Out of all students enrolled 2.2% Asian, 5.7% Black, 5.6% Hispanic, 1% Indian, and 85.4% White. Numerous students are on IEPs, 504 plans, and are ELL students. These are factors that would include multiple accommodations to help meet the students’ needs.

Data Collection and Instrumentation

Scores were obtained from the principal. She put together Excel spread sheets stating 3rd-5th grade multiple measures data for teachers to use at the beginning of the school year. This gives teachers an idea for where their students are academically. After removing all confidential information the scores were compiled into one Excel spread sheet per test. All third, fourth, and
fifth grade Performance Series scores in one and third, fourth, and fifth grade MAP test scores in another. Most words were removed so that the statistical analysis could be completed.

Statistical Analysis Methods

A Statistical Package (ASP) software was used to complete the statistical calculations in this study. Descriptive statistics and ANOVA Simple Linear Regression were calculated. Additionally, Microsoft Excel was used to compile some totals used in the research.
FINDINGS

To determine if the Performance Series is a predictable model for the MAP test a number of tables will be analyzed, beginning with third grade Communication Arts Performance Series and MAP test scores.

Question: Can the MAP Communication Arts scores be predicted from the Performance Series Communication Arts scores for third grade?

Table 1: Regression Analysis for Performance Series Communication Arts scores vs. MAP Communication Arts Test scores

Model: MAP_CA_SCORE=0.0803541 P-SeriesReading2011-2012 + 452.537CNST

<table>
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<tr>
<th>Source</th>
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<th>R²</th>
<th>SEE</th>
<th>F</th>
<th>p-value</th>
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<tr>
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</tr>
<tr>
<td>P-Series CA</td>
<td>0.08</td>
<td>0.51</td>
<td>17.84</td>
<td>124.21</td>
<td>1.658E-19</td>
</tr>
</tbody>
</table>

Alpha = 0.25

This data is compiled from third grade students in the suburban LPS district. The Performance Series Communication Arts scores and MAP Communication Arts scores were analyzed to gather and predict a variety of data. This test is concluding whether or not the MAP Communication Arts scores can be predicted from the Performance Series Communication Arts scores. The null hypothesis states that the Performance Series Communication Arts scores cannot predict the MAP Communication Arts scores. The Model: MAP_CA_SCORE=0.0803541 P-SeriesReading2011-2012 + 452.537CNST says for every increase of 1 on the Performance Series the MAP scores is predicted to increase 0.080. The
Model Power (R Squared) is 51% of the variance. It is significantly powerful. When looking at the Standard Error of Estimate (SEE) it is accurate at + or – 17.84 points at 1 standard deviation. F is related to 0. The F-Value is 124.21 and is relatively high when compared to zero. With a P-Value of 1.658E-19 it is concluded that the null hypothesis can be rejected with great confidence because of the significant prediction. The third grade MAP Communication Arts scores can be predicted from the third grade Performance Series Communication Arts scores because the P-Value is less than the alpha level creating a significant prediction.

Research Question: Can the MAP Communication Arts scores be predicted from the Performance Series Communication Arts scores for third grade?

Conditions: Confidence Limits = 95

Value for Communication Arts Performance Series= 2500

Forecast = 653.422
Lower = 617.883
Upper = 688.961
Question: Can the MAP Math scores be predicted from the Performance Series Math scores for third grade?

Table 2: Regression Analysis for third grade Performance Series Math scores vs. MAP Math Test scores

Model: \( \text{MAP\_Math\_SCALE\_SCORE} = 0.172571 \times \text{P-SeriesMath2011-12W} + 239.05 \times \text{CNST} \)

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<tr>
<th>Source</th>
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<td>P-Series Math</td>
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<td>0.43</td>
<td>28.03</td>
<td>80.93</td>
<td>8.302E-15</td>
</tr>
</tbody>
</table>

