THE IMPORTANCE OF ATTENDING SCHOOL:
A QUANTITATIVE ANALYSIS OF THE RELATIONSHIP BETWEEN STUDENT
ATTENDANCE AND ACADEMIC ACHIEVEMENT

by

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ABSTRACT

This research study examined the relationship between student attendance and academic achievement in three suburban high schools located in Western Pennsylvania over the course of three academic school years.  The diverse sample, selected to represent a broad cross-section of suburban schools, included districts that varied on socioeconomic indicators, enrollment figures, and student demographics.  Using a quantitative approach, the purpose of this study was to investigate if the number of school days missed within a school year affects student academic performance on state level proficiency exams and earned quality point averages.  The results of the study found that there were significant relationships between student attendance and scores on state level proficiency exam performance; that there were significant relationships between student attendance and earned quality point averages; and that the definition of "chronically absent" could benefit from possible revision.  The findings from this research study add to the discourse about the importance of students attending school.  Implications for leadership, practice, and policy are discussed; and suggestions for future research are provided.

*Keywords:*  Absence, academic achievement, assessment, attendance, chronically absent, grade point average, Keystone Exam, quality point average, standardized testing

DEDICATION

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**Chapter 1: Introduction**

During the 2015-2016 school year, 293,035 school aged children in the state of Pennsylvania were deemed "chronically absent" from school.  This number represents 17% of all students enrolled in public schools in the state of Pennsylvania, slightly higher than the nationwide statistic of 16% of all students in the United States who were deemed chronically absent during the same academic year (Chang, Bauer, & Byrnes, 2018).  This means they missed 10% of school days or more within an academic calendar year (Jordan & Miller, 2017), which is typically 18 school days (Sparks, 2010).  Education is a cornerstone to ensuring a quality livelihood to individuals as well as an entire community (Dekalb, 1999).  However, for students to benefit from the services provided by schools, they need to attend on a regular basis.  "The success of the school in carrying out its primary charge of educating and socializing students is contingent on students attending school regularly" (Smith, 1998).

Students attending schools regularly has been a concern for hundreds of years.  The Massachusetts Bay Colony instituted the first compulsory attendance law in America in 1642. Since then, every state within the United States has established laws and systems governing mandatory student attendance (Ensign, 1969).  The spirit of enacting compulsory student attendance laws embraces the ideal that education is paramount for individual success and the betterment of society (Mitchell, 1993), and is still driving the creation of educational policy in the 21st century.  President Barack Obama signed the Every Student Succeeds Act on December 10, 2015, which required every state to create a reportable accountability system to monitor school success (Dennis, 2017).  This system was required to be implemented by the 2017-2018 school year and include five required indicators:  1) proficiency on assessments; 2) growth in proficiency in grades below high school; 3) high school graduations rates; 4) progress of English

language learners toward proficiency; and 5) a non-academic indicator/indicator of school

quality or student success. The fifth required indicator granted states latitude when determining

what comprised a non-academic indicator/indicator of school quality or student success

(Sunderman, 2017). Of the 50 states, 37 elected to use the rate of chronic absenteeism among

students as the fifth reportable indicator that is non-academic but demonstrates school quality or

student success (Jordan & Miller, 2017). Balfanze and Byrnes (2012) contend using chronic

absenteeism is a more accurate indicator of student attendance than a school's average daily

attendance rate. If an average daily attendance rate is utilized to measure attendance at school,

up to 25% of students can be chronically absent, but the school can still produce an average daily

attendance rate of higher than 90% (Balfanze & Byrnes, 2012). Balfanze and Byrnes (2012)

demonstrate that utilizing a school's average attendance rate rather than the number of students

chronically absent misrepresents attendance statistics to look better than they are in reality.

Researchers, policy makers, teachers, and parents have assumed a positive relationship

between student attendance and academic achievement (Gottfried, 2010). However, among the

sweeping body of empirical research studying academic achievement, few studies refined the

focus to the relationship between individual student attendance and earned quality point average.

Rothman (2001) stated that regular school attendance helps students attain levels of higher

academic success, but too many different indicators have been used as a measure of academic

success to understand exactly how (Gottfried, 2010). Considering the position of Allensworth

and Easton (2007) and Heberling and Shaffer (1995) agreeing that earned quality point average

is the best indicator of academic success, more research is needed examining its relationship to

student attendance

Course failures and dropout rates as studied by Gottfried (2009) and Neild and Balfanze (2006) are the most commonly used indicators to measure academic success in relation to student attendance. Researchers such as Gottfried (2009) and Roby (2003) studied attendance patterns to determine if there was a substantial relationship to standardized test scores. Even though the research showed a direct relationship between the variables, the focus soon returned to dropout rates as student attendance was a better predictor of future dropouts across years of study than test performance scores (Gottfried, 2009; Neild & Balfanze, 2006). Historically, the majority of research related to the relationship between student attendance and academic achievement has focused on course failures and dropout rates due to their interconnectedness. Students with poor attendance fail more courses, and students who fail the most courses are more likely to become dropouts (Naillon, 2017).

Despite the more popular indicators such as proficiency exams, course failures, and dropout rates being the focal point when researching academic success and student attendance patterns, the study of earned quality point averages could be revealing. Allensworth and Easton (2007) recognize that course failures are part of the calculation method used when determining earned quality point averages, and suggest it is the best indicator if a student will graduate high school. Heberling and Shaffer (1995) also found that earned quality point average is useful, but as the best indicator to describe academic achievement, not as the best indicator for graduation. Considering there are researchers with this strong of stance, it is surprising there has been minimal research related to earned quality point average as compared to other indicators.

**Statement of the Problem**

Regular student attendance at school has a direct relationship with academic achievement and the learning of habits and behaviors that carry over to post-education settings (Demir &

Karabeyoglu, 2016), (Neild & Balfanze, 2006), (Naillon, 2017).  Many studies related to student

attendance, such as the studies conducted by Gottfried (2009) and Neild and Balfanze (2006),

focus on its relationship to course failures and eventual dropout.  Other studies, as conducted by

Roby (2003), Allensworth and Easton (2007), and Steward et. al., (2008), tried to connect

student attendance to proficiency exam scores or earned quality point averages, but they were

limited as they either made an eventual connection to dropout prediction, or only provided

limited data regarding earned quality point averages.  Their studies examining earned quality

point averages only focused on students with either good or poor attendance at school, not both.

