THE CORRELATION BETWEEN STUDENT ATTENDANCE AND STUDENT ACHIEVEMENT ON STANDARIZED TEST

By

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Abstract

The purpose of this study was to determine the relationship between student attendance and student achievement on standardized tests. The study group was ninety-two students of a seventh grade class in an urban school district. A study was conducted to analyze if there is a direct relationship between a student’s attendance and achievement on standardized tests. Individual attendance percentages and test scores from the 2014 MAP Communication Arts and Mathematics were collected for each student for the 2012-2013 academic year. Using A Statistic Package (ASP), data was entered into the system to test the correlation between student attendance and student achievement. The analysis resulted in a significant, positive relationship between student attendance and student achievement in the MAP Mathematics test. However, the analysis depicted no significant relationship between student attendance and student achievement in the MAP Communication Arts test. Based on the results, schools should increase the communication with parents about the importance of attendance and student achievement in education.
Introduction

*Background, Issues and Concerns*

In Missouri, schools are rated on performance based on the Missouri School Improvement Plan (MSIP). Within MSIP, standardized tests are used to rate student achievement and growth within each school district. Based on scores from standardized testing, school districts are either rewarded or punished. Schools could lose their accreditation if they do not reach a certain percentage on the MSIP. With the importance placed on these scores and student achievement, educators are placed under pressure to improve these scores by the district. Therefore, the issue becomes how to improve these scores and create growth as a district in student achievement on standardized tests.

With every teacher needing to show growth on achievements for their subject, school districts are working to find a result to improve. Teachers are able to change and improve instruction to further a student’s learning on subjects. However, if students, with chronic absenteeism, are missing school, they cannot receive the prepared instruction. The concern is students, who are chronically absent from instruction, will have lower scores on standardized tests. This will ultimately affect the MSIP report for the school district. Therefore, for this study, the correlation between attendance and student achievement on a standardized test for Missouri will be tested.

*Practice under Investigation*

The practices under investigation is consistent attendance creates higher student scores on standardized tests.
School Policy to be Informed by Study

The school district’s attendance policy states that if attendance of a middle or high school student exceeds seven days, the cases will be sent to the Prosecuting Attorney for consideration of a class C misdemeanor. Also, the Missouri Compulsory Attendance Law, Section 167.031, states, children, ages seven or above, must be enrolled in, as well as, attend regularly in an educational system for the full term (Missouri Department of Elementary and Secondary education, para. 1).

Conceptual Underpinning

Consistent attendance is very important to education. The best place for a child to be able to learn and grow is at school. If a student is not at school, the learner will not be able to get the instruction needed to have a higher understanding. Therefore, the theory would be, students, who have a higher attendance, will have a better understanding of the concepts being instructed at school.

As a student continues to be absent from school, the student will continue to fall behind in school. Students, with chronic absenteeism, will have a lower reading level and will not be able to perform at grade level. This theory is supported in the article, A Focus on Attendance is Key to Success, by Robert Balfanz and Hedy Nai-Lin Chang. Balfanz and Chang stated students with chronic absenteeism “have shown that these students are more likely to fall short of attaining reading proficiency” (Balfanz & Chang, 2013, para. 7). As these students continue to be absent from the classroom, students will have a difficult time performing well on grade level assessments.
Lastly, if the school district has a stronger and more disciplined policy on attendance, students will be at school. Also, there should be stronger parent communications in schools about the importance of attendance. Hence, students will be at school and their achievements in the classroom and on standardized tests. This theory is backed by a study of a school in the Minnetonka School Districts. The school district changed their attendance policy to involve more parent contacts, and student discipline after only one unexcused absence. The result was an improvement on student achievements as well as behavior within the classroom due to an increase in attendance (Reeves, 2008).

Statement of the Problem

If attendance does affect student achievement in a positive manner, then educators will need to stress the importance of attendance to reach a change.

Purpose of the Study

The purpose of this study is to find out if there is a correlation between student attendance and student achievement on standardized tests.

Research Question

RQ #1: Is there a correlation between student attendance and student achievement on standardized tests?

Null Hypothesis

There is no correlation between student attendance and student achievement on standardized tests.
**Anticipated Benefits of the Study**

If there is a correlation between student attendance and student achievement, there should be focus on student attendance in schools.

**Definition of Term**

MAP: “The Missouri Assessment Program assesses students’ progress toward mastery of the Show-Me Standards which are the educational standards in Missouri” (Missouri Department of Elementary and Secondary Education, para. 1)

Chronic Absenteeism: A student misses more than ten percent of school for the school year.