Alpha = 0.25

This data is compiled from third grade students in the suburban LPS district. The Performance Series Math scores and MAP Math scores were analyzed to gather and predict a variety of data. This test is concluding whether or not the MAP Math scores can be predicted from the Performance Series Math scores. The null hypothesis states that the Performance Series Math scores cannot predict the MAP Math scores. The Model: \( \text{MAP\_Math\_SCALE\_SCORE} = 0.172571 \times \text{P-SeriesMath2011-12W} + 239.05 \times \text{CNST} \) says for every increase of 1 on the Performance Series the MAP score is predicted to increase 0.017. The Model Power (\( R^2 \)) is 43% of the variance. It is slightly powerful. When looking at the Standard Error of Estimate (SEE) it is accurate at \(+\ or\ − 28.03\) points at 1 standard deviation. \( F \) is related to 0. The \( F \)-Value is 80.93 and is relatively high when compared to zero. With a \( P \)-Value of 8.302E-15 it is concluded that the null hypothesis can be rejected with great confidence because of the
significant prediction. The third grade MAP Math scores can be predicted from the third grade Performance Series Math scores because the P-Value is less than the alpha level creating a significant prediction.

Research Question: Can the MAP Math scores be predicted from the Performance Series Math scores for third grade?

Conditions: Confidence Limits = 95

Value for third grade Math Performance Series = 2500

Forecast = 653.221
Lower = 597.398
Upper = 709.044
Question: Can the MAP Communication Arts scores be predicted from the Performance Series Communication Arts scores for fourth grade?

Table 3: Regression Analysis for fourth grade Performance Series Communication Arts scores vs. MAP Communication Arts scores

Model: \( \text{MAP\_CA\_SCALE\_SCORE} = 0.0998564 \times \text{P-SeriesReading2011} + 408.729 \times \text{CNST} \)

<table>
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<tr>
<th>Source</th>
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<td>0.099</td>
<td>0.61</td>
<td>19.14</td>
<td>117.226</td>
<td>6.499E-17</td>
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Alpha = 0.25

This data is compiled from fourth grade students in the suburban LPS district. The Performance Series Communication Arts scores and MAP Communication Arts scores were analyzed to gather and predict a variety of data. This test is concluding whether or not the MAP Communication Arts scores can be predicted from the Performance Series Communication Arts scores. The null hypothesis states that the Performance Series Communication Arts scores cannot predict the MAP Communication Arts scores. The Model: \( \text{MAP\_CA\_SCALE\_SCORE} = 0.0998564 \times \text{P-SeriesReading2011} + 408.729 \times \text{CNST} \) says for every increase of 1 on the Performance Series the MAP score is predicted to increase 0.099. The Model Power (\( R^2 \) Squared) is 61% of the variance. It is significantly powerful. When looking at the Standard Error of Estimate (SEE) it is accurate at \( + \) or \( - \) 19.14 points at 1 standard deviation. \( F \) is related to 0. The F-Value is 117.226 and is extremely high when compared to zero. With a P-Value of 6.499E-17 it is concluded that the null hypothesis can be rejected with great confidence because
of the significant prediction. The fourth grade MAP Communication Arts scores can be predicted from the fourth grade Performance Series Communication Arts scores because the P-Value is less than the alpha level creating a significant prediction.

Research Question: Can the MAP Communication Arts scores be predicted from the Performance Series Communication Arts scores for fourth grade?

Conditions: Confidence Limits = 95

Value for fourth grade Communication Arts Performance Series = 2450

Forecast = 653.377
Lower = 614.882
Upper = 691.872
Question: Can the MAP Math scores be predicted from the Performance Series Math scores for fourth grade?

Table 4: Regression Analysis for fourth grade Performance Series Math scores vs. MAP Math scores

Model: MAP_MATH_SCALE_SCORE = 0.181919P-SeriesMath2011-12W + 222.436CNST

<table>
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<th>Source</th>
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<td>P-Series Math</td>
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<td>99.33</td>
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Alpha = 0.25

This data is compiled from fourth grade students in the suburban LPS district. The Performance Series Math scores and MAP Math scores were analyzed to gather and predict a variety of data. This test is concluding whether or not the MAP Math scores can be predicted from the Performance Series Math scores. The null hypothesis states that the Performance Series Math scores cannot predict the MAP Math scores. The $MAP_MATH\_SCALE\_SCORE = 0.181919P\text{-}SeriesMath2011\text{-}12W + 222.436CNST$ says for every increase of 1 on the Performance Series the MAP score is predicted to increase 0.18. The Model Power (R Squared) is 57% of the variance. It is significantly powerful. When looking at the Standard Error of Estimate (SEE) it is accurate at $\pm 23.19$ points at 1 standard deviation. $F$ is related to 0. The $F$-Value is 99.33 and is extremely high when compared to zero. With a $P$-Value of $2.20E\text{-}15$ it is concluded that the null hypothesis can be rejected with great confidence because of the
significant prediction. The fourth grade MAP Math scores can be predicted from the fourth grade Performance Series Math scores because the P-Value is less than the alpha level creating a significant prediction.