There is no available study examining the relationship between student attendance and academic

achievement measured by proficiency exam performance and earned quality point average as the

performance indicators.  Further, no known study has assessed the appropriateness of 18 days

being utilized as the benchmark number to be deemed chronically absent from school.

**Purpose of the Study**

The purpose of this study is to investigate the relationship between student attendance at

school and academic achievement.  Data was collected from three different high schools in

Western Pennsylvania.  Indicators of academic achievement are measured by student

performance on state level proficiency exams and earned quality point averages.

**Significance of the Study**

Regardless of the indicators used to measure academic achievement, the impact of poor

school attendance has detrimental effects beyond school-aged years.  Poor school attendance has

been linked to societal problems such as earning lower salaries, the receipt of welfare benefits,

and living lesser quality of lives (Demir & Karabeyoglu, 2016; Murcia, 2015; U.S. Department

of Education, 1996).   Students with the poorest attendance rates struggle the most academically.

Those with the lowest academic achievement in turn are less likely to graduate high school. Therefore, there is a substantial connection between attendance and academic achievement (U.S. Department of Justice, 2001). The problem of high school dropouts and poor student attendance will never entirely disappear (Dekalb, 1999), but further research could be useful to minimize its damaging effects to not only individuals, but also society. As such, the overall findings of this study can help administrators, teachers, parents, and students understand the importance of school attendance. Understanding the magnitude to which chronic absenteeism hinders academic achievement will better inform policy makers, researchers, and educators to guide school policies and promote the development of workable processes to minimize the detrimental effects of poor student attendance. Administrators and teachers will possibly be afforded more time to devote to instructional programming rather than the obstacles engendered by attendance issues. Community awareness of the importance of student attendance could motivate parents and students to renew their commitment to being at school.

**Theoretical Framework**

The basis of this research study is grounded by the human capital theory. This framework examines the relationship between education and its social returns, at both the individual and societal levels (Netcoh, 2016). The base premise of the human capital theory is that a student is not only a consumer, but they eventually become a producer (Devadoss & Foltz, 1996). Once a student's formal education is complete, they enter society and either contributes to societal growth, or hinder it. Olaniyan and Okemakinde (2008) describe education as a capital good and is necessary to develop students as the human resource necessary for societal transformation. Figure 1 is a visual representation of human capital theory.
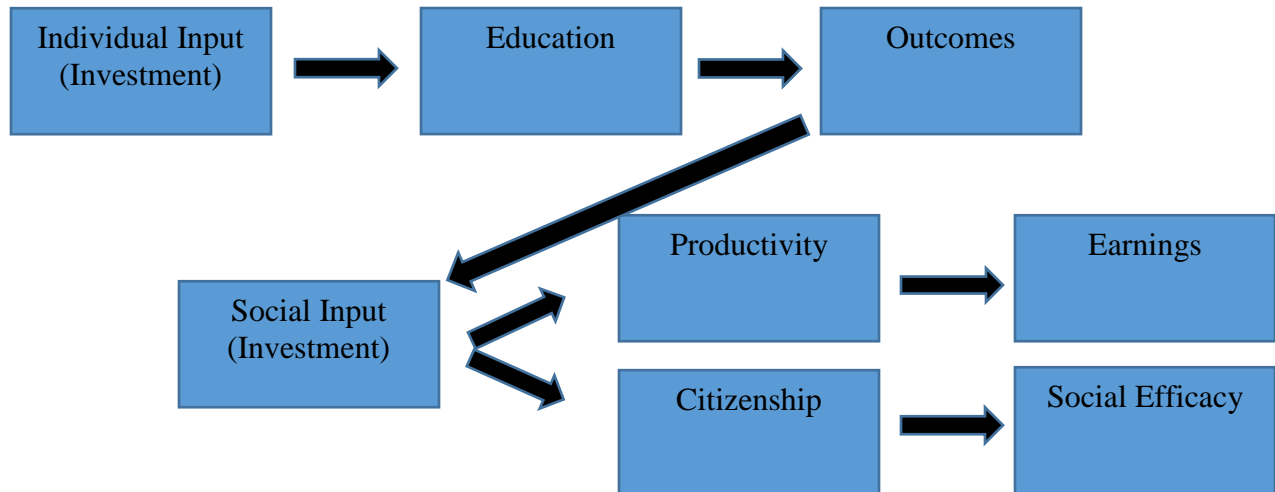
*Figure 1. Human Capital Theory Model by Swanson & Holton, (2001) p. 110.*

Almendarez (2011) describes education as an engine of growth and paramount to development in every society. Human capital theory concludes that formal education is highly instrumental to improve the productive capacity of an entire population (Devadoss & Foltz, 1996). The theory stresses education and training are necessary to participate in the global economy. Studies have shown educated individuals are important to economic growth and development, causing the concept of human capital to become common discourse when examining societal growth (Almendarez, 2011).

Smith (1998) argues that students need to attend school on a regular basis to be successfully educated. Therefore, the importance of student attendance is directly connected to the human capital theory (Devadoss & Foltz, 1996), which emphasizes education as the most critical element of society's success (Netcoh, 2016). Due to the significant role of education to the success of any nation, it is necessary to apply the theory of human capital to these systems

(Devadoss & Foltz, 1996). Research present in the literature review of this study provides information and statistics that reinforce the human capital framework.

**Research Questions**

This study is guided by the following research questions:

1. What is the relationship between student attendance and academic achievement, as measured by state mandated proficiency exams?

2. What is the relationship between student attendance and academic achievement, as measured by earned quality point average?

3. What is the relationship between student attendance and academic achievement, as measured by earned quality point average, when controlling for state mandated proficiency exam score?