Standardized Tests: Test designed to have consistent questions, testing procedures, and scoring.

MSIP: Missouri School Improvement Program designed to keep schools accountable and accredits schools in the state of Missouri.

APR: Annual Performance Report indicated the effectiveness of a school based on the Missouri education standards.

ACT: An assessment for college entrance in which the students are tested in the areas of English, mathematics, reading and science.

SAT: An assessment for college entrance in which the students are tested in the areas of English, mathematics, and reading.
COMPASS: A standardized test to assess a student’s strength and weakness.

ASVAP: Armed Services Vocational Aptitude Battery used to predict occupational success of the students in the military.

LEP: Limited English Proficient- A person who is not able to effectively communicate in English because English is not their primary language.

ELL: English Language Learners- A person, who primary language is not English, may have difficulty speaking and understanding English fluently.

Missouri Learning Standards: The Missouri Department of Elementary and Secondary Education Grade-level expectations.

Summary

A study will be conducted to analyze if there is a direct relationship between a student’s attendance and achievement on standardized tests. If the correlation test shows a results of a significant association between these two factors, then the school will need to meet with parents and students to stress the importance of attendance and the direct link to a student’s success in education. Also, schools will be able to better predict the outcome of a student’s test score based on attendance.
Review of Literature

In education, the achievement gap between groups has been a concern for several decades. According to the National Center for Education Statistics, “achievement gaps occur when one group of students outperforms another group and the difference in average scores for the two groups is statistically significant” (“National Center for Education,” 2015, para. 1). The gap focuses on standardized testing, grades, dropout rates, and other achievement that can be measured by data. The achievement gap is often used to describe the performance gaps in the various data in groups such as low income students, minorities, gender, and English language learners (“Editorial Projects,” 2011). This review of literature will discuss how to decrease the achievement gap though lowering absenteeism in schools.

Although there are several factors to the achievement gap, there is a direct link to chronic absenteeism. Robert Balfanz and Vaughn Brynes (2012) examines how attendance has a direct impact to student achievement in schools. Chronic absenteeism can affect performance on standardized testing as well as graduation rates. Both factors are analyzed in the achievement gap. Balfanz and Brynes (2012) stated, “Educators and policymakers cannot truly understand achievement gaps or efforts to close them without considering chronic absenteeism” (p. 3). Therefore, to close the gap between groups, educators must focus on improving student attendance.

Chronic absenteeism is defined as a student missing ten percent of the school year. This includes excused and unexcused absences (Balfanz & Bryne, 2012, p. 3). In the article, Chronic Absenteeism, Poverty and How Community Schools Can Help, Martin J. Blank (2015) examines chronic absenteeism and how it can affect the students as well as the school. Blank (2015) argued that being regularly absent from school can have negative impacts on the student’s
academic achievements. He also stated the consequences, student achievement in education, of being absent are clear.

The causes of chronically absent students, however, vary. Using the data from 2007-2010 American Community Survey, the New York City Administration for Children's Services, publicly available data from the Department for Homeless Service, New York City Housing Authority, and data from the city and state education departments on students, teachers and school climate, Blank (2015) was able to examine eighteen variables that are predictors to common core scores and chronic absenteeism. These variables include school factors as well as neighborhood factors. These factors include reduced or free lunch, temporary housing, welfare benefits, special education, minority groups, principal turnover, teacher turnover, student turnover, student suspension, safety scores, engagement scores, poverty rate, Administration for Children’s services involvement, adult education levels, professional employment, male employment, public housing, and homeless shelters (Blank, 2015, para.3). Several of these factors are the same subgroups linked to the achievement gap.

Due to these factors, schools need to find a way to end chronic absenteeism in schools. Blank (2015) explains that schools and communities must work together to fight chronic absenteeism. Blank (2015) states, “a school-family-community partnership that is able to identify chronically absent students, coordinate strategies to get them coming to school more, and track improvement over time is building the essential foundation needed to achieve more far-reaching goals” (para. 8).

In Missouri, the Compulsory Attendance Law clearly depicts the importance of regular attendance. According to the Missouri Department of Elementary and Secondary Education
(DESE), the Compulsory Attendance Law was created in 1905 and has been revised throughout the years. In section 167.031, the statute states,

“that any parent, guardian or other person having custody or control of a child between the ages of seven (7) and the compulsory attendance age for the district, must ensure that the child is enrolled in and regularly attends public, private, parochial, home school or a combination of schools for the full term of the school year” (Missouri Department of Elementary and Secondary Education, para. 1).