Research Question: Can the MAP Math scores be predicted from the Performance Series Math scores for fourth grade?

Conditions: Confidence Limits = 95

Value for fourth grade Math Performance Series = 2400

Forecast = 659.042

Lower = 612.513

Upper = 705.57
Question: Can the MAP Communication Arts scores be predicted from the Performance Series Communication Arts scores for fifth grade?

Table 5: Regression Analysis for fifth grade Performance Series Communication Arts scores vs. MAP Communication Arts scores

Model: MAP_CA_SCALE_SCORE = 0.111676P-SeriesReading2011- + 371.169CNST

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<th>Source</th>
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Alpha = 0.25

This data is compiled from fifth grade students in the suburban LPS district. The Performance Series Communication Arts scores and MAP Communication Arts scores were analyzed to gather and predict a variety of data. This test is concluding whether or not the MAP Communication Arts scores can be predicted from the Performance Series Communication Arts scores. The null hypothesis states that the Performance Series Communication Arts scores cannot predict the MAP Communication Arts scores. The MAP_CA_SCALE_SCORE = 0.111676P-SeriesReading2011- + 371.169CNST says for every increase of 1 on the Performance Series the MAP score is predicted to increase 0.11. The Model Power (R Squared) is 67% of the variance. It is significantly powerful. When looking at the Standard Error of Estimate (SEE) it is accurate at + or – 16.38 points at 1 standard deviation. F is related to 0. The F-Value is 208.46 and is extremely high when compared to zero. With a P-Value of 2.12E-26 it is concluded that the null hypothesis can be rejected with great confidence because of the
significant prediction. The fifth grade MAP Communication Arts scores can be predicted from the fifth grade Performance Series Communication scores because the P-Value is less than the alpha level creating a significant prediction.

Research Question: Can the MAP Communication Arts scores be predicted from the Performance Series Communication Arts scores for fifth grade?

Conditions: Confidence Limits = 95

Value for fourth grade Math Performance Series = 2550

Forecast = 655.944

Lower = 623.096

Upper = 688.792
Question: Can the MAP Math scores be predicted from the Performance Series Math scores for fifth grade?

Table 6: Regression Analysis for fifth grade Performance Series Math scores vs. MAP Math scores

Model: \( MAP\_Math\_SCALE\_SCORE = 0.17456 \times P\text{-}SeriesMath2011\text{-}12W + 229.622 \times CNST \)

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<th>Source</th>
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<td></td>
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</tr>
<tr>
<td>P-Series Math</td>
<td>0.17</td>
<td>0.56</td>
<td>25.62</td>
<td>132.567</td>
<td>3.26E-20</td>
</tr>
</tbody>
</table>

Alpha = 0.25

This data is compiled from fifth grade students in the suburban LPS district. The Performance Series Math scores and MAP Math scores were analyzed to gather and predict a variety of data. This test is concluding whether or not the MAP Math scores can be predicted from the Performance Series Math scores. The null hypothesis states that the Performance Series Math scores cannot predict the MAP Math scores. The \( MAP\_Math\_SCALE\_SCORE = 0.17456 \times P\text{-}SeriesMath2011\text{-}12W + 229.622 \times CNST \) says for every increase of 1 on the Performance Series the MAP score is predicted to increase 0.17. The Model Power (\( R \) Squared) is 56% of the variance. It is significantly powerful. When looking at the Standard Error of Estimate (SEE) it is accurate at + or – 25.62 points at 1 standard deviation. \( F \) is related to 0. The F-Value is 132.567 and is extremely high when compared to zero. With a P-Value of 3.26E-20 it is concluded that the null hypothesis can be rejected with great confidence because of the significant prediction. The fifth grade MAP Math scores can be predicted from the fifth grade
Performance Series Math because the P-Value is less than the alpha level creating a significant prediction.

Research Question: Can the MAP Math scores be predicted from the Performance Series Math scores for fifth grade?