4. Are there significant differences in earned quality point averages based upon the number of student days absent?

5. Are there significant differences in state mandated proficiency exams based upon the number of student days absent?

**Limitations/Delimitations**

The researcher must be cognizant of the limitations that exist within this research study. Internal validity must be considered as the limitations could alter the outcome of results. Possible differences in the grading procedures of teachers provides a limitation that could create the need for scrutinization when comparing cumulative earned quality point averages as this may cause variance in the results of this study. Even though earning letter grades is an accepted measure of performance to assess student accomplishments academically, there is always the presence of inherent subjectivity and possible personal bias. Lastly, the researcher is employed

as an administrator within one of the three school districts offering a sample population to be studied.  However, the researcher does not work in the school building being sampled and has no authority or influence on student earned quality point averages or performance scores on state mandated assessments.

Delimitations within this study include student choice of scheduled classes and academic level (i.e. advanced placement, honors, remedial) are not differentiated when examining earned quality point averages.  Of the three academic subjects the students participate on state mandated proficiency exams, only one of the subject proficiency assessments is utilized.  Students are required to participate in Algebra, Biology, and Literature course ending exams, but only Literature is consistently offered at the high school level.  The Algebra and Biology exams are often administered at the middle school level which is outside of the population to be sampled. The general population of the student body serves as the studied population and is not disaggregated by subgroups.  While subgroup information could prove beneficial for other studies, it is not considered at the time of determining if student attendance has an effect on academic achievement.

**Definition of Terms**

**Absence:**  A temporary absence from school that meets the criteria set forth by the Pennsylvania Department of Education and Pennsylvania School Code (2006).

**Academic Achievement:**  Successful outcomes on state mandated assessments as determined by a score that the Pennsylvania Department of Education considers a passing result (2016). Or, earned quality point averages that meet graduation requirements.

**Attendance:**  Being present in a school setting.

**Chronically Absent**:  Missing 10% or more of school.  Approximately 18 days in a normal 180 day school year (Sparks, 2010).

**Data Recognition Corporation (DRC):**  A private service firm contracted by the Pennsylvania Department of Education to create standardized assessments (Dinniman, 2016).

**Excused Absence:**  A temporary absence from school that meets the criteria set forth by the Pennsylvania Department of Education and Pennsylvania School Code (2006).

**Keystone Exam:**  A standardized end of course exam administered in public schools in the state of Pennsylvania to determine subject proficiency.  Algebra, Biology, and Literature comprise the three state mandated exams required for graduation (Pennsylvania Department of Education, 2016).

**Performance Level Descriptors:**  Words that describe the knowledge and skills expected of students at different performance levels for each of the Keystone end of course exams.  Students can score advanced, proficient, basic, or below basic.  Table 1 illustrates Keystone Exam scale score ranges for each of the course ending exams (Pennsylvania Department of Education, 2016).

*Table 1. Keystone Exam Scale Score Ranges*

| Content Area | BELOW BASIC | BASIC | PROFICIENT | ADVANCED |
|---|---|---|---|---|
| Algebra I | 1200–1438 | 1439–1499 | 1500–1545 | 1546–1800 |
| Biology | 1200–1459 | 1460–1499 | 1500–1548 | 1549–1800 |
| Literature | 1200– 1443 | 1444–1499 | 1500–1583 | 1584–1800 |

*Note*. Reprinted from Pennsylvania Department of Education (2016). Retrieved from http://www.education.pa.gov/

**Quality Point Average:** The average obtained by dividing the total number of grade points earned by the total number of credits attempted (Quality Point Average, n.d.).

**School Refusal:** Student non-attendance at school due to school refusal (Baker and Bishop, 2016).

**Unexcused Absence:** A temporary absence from school that does not meet the criteria set forth by the Pennsylvania Department of Education and Pennsylvania School Code (2006).

## Organization

Chapter 1 of this study is a presentation of the problem to be studied and research questions. Chapter 2 consists of the literature review, which is an examination of peer-reviewed relevant studies to analyze relationships between student attendance and achievement at school. Chapter 3 is a delineation of the study's design, methodology, and researched information. Chapter 4 is a presentation of the results of the study and an analysis of the gathered data. Chapter 5 is a discussion of the findings and implications of the study, and suggestions for possible future research direction.

## Summary

For students to benefit from formal schooling, they must attend regularly (Smith, 1998). Legislators and policymakers support this stance evidenced by mandatory attendance legislation enacted both recently and from hundreds of years ago. This conceptual idea is that a productive society is dependent upon educated people, as demonstrated within human capital theory. This study examines if there is a connection between student attendance and academic performance measured by state mandated proficiency exams and earn quality point average. Pertinent literature analyzing the relationship between student attendance and achievement at school is described in Chapter 2.

## Chapter 2: Literature Review

Students who are chronically absent do not perform well academically (Gottfried, 2009; Naillon, 2017; Neild & Balfanze, 2006; Roby, 2003).  Policymakers have recognized the importance of attendance evident by its inclusion in national and state instruments designed to measure school success (Roby, 2003).  Indicators that measure academic performance can range from test scores, earned quality point average, or course failures which have been found to lead to a higher rate of school dropout (Gottfried, 2009; Neild & Balfanze, 2006).  In this study, the relationship between attendance and student outcomes will be explored.

In order to investigate the relationship of student attendance and academic achievement, it is important to first understand the factors that contribute to attendance issues as well as the effect that attendance has on outcomes beyond a student's academic performance.  Family, individual, school, and community specific factors can influence student attendance at school, providing direction for lifelong habits that are hurtful to the individual and society (Demir & Karabeyoglu, 2016; Jacob & Lovett, 2017).  As such, the following themes will be discussed in this literature review:  1) The relationship between attendance and academic success; 2) how poor student attendance can negatively impact other individuals; 3) the impact of poor student attendance on society; 4) and factors that contribute to poor student attendance.