With this statute, students must regularly attend school. If a parent or guardian of the child does not comply with this law, the school district has the right to report the absenteeism to the Department of Social Service, Children’s division, or the prosecuting officer. Lastly, according to DESE, “a violation of the compulsory attendance law is a class C misdemeanor.”

Missouri has also implemented a state accountability system called the Missouri State Improvement System (MSIP) V. The implementation begun in a series of steps starting in 1990. In 2012, the state began the last step MSIP V. Each year, school districts across the state receive an annual performance report (APR). The APR includes the following performance standards: Missouri Assessment Program (MAP) test, ACT, SAT, COMPASS, and ASVAB scores, career education placement, college placement, graduation rates, attendance rates, and subgroup achievements. Using these standards, DESE is able to determine the support and intervention needed to create high performing schools across the state. Many of these same performance indicators are used to analyze the achievement gap as well. Therefore, by using this improvement system, DESE is progressing to close the achievement gap in the schools (Department of Elementary and Secondary Education, 2015).
In conclusion, in order to close the achievement gap in education, school districts need to focus chronic absenteeism. Students, who miss school ten percent of the school year, fall behind their peers in school on standardized testing, academic standards, and graduation rates. The causes of these students, who are chronically absent, vary, however, they are often connected to the same subgroups of the achievement gap. Finally, Missouri has taken steps to improve attendance and student performance with the Compulsory Attendance Law and MSIP V.
Research Methods

Research Design

For this study, the research design will be to collect data for each student’s average attendance from 2013 to 2014. Data will also be collected for each student based on their scores on the MAP test in the areas of Communication Arts and Mathematics. The independent variable is student attendance. While the dependent variable is the student’s scores on the MAP tests. Then, using the correlation test, data will be used to see if there is a significant relationship between attendance and their scores.

Study Group Description

This study will consist of ninety-two students from a seventh grade class in an urban middle school. Demographically, this public school services four hundred and sixty-five students in the seventh and eighth grade levels. There are 226 female students and 239 male students. The student to classroom teacher ratio is 17:1. The ethnicity of these students include 76.8 percent White, 13.8 percent Black, 7.10 percent Hispanic, 0.60 percent Indian, and 0.40 percent Asian. Of these students, 67.5 percent qualify for free and reduced lunch. The school has twenty-seven students with a learning disability, nineteen students with a mental impairment and twenty-eight students with other health impairment. For LEP/ELL participation, the school has nineteen students. For 2013, the average attendance rate for at this school was 94.0 percent.

Data Collection and Instrumentation

Data will be collected by the percentage of attendance for ninety-two students in comparison to each student’s MAP test scores in the areas of Communication Arts and Mathematics from the 2013-2014 academic year.
Statistical Analysis Method

A correlation test will be used to review the findings in the relationship between a student’s attendance and scores on the standardized test, MAP in the areas of Communication Arts and Mathematics. The independent variable for the test is the student’s attendance and the dependent variable is the scores from the MAP test. The alpha level is set to .25 to test the null hypothesis: there is no correlation between student attendance and student achievement on standardized tests.
Findings

A correlation analysis was conducted to evaluate the direct relationship between student’s attendance and student’s scores on the MAP standardized test in the areas of Communication Arts and Mathematics for the academic year of 2013-2014. The following information and tables will display the findings based on the student’s data.

Figure 1

<table>
<thead>
<tr>
<th>Correlation analysis on Student Attendance and Student Achievement on Communication Arts MAP</th>
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<tbody>
<tr>
<td>N</td>
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<tr>
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<tr>
<td>Attendance</td>
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<tr>
<td>Map ELA</td>
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</tbody>
</table>