Conditions: Confidence Limits = 95

Value for fourth grade Math Performance Series= 2450

Forecast = 657.294
Lower = 606.033
Upper = 708.554
CONCLUSIONS AND RECOMMENDATIONS

The null hypothesis stated that the Performance Series is not a predicted model for the MAP test scores. The results of this study indicate that there is a significant prediction of the MAP test scores from the Performance Series scores in both Communication Arts and Math in third, fourth, and fifth grades. All grade levels and curriculum areas showed a significant prediction. This area warrants further study to understand how students that score within a specific parameter on the Performance Series can best be targeted and prepared for the MAP test. It will help identify if the student is missing specific skills. The Performance Series Winter assessment was analyzed which would give educators a significant amount of time before April to develop strategies and a plan to help students reach the desired target scores.

All six questions that were asked resulted in the null hypothesis being rejected. An average of 100 students’ scores was analyzed in the areas of Communication Arts and MAP. The winter 2011-2012 Performance Series scores were used and the 2011-2012 MAP scores were used. This allowed for the most current research to be done. In each table the null hypothesis was rejected with great confidence.

There were many external factors that could have played into the he scores of the students. One of the major external factors is the students’ home lives. This particular suburban school has a 17.1% free/reduced lunch population. Getting the proper sleep, nutrition, and support at home is a struggle that many students experienced. Parents also put a great amount of pressure on students wanting their best effort and thinking. These are the external factors that could greatly affect the outcomes of these tests ("Map test info," 2011). Another strong external factor is the learning curve of testing on a computer versus pencil and paper. The Performance Series is a computer based test that requires students to spend a great amount of time sitting,
focused, and concentrating on the material at hand. Many of the reading passages are very lengthy and require students to click from page to page and then answer questions at the end. Especially for third grade there is a large learning curve that must be thought through. Students need to be given the opportunity to practice and learn how to take assessments this way. The MAP test is a pencil and paper test that is given straight for a week. Students are prepared by their teacher and practice how to answer questions. The tests are graded through a scantron machine or by a hired individual. This test is especially difficult because it is also long, tedious, and requires a great amount of thinking. A lot of pressure is placed on this test because of “No Child Left Behind.”

Internal factors are another battle for children. Many children over analyze the test and create added stress for themselves. They put a lot of pressure on themselves to do the best that they can. It is common for students to develop anxiety over these tests. There are many disagreements on the best ways to assess children. This is a constant battle for educators and a continuous discussion of the curriculum that is being taught in the classrooms.

The findings support the conceptual underpinning that the Performance Series is an early indicator to predict MAP test scores, educators will have a better idea of identifying bubble and low achieving students. Teachers and administrators will be able to work together to implement resources to enable higher student achievement on the MAP test and in other curriculum areas in the classroom. This would greatly affect NCLB and the scores that influence important decisions to meet necessary requirements. Students would be able to perform at a higher level because more practice time, small group, and one-on-one instruction would have been implemented.
The school district may want to consider ways to target students that are close to meeting the proficient level on the MAP test. By analyzing the Performance Series scores teachers would be able to identify students that need small group or one-on-one instruction to help meet their individual needs. Students that are missing specific learning skills need to be identified so these skills can be taught and practiced daily! This will help with all aspects of their educational career. A collaboration of educators will help “bubble” students meet the proficiency level on the MAP test.

There are several areas warranting further study. As previously mentioned, students with different demographic backgrounds could be analyzed to see if their demographics affects their Performance Series and MAP scores. Most of these students don’t have the latest technology at home and the ability to utilize this daily. Many of these students are focusing on if there will be food to eat and put school on the back burner. This might help teachers better meet the needs of these students. This study should be conducted with both Performance Series and MAP test, in a variety of grade levels, and curriculum areas.

An additional study could be done with Missouri adopts the Smarter Balance Assessment in 2014 that will be a computer based test. The rigor of this test will increase and students will face a greater amount of pressure. When analyzed this test would better compare to the Performance Series because it is also a computer based assessment.

Finally, it would be interesting to compare scores of other districts that access the Performance Series as well as other schools in this same district to see how they compare. I predict students that utilize technology daily outside of the classroom and have a stronger support system at home will perform better on the Performance Series. This would contribute to the amount of time spent on the computer outside of the classroom.
References