### Poor Student Attendance Negatively Affects Academic Success

Roby (2003) conducted a longitudinal study to examine if there is a direct relationship between student attendance and academic achievement across multiple grade levels.  He analyzed attendance statistics provided by the Ohio Department of Education and found a significant statistical relationship exists between student performance and attendance in the fourth, sixth, ninth, and twelfth grades.  His findings indicated that average daily student

attendance was a predictor of how well students would perform on the state mandated Ohio

Proficiency Test (Roby, 2003).

Gottfried (2009) conducted a similar longitudinal study that reinforced Roby's findings.

He analyzed student attendance and their performance in math scores in the School District of

Philadelphia. A 20% difference in the probability of successful math performance existed

between a student who had a 60% attendance rate and a student who attended school every day.

Like Gottfried, (2009), Neild and Balfanze (2006) studied students in the School District of

Philadelphia and their attendance patterns. Not only did their research support Gottfried's (2009)

findings, they recognized other variables affected by poor student attendance. Neild and

Balfanze (2006) identified excessive absenteeism as the strongest predictor of course failure. In

addition, they discovered 78% of students with attendance rates below 80% eventually dropout

of high school (Neild & Balfanze, 2006). Attendance at school was the strongest covariate of

both studies (Gottfried, 2009; Neild & Balfanze, 2006).

Gottfried (2009) conducted another study and examined attendance in the Chicago Public

School system. His evaluation concluded that early school attendance patterns predicted future

academic performance by identifying student dropout risks. The data showed it was possible to

identify high school dropouts as early as first grade by examining their attendance patterns.

"Students who dropped out were twice as absent in fifth grade and three times as absent in ninth

grade" (Gottfried, 2009). The high percentage of attendance patterns relating to dropout

probability was astonishing. "90% of high school dropouts in the Chicago Public School system

could be identified by their absence patterns in the second, third, and fourth grades" (Gottfried,

2009).

The research of Roby (2003), Gottfried (2009), and Neild and Balfanze (2006) all focused on negative outcomes related to poor student attendance. They cited lower attendance rates are connected to poor test scores as shown in three different states from their studies. Gottfried (2009) and Neild and Balfanze (2006) extended their research to show how increased absences not only affected test scores, but was a better predictive indicator of possible dropout.

Student attendance was not connected to earned quality point average by any of the of the previously mentioned researchers as a variable that could be affected by this indicator. Instead, their discussion of academic achievement in relation to student absences focused on drop-outs, performance on standardized tests, or failing a course. Naillon (2017) agrees that attendance rates effectively predict the probability of course failure. She asserts that attendance rates supersede earned quality point averages as predictor of whether a student would fail a course. Students could possess the ability to perform very highly academically, yet would likely still fail courses if too many classes are missed due to missed instruction and not earning credit for missed assignments. This creates a cycle of lower earned quality point averages among students with poor attendance, even if they have the academic ability to perform well (Naillon 2017).

It is surprising that a scant amount of research exists studying the relationship of individually earned quality point averages to student attendance rates considering Heberling and Shaffer (1995) describe earned quality point average as the best indicator of academic achievement. Allensworth and Easton (2007) believe earned quality point average is the best indicator if a student will graduate high school. They recognize earned quality point averages are related to course failures, because failures are part of the calculation method used when determining a student's earned quality point average. Steward et. al., (2008) further demonstrate the need for more research directly comparing earned quality point averages to attendance

patterns. They state it is impossible to distinguish whether students who are better academically prepared based on earned quality point averages have fewer absences, or if students who have fewer absences tend to be more academically competent as indicated by higher earned quality point averages due to greater exposure to course content because they are present more often.

When examining the scarcely available studies that do compare attendance rates to earned quality point averages, it is quite apparent that better attendance at school is highly predictive of students earning higher grades, not just avoiding failing classes. Allensworth, Gwynne, Moore, and De la Torre (2014) studied earned quality point averages of students in the Chicago Public Schools system. The most common identified indicator associated with low quality point averages was low attendance. Just as attendance is the strongest predictor of course failures, attendance is the strongest predictor of overall grades, and of grades higher than failures (Allerton & Easton, 2007). Heberling and Shaffer (1995) gathered data to test the hypothesis that school attendance has significant effects on student earned quality point averages. As the rate of student absenteeism increased, grade point averages decreased (Heberling & Shaffer 1995).

Steward et. al., (2008) conducted a limited research study providing data that associates poor student attendance to low earned quality point averages. A population of 200 freshman was sampled. The population was absent an average of 32 school days and earned an average cumulative quality point average of 1.82 (on a scale of 4.0) (Steward et. al, 2008). These numbers demonstrate an association between poor attendance and a low-quality point average.

Data gathered by Allensworth and Easton (2007) is examined at the opposite side of the attendance spectrum compared to Steward's et. al., (2008) findings. They directly correlate higher earned quality point averages to better attendance at school, rather than poor attendance to

low quality point averages.  Of all students in Chicago public high schools, more than half of the students who missed less than five days of school per semester earned a quality point average of 3.0 (on a scale of 4.0) at the end of their freshman year.  Seventy-five percent of these students earned a 2.5 quality point average, and 90% of all students earned at least a 2.0 quality point average (Allensworth & Easton, 2007).  Good attendance alone does not produce high earned quality point averages (Strickland, 1998), but as Allensworth and Easton (2007) demonstrated, students who have good attendance also have average or higher grades.

Though Steward et. al., (2008) and Allensworth and Easton (2007) both show a correlation of attendance to earned quality point average as an indicator of academic achievement, both studies were limited in the data provided.  Steward et. al., (2008) only provided a population of students with poor attendance and the association of low earned quality point averages.  No comparison population with good attendance habits was provided to show their academic achievement with earned quality point average being the indicator.

Steward et. al., (2008) provided data related to a population with poor attendance patterns, whereas Allensworth and Easton (2007) provided data from students with good attendance patterns.  No comparison population with poor attendance habits was provided to show a difference in their academic achievement with earned quality point average being the indicator.  In addition, Allensworth and Easton (2007) did not include data of students that dropped out over the course of the year they conducted their research.  The research of Gottfried (2009) and Neild and Balfanze (2006) was previously examined demonstrating the low academic achievement of students who eventually dropout of school.  Allensworth and Easton (2007) not including dropouts from their studied population furthers the need for additional research comparing individual student attendance to earned quality point averages.