Note significance = or < .25

The correlation analysis collected information of ninety-two students in an urban school in Missouri. The correlation was to test the null hypothesis between attendance percentages and MAP Communication Arts scores. The null hypothesis was: there is no correlation between student attendance and student achievement on standardized tests. First, the mean, or average, of attendance percentages was 94.80% from the collected data. The mean, or average, for MAP Communication Arts scores was 662.33. Also, for MAP Communication Art scores, the data revealed the r, or correlation coefficient, was 0.06, the R², or practicality, showed 0.36% and the p-value was 0.58. The correlation coefficient, 0.06, shows that the strength of the relationship between the two variables is weak and negligible. Due to the number being positive, there is a direct relationship between the two variables. Meaning, as student attendance increases, the student achievement will also increase. The practicality of the relationship between the two variables is depicted based on R² of 0.36%. Based on this, the relationship is not practical. To have been practical, the number would have needed to be above 10%, which this data shows the
R² was not. The p-value was 0.58, which is more than the selected alpha level of 0.25. As a result, there is not a significant relationship between attendance percentage and the MAP Communication Arts score. Due to the p-value being lower than the alpha level, the null hypothesis would not be rejected. There is a not significant relationship between the students’ attendance and MAP Communication Arts scores.
The correlation analysis collected information of ninety-two students in an urban school in Missouri. The correlation was to test the null hypothesis between attendance percentages and MAP Mathematics scores. The null hypothesis was: there is no correlation between student attendance and student achievement on standardized tests. First, the mean, or average, of attendance percentages was 94.80% from the collected data. The mean, or average, for MAP Mathematics scores was 675.55. Also, for MAP mathematics scores, the data revealed the r, or correlation coefficient, was 0.16, the R², or practicality showed 2.56% and the p-value was 0.12. The correlation coefficient, 0.16, shows that the strength of the relationship between the two variables is weak and negligible. Due to the number being positive, there is a direct relationship between the two variables. Meaning, as a student’s attendance increases, the MAP Mathematics scores will also increase. The practicality of the relationship between the two variables is depicted based on R² of 2.56%. Based on this, the relationship is not practical. To have been practical, the number would have needed to be above 10%, which this data shows the R² was not. The p-value was 0.12 which is less than the selected alpha level of 0.25. As a result, there is a significant relationship between attendance percentage and the MAP Mathematics score. Due to the p-value being lower than the alpha level, the null hypothesis would be rejected. There is a significant relationship between the student’s attendance and MAP Mathematics scores.
Conclusions and Recommendations

The conclusion of this study depicts that attendance does have a significant relationship on the scores of the MAP Mathematics test. The null hypothesis for this study stated there is no correlation between student attendance and student achievement on standardized tests. According to the correlation analysis, the p-value was 0.12, which was less than the alpha level of 0.25. Therefore, the null hypothesis was rejected. Also, for the student achievement in the area of Mathematics, the r, correlation coefficient, was 0.16, which depicts a weak, positive relationship to the student’s attendance. Meaning that as a student’s attendance improves, so will the student’s score on the MAP Mathematics standardized test. However, attendance does not have a significant relationship on the scores of the MAP Communication Arts test. According to the correlation analysis in figure 1, the p-value was 0.58, which is more than the alpha level of 0.25. The null hypothesis was not rejected. However, the data did depict that there was a weak positive relationship between student attendance and student achievement on the MAP Communication Arts test. Therefore, during this study, it was confirmed that a student’s attendance shows a significant impact on a student’s achievement on the MAP Mathematics test.

The conceptual underpinning of this research study was confirmed with this data. Consistent attendance is important to a student’s achievement in education. The theory stated students, who have a higher attendance, will have a better understanding of the concepts being instructed at school. Therefore, to be able to understand the mathematical concepts, students have to be at school. Also, this research study could be used to have a significant impact on the student’s achievement on a standardized test in the area of Mathematics.

After concluding this study, there is additional research that could be conducted. In 2015, a new format of testing was created for the MAP testing. These tests were created to
evaluate the new rigorous Missouri Learning Standards and were implemented using computers. This could have a significant impact on the scores of students, in addition to attendance. The 2014 test, which was used for this study, was implemented using paper and pencil. Also, a study could be conducted based on gender attendance and student achievement. This study used ninety-two students as a whole for the seventh grade. It did not include the factor of gender. Both of these studies could enhance the current study.

With the outcome of this study, it could be concluded that a student’s attendance does play a significant role in a student’s achievement in Mathematics. Therefore, a district would want to implement a district plan to improve student’s attendance, especially, those who are chronically absent. A district could hold a parent meeting with the focus on the importance of attendance and student success. Martin Blank (2015) states, “a school-family-community partnership that is able to identify chronically absent students, coordinate strategies to get them coming to school more, and track improvement over time is building the essential foundation needed to achieve more far-reaching goals.” Therefore, districts needed to create that foundation and communication with parents of the importance of student attendance. This will, in turn, improve student achievement on MAP testing in the area of Mathematics.
References


Missouri Department of Elementary and Secondary Education. (n.d.).