Despite the many indicators researchers utilize to measure academic success such as student dropout, standardized test scores, failed courses, or earned quality point averages, Mahoney (2015) provides an explanation to help understand why they are connected to poor student attendance patterns.  He contends these outcomes are due to the hardships students experience by not attending school.  When a student has excessive absences from school, they miss crucial instructional time with teachers, making learning more difficult.  Even one day of missed classroom instruction increases the gap between what has been learned and what has not been learned.  As students continue to miss instructional time, the gap widens and makes learning more difficult for students who are unable to catch up with their classmates.  This academic struggle leads to student disengagement from their classmates and their school, perpetuating continued poor attendance (Mahoney, 2015)

Demir and Karabeyoglu (2016) reinforce Mahoney's (2015) statements that student absenteeism is costly in regard to academics.  Students lose interest and fail when they fall behind in their learning.  This continuation of poor attendance simply makes it hard for students to enjoy attending school.  However, Demir and Karabeyoglu (2016) state there is a sociological aspect caused by poor attendance as well.  Regularly absent students gain an increasing sense of estrangement from their peers, teachers, and their school.  Morrissey, Hutchison, and Winsler (2014) agree with Demir and Karabeyoglu (2016) that poor attendance affects students negatively both academically and socially.  Not only do students who miss class not benefit from direct teacher instruction, but they also miss peer interactions and other activities designed to scaffold learning, causing great harm to their success at school (Morrissey et. al., 2014).  Allensworth and Easton (2007) use the term "gradual disengagement" to define the cyclical process of missing more and more school, making it increasingly arduous to return.  Students

with poor attendance eventually feel alienated from classmates, teachers, and their school, causing them to continue this pattern of missing more days of school (Gottfried, 2010).

**Poor Student Attendance Negatively Affects Other Individuals**

The cost of poor attendance rates do not only affect the chronically absent, but also those around them within the school setting.  Other students lose instructional time with teachers when the teacher must use additional time to compensate for the absent upon their return (Mahoney, 2015).  Teachers must slow their pace of instruction to remediate students who are regularly absent (Gottfried, 2015).  This affects the teacher's ability to present lessons and curriculum in a sequential and organized fashion (Murcia, 2015), creating a poorly organized classroom atmosphere with little support for learning for all students (Allensworth & Easton, 2007).  There is also the fear that students with poor attendance rates can set a bad example or encourage absenteeism among classmates (Demir & Karabeyoglu, 2016).

Students with chronic absences have also been shown to exhibit greater frequencies of disruptive behavior (Gottfried, 2014).  The research of Allensworth and Easton (2007) discussed the gradual disengagement and eventual alienation the habitually absent begin to feel.  This lack of a sense of belonging compounded by academic frustrations caused by missed instructional time often manifests into behavioral disruptions that impact the learning of non-absent peers.  Teachers need to devote more time and resources to classroom management rather than instruction (Gottfried, 2014).  These effects demonstrate that habitually absent students reduce the educational outcomes of others in the class when actually present.

Families of students who are chronically absent also suffer.  Poor student attendance is more likely to occur amongst low-income families (Sparks, 2010).  More than 20% of kindergarten students living below the poverty line are deemed chronically absent, compared

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with 8% of their peers who live above the poverty line. For poverty-stricken families, poor school attendance may mean a continuation of the poverty and unemployment (Murcia, 2015).

**Poor Student Attendance Negatively Affects Society**

Poor school attendance leads to problems much larger than academic achievement (Dekalb, 1999; Demir & Karabeyoglu, 2016; Mahoney 2015; Murcia, 2015; Gottfried, 2009). Society suffers when school-age children are not in school for legitimate reasons such as personal illness (Murcia, 2015). If these students are not in school, where are they and what are they doing? Students absent from school for illegitimate reasons are more likely to resort to petty crimes and more likely to become addicted to drugs and engage in other destructive behavior (Murcia, 2015). Nonetheless, even if not performing illegal or age-inappropriate activities, students are not learning when not in school.

Gottfried (2009) and Neild and Balfanze (2006) demonstrated that students with poor attendance at school are more likely to dropout before finishing high school and experience other life hardships. Demir and Karabeyoglu (2016) state that regularly absentee students are more likely to have diminished social and life success. Students with poor school attendance struggle to learn life-long skills such as self-discipline and a sense of responsibility. This lack of life-long skills translates to struggles in work and discipline habits in their future work environments (Demir & Karabeyoglu, 2016).

Beyond being a predictor for academic failure, student absenteeism leads to many other risks. Gottfried (2009) explained that as absenteeism continues, these students are more likely to suffer from psychological problems, behavioral problems, and depression. Patterns are common for becoming involved in violence, teenage pregnancy, and the usage of illegal drugs, alcohol, and tobacco (Demir & Karabeyoglu, 2016). The U.S. Department of Education (1996)

reinforces these positions by linking poor school attendance to societal problems such as earning lower salaries, the receipt of welfare benefits, and living of lesser quality lives.

The studied researchers established that students with poor attendance are more likely to become dropouts. Dropouts are four times more likely to be unemployed, but if employed, the average dropout earns 33% less income than the average high school graduate (Patterson, Beltyukova, Berman, & Francis, 2007). Dropouts comprise a higher percentage of the nation's prison inmates than those who graduate (U.S. Department of Justice, 2002), and on average, die at an earlier age than high school graduates (U.S. Department of Education, 2007).

The Robert Wood Johnson Foundation (2016) conducted a study that reinforces the findings of the U.S. Department of Justice (2002) and U.S. Department of Education (2007) connecting better quality of lives for those with an education. Better educated people are more likely to have sound employment in healthier working conditions which provides quality health insurance and higher wages. Patterson et. al., (2007) established that dropouts earn 33% less income compared to the average high school graduate, but the Robert Wood Johnson Foundation (2016) compared a college graduate's lifetime income to someone who has only earned a high school diploma, and the difference is twice as large, exacerbating the difference in income between a college graduate and high school dropout.

Due to the difference in wages and available health insurance for college graduates compared to high school drop outs, the Robert Wood Johnson Foundation (2016) discovered other disparities in their qualities of life. High school graduates live nine more years on average compared to someone who has not completed high school. Adults with fewer years of education are more likely to die prematurely (Robert Wood Johnson Foundation, 2016), usually due to the unhealthy behaviors such as smoking or illegal drug usage as Demir and Karabeyoglu (2016)

found in their research.  Even infant mortality rates are higher among children born to women

who never graduated high school (Robert Wood Johnson Foundation, 2016).

**Various Factors Contribute to Poor Student Attendance**

The question then remains why excessive absenteeism still exists in society if it is

detrimental to the development of students?  It has been clearly established that attendance is

linked not only to poor academic achievement, but also other poor life consequences.  Chronic

absenteeism is an undesirable student behavior that can be created by various factors (Dalkiran,

2018).  Demir and Karabeyoglu (2016) link factors that contribute to the high rates of

absenteeism:  Family, individual, and school.  Jacob and Lovett (2017) expatiated on these

factors to include community-specific considerations.

Family factors affect a student's ability to attend school.  Parents and home conditions

have a significant effect on children's school attendance and on their promptness (Demir &

Karabeyoglu, 2016; Mahoney, 2015).  The economic and physical needs of parents may hinder

their child's attendance at school.  Often, a poor attendance record is indicative of a family's

socioeconomic level and the family needs the student to work (Demir & Karabeyoglu, 2016),

serve as the primary or secondary caregivers to parents, grandparents, and siblings, or assume

primary responsibilities associated with household management (Steward et. al., (2008).  These

parents rarely attend school meetings and are unlikely to create a disciplined environment for

their children at home (Demir & Karabeyoglu, 2016).

Morrissey et al., (2014) explains that students from low-income families are more likely

to suffer from physical, behavioral, and mental health problems.  These students also experience

poorer nutrition (Currie, 2005) and are often exposed to environmental hazards (Evans, 2004).

Parents of students in low-income households are often employed in positions with nonstandard

hours, such as nightshifts and weekends, requiring students to be more self-reliant to do homework and get to school on time.  The result of these family factors is increased school absences (Morrissey et. al., 2014).

A student's individual factor can also negatively affect attendance.  Morrissey et. al., (2014) discussed that individual students from low-income families may need to be more self-reliant to get to school on time, or may suffer from physical, behavioral, or mental health problems.  But as an individual, it is possible students feel academically inadequate, socially inadequate, or not safe at school, even if from a higher income household (Demir & Karabeyoglu, 2016).  Often these students do not possess the self-management or confidence needed to do well in a school setting (Mahoney, 2015).

Baker and Bishop (2016) state that some students simply do not want to attend school. School refusal is the behavior of refusing to attend school for no legitimate reason, causing the student to earn an unexcused absence for the school day (Baker & Bishop, 2016).  Reasons an individual student might not want to attend school could be as simple as wanting to oversleep or staying up too late the night before (Gottfried, 2009).  Poor attendance at school is frequently a by-product of a student's lack of motivation (Naillon, 2017).

School related factors also play a role in students' attitudes towards school attendance. Low quality teachers or poor student/teacher interactions may influence a student's motivation to attend school (Jacob & Lovett, 2017).  Policies that are tolerant of poor attendance, or the lack of firm implementation of existing policies intended to improve poor attendance patterns, conveys a poor message to students and parents about the importance of attending school on a regular basis (Demir & Karabeyoglu, 2016).  Mahoney (2015) suggests a school's procedures should be consistent and work towards producing meaningful results to reduce absenteeism.  He promotes

the display of visual charts exhibiting building wide attendance patterns to publicize and inform students of current attendance percentages.  The intention of these charts would serve as motivators for improving student achievement and increasing instructional time.

As Mahoney (2015) suggests, community specific schools should be proactive to encourage regular school attendance.  However, some communities have low compulsory education requirements reflecting a community's lack of value in formal schooling.  It is possible this community creates an availability of job opportunities that does not require formal schooling.  The value a community places on formal education is reflective in its school's attendance rates (Jacob & Lovett, 2017).

These factors that contribute to poor attendance are prevalent to students contingent on age level.  Family factors influence elementary aged learners more than middle and high school age students.  Elementary aged students are much more reliant upon their parents to ensure their attendance at school (Morrissey et. al., 2014).  High school age students are more independent and self-reliant, allowing individual factors to influence their attendance patterns more than other factors (Jacob & Lovett, 2017).

**Summary**

It is clear that student attendance is directly related to not only student achievement academically, but the overall success of any student's future (Gottfried, 2009; Neild & Balfanze, 2006).  Data has shown that habits and routines at the elementary level will affect students throughout their careers (Roby, 2003).  Individual students, families, and schools need to work collaboratively with the goal in mind that good school attendance will lead to a better society (Demir & Karabeyoglu, 2016).

Factors that contribute to poor student attendance were investigated and various achievement level connections when comparing students with poor attendance versus students with good school attendance were explored. Not only was academic achievement investigated in relation to school attendance, but the overall success of a student throughout their life after leaving an institution of formal education (Jacob & Lovett, 2016; Patterson et. all., 2007). Mahoney (2015) and Roby (2003) both linked poor student attendance to poor student achievement. Other researchers made this same connection but explored the factors that affect student achievement primarily at the secondary level. They stated the factors associated with poor school attendance should be classified into fundamental areas: Schools, family, individual, and community (Demir & Karabeyoglu, 2016; Jacob & Lovett, 2017). However, student attendance is not only important for high school aged students, but skills, habits, and routines learned at the elementary level directly contribute to student attendance once they enter a secondary school (Gottfried, 2009).

Researchers used various indicators to measure academic achievement. Performance on standardized tests, course failures, dropout, and earned quality point average all demonstrate a relationship with student attendance patterns. Most of available research indicated a direct relationship with poor attendance producing class failures, which leads to eventual school dropout. Among the extensive research studies examining how indicators related to student attendance, only a meager number of studies probed the relationship between individual attendance and the indicator of earned quality point average. And further, no known study has assessed the appropriateness of 18 days being utilized as the benchmark number to be deemed chronically absent from school.

In the following chapter, the researcher will outline the research design of the study, the instruments and protocols that are utilized throughout the study, the validity and reliability of the collected data, demographic information of the sampled population, the procedures of how the data was collected, and the process that was utilized to analyze the data.

**Chapter 3: Methodology**

Education is not only a necessity to ensure a quality livelihood to individuals, but it is also paramount to the well-being of society (Dekalb, 1999; Demir & Karabeyoglu, 2016; Gottfried, 2009; Mahoney, 2015; Murcia, 2015).  The benefits students receive from a free and appropriate public education is contingent upon their regular attendance at school (Smith, 1998).  The concern of regular school attendance has been a matter of discussion since 1642 when the Massachusetts Bay Colony enacted the first compulsory attendance law in America (Ensign, 1969).  The spirit of enacting this law supports the hypothesis that education is the cornerstone for individual success and the betterment of society (Mitchell, 1993).

The purpose of this quantitative study is to determine the relationship between student attendance at school and academic achievement.  State mandated proficiency exams and earned quality point averages were the utilized indicators to measure academic achievement in relation to attendance.  In this chapter, the researcher will describe the study's design, research protocol, data collection methodology, and how the data was analyzed.  The research questions will include:

1. What is the relationship between student attendance and academic achievement, as measured by state mandated proficiency exams?

2. What is the relationship between student attendance and academic achievement, as measured by earned quality point average?

3. What is the relationship between student attendance and academic achievement, as measured by earned quality point average, when controlling for state mandated proficiency exam score?

4. Are there significant differences in earned quality point averages based upon the number of student days absent?

5. Are there significant differences in state mandated proficiency exams based upon the number of student days absent?

**Research Design**

Student attendance is generally considered to be a factor related to academic achievement. This quantitative study compares individual student attendance with student performance on the Pennsylvania Keystone Exam in Literature, and the student's earned quality point average. The goal was to determine if a relationship exists between these variables. As all variables are numeric, a quantitative methodology design was most appropriate to be implemented by the researcher (Creswell & Creswell, 2018).

**Sample**

The sample for this targeted study includes tenth grade students from three suburban high schools (School A, B, C) in Western Pennsylvania. The three schools were purposively selected according to their respective enrollment: Large, medium, and small, respectively. Performance data was obtained pertaining to students who were in tenth grade during three separate academic years; 2015-2016, 2016-2017, and 2017-2018 school year. The sample size is 3,438 students, including only students who were enrolled for the entire academic year.

According to demographic information, School A is one of the wealthiest public-school districts in the state of Pennsylvania (United States Census Bureau, 2017). Over 63% of residents in this school district attained the education level of bachelor's degree or higher, and the median household income is $94,660. The median value of occupied homes within district boundaries is $258,000 (American Community Survey Office, 2017). Only 6% of students

enrolled in the school district are considered economically disadvantaged.  The student body is comprised of 53% males and 47% females.  The approximate ethnic enrollment percentages of the student population are 82.5% White, 13.5% Asian, 2.5% Black, 1.0% Hispanic, and 1.0% multi-racial.  Of the 2665 students enrolled in grades 9-12, about 16% are considered gifted while 6.4% are identified as requiring special education services.  Less than 1% of the student population is labeled as English Language Learner (Performance Profile, 2017).  A sample of 1,946 students from School A contributed to the entire sample size of this study's 3,438 students.

Within the district boundaries of School B, approximately 41% of residents attained a bachelor's degree or higher, and the median household income is $64,451.  The median value of occupied homes within the district is $154,300 (American Community Survey Office, 2017). Approximately 24% of students enrolled in the school district are considered economically disadvantaged.  The student body is comprised of 48% males and 52% females.  The approximate ethnic enrollment percentages of the student population are 90% White, 4% Asian, 4% Black, 1% Hispanic, and 1% multi-racial.  Of the 1,299 students enrolled in grades 9-12, about 11% are considered gifted while about 9% are identified as requiring special education services.  Approximately 1% of the student population is labeled as English Language Learner (Performance Profile, 2017).  A sample of 1,063 students from School B contributed to the entire sample size of this study's 3,438 students.

Demographics within district boundaries of School C reflect approximately 16.5% of district residents attained a bachelor's degree or higher, and the median household income is $39,770.  The median value of occupied homes within the district is $74,100 (American Community Survey Office, 2017).  Approximately 55.7% of students enrolled in the school district are considered economically disadvantaged (Performance Profile, 2017).  The student

body is comprised of 50% males and 50% females. The approximate ethnic enrollment percentages of the student population are 59.6% White, 1.0% Asian, 31.0% Black, 2.2% Hispanic, and 6.2% multi-racial. Of the 357 students enrolled in grades 9-12, about 1% are considered gifted while about 17% are identified as requiring special education services. Approximately 0.3% of the student population is labeled as English Language Learner (Performance Profile, 2017). A sample of 429 students from School C contributed to the entire sample size of this study's 3,438 students.

**Data**

The three variables of interest for this study include: number of days absent; student score on a state mandated proficiency exam; and student earned cumulative quality point average. Number of days absent is tracked by each school. The following section describes the source of data for the two variables measuring academic achievement: Pennsylvania Keystone Exam scores and calculated quality point average.

The Pennsylvania Keystone Exam is a state mandated proficiency test used to measure student achievement. Pennsylvania transitioned from the PSSA to the Keystone Exam during the 2012-2013 school year. The Keystone Exam is a course-ending exam in the areas of Literature, Biology, and Algebra (Pennsylvania Keystone Exams, 2012). However, the current study focuses exclusively on the results of the Literature assessment. Literature was the chosen assessment over the Algebra and Biology assessments due to the grade levels in which it is administered in the specific school districts sampled. Algebra is administered to eighth and ninth grade students, depending on which year they enroll in an Algebra course, and Biology is administered to eighth and ninth grade students, depending on which year they enroll in a

Biology course. The Literature Keystone Exam is administered to students at the end of their tenth grade year.

Participation in the Keystone Exam is required of all students enrolled in public schools in the state of Pennsylvania. Students are scored at four different performance levels on these exams: Advanced, proficient, basic, or below basic. A score of advanced or proficient needs to be attained in order for that student to be deemed as making adequate yearly progress (AYP) under NCLB. Basic or below basic translates to a failing result, and students must retake the exam or participate in various forms of locally determined assessments to demonstrate proficiency in that exam's subject content (Pennsylvania Keystone Exams, 2012). For the purpose of this study, the following ordinal scores were assigned to correspond to the four possible performance levels: Advanced – 4; proficient – 3; basic – 2; below basic – 1.

The earned quality point average indicates each student's level of academic achievement. It is derived to be the average number of quality points the student earns per credit hour. Quality point averages are calculated by multiplying the number of credit hours assigned to each course by the quality points earned from the course. This number is used to divide the total number of quality points by the total number of credit hours. Students enrolled in Advanced Placement (AP) and Honors level courses earn grades that are weighted compared to other courses. Advanced Placement level courses earn an extra grade point factor of 0.25, and Honors level courses earn an extra 0.125. Figure 2 is used when determining quality point averages for the purpose of this study:

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**Weighting of Grades**

**Grades used for the QPA formula:**

At mid-year, SEMESTER grades are used for full-year courses and FINAL grades are used for 1st semester classes.

At the end of the year, only FINAL grades are used for both semester and full-year courses.

**"Earned Credits"** – Credit value of each course adjusted by half for full-year courses at mid-year, or the actual earned credits for each completed course

**Grade points** – Where A=4, B=3, C=2, D=1, E=0

**Quality Points =** Grade points x "Earned Credits"

**AP Factor =** .25

**Honor Factor =** .125

**AP/Honors Weight =** ("Earned Credits" X Appropriate Factor) / # semesters completed

**Current Year QPA** – Includes ONLY courses taken during the current school year

**Cumulative QPA** – Includes all qualified courses in grades 9 though 12

**Overall QPA** – Includes all courses

**Academic QPA** – Includes academic courses only – English, Math, Social Studies, Science and World Language

**QPA for Ranking =** (Total Quality Points / Total "earned credits") + Total AP/Honors weight

*Figure 2. Weighting of Grades*

**Validity and Reliability**

        Cronbach's coefficient alpha has been utilized by researchers to determine if the Keystone Exam for Literature is a reliable instrument to assess academic achievement. To understand the data interpretation, the reader must understand that the Keystone Exam for Literature is a two-part test, and each part is described as a "module." Data was collected for each module into subgroups such as the total student population, ethnicity, gender, special education students, English language learners, and economically disadvantaged students (Pennsylvania Department of Education, 2017).

        The overall test score reliability of the Keystone Exam for Literature is high with a value of 0.84. However, the reliability for each individual module was relatively lower. Researchers attribute this to the fact each module contains few test questions. But when the overall scores

were analyzed, two-thirds of the student assessment scores were within one standard deviation of the assessment's mean score (Pennsylvania Department of Education, 2017).

The Pennsylvania Department of Education (2017) also conducted extensive reviews to ensure content validity on the Keystone Exam in Literature.  The Pennsylvania Department of Education partnered with the Data Recognition Corporation (DRC) to create reliable and valid assessments across content areas, including all Keystone Exams.  Below is a summary of efforts made to ensure content validity:

- Before the Keystone Literature Exam in Literature was subjected to field testing, the test items were submitted to content committees of Pennsylvania educators to review the following categories:
  - Freedom from bias
  - Appropriate language
  - Graphics
  - Quality of distractors
  - Correct answer
  - Appropriate sources of challenge such as unintended content and skills
  - Webb's Depth of Knowledge (1999)
  - Difficulty level
  - Grade-level appropriateness
  - Anchor, Eligible Content, and standard alignment
  - Overall quality and clarity
- Items were submitted to a bias, fairness, and sensitivity committee to be reviewed for issues related to diversity, gender, and other cultural sensitive material.

- DRC utilized Webb's Depth of Knowledge model to align Keystone Exam questions with Assessment Anchors and Eligible Content and the Academic Content Standards in terms of content and cognitive levels.

- DRC established test and item development specifications and ensured the items were sufficient in number and adequately distributed across content, levels of cognitive complexity, and levels of difficulty.

- DRC selected qualified item writers and provided training to help ensure they wrote items of high-quality.

- Any newly developed test items were first reviewed by content specialists at DRC to ensure they measured the intended Assessment Anchors and Eligible Content. Appropriateness for the intended students was also considered, including Depth of Knowledge, distractor reasonableness, language demand, grammar, punctuation, and graphics.

- All Keystone exams are intended to be administered according to standardized testing procedures with reasonable accommodations.

- Evaluators for written response items were carefully recruited and trained. Their scoring techniques are monitored throughout scoring sessions to ensure than scoring accuracy is maintained.

After the Pennsylvania Department of Education (2017) and the DRC exercised the listed items to ensure test validity, test questions were put to trial as embedded field test items in operational assessments. Statistical analyses were conducted on this field test data using differential item functioning, distractor analysis, and classical item analysis. The statistics were reviewed by DRC and a committee of Pennsylvania teachers to detect test items that might bias

student test scores.  This strengthens the validity of the Keystone Exams related to score interpretations by eliminating potential sources of construct-irrelevant variance.

The validity and reliability of individual student earned quality point averages is quite different than the Keystone Exam in Literature.  The Keystone Exam is one assessment and a snapshot of student performance for a single instance, while an earned quality point average is the accumulation of credits and earned classroom grades over a span of at least an entire academic year.  However, the same methods of data analysis can be utilized to determine validity and reliability (Pennsylvania Department of Education, 2017).

Researchers have also utilized Cronbach's coefficient alpha to measure the validity and reliability of student earned quality point averages.  This method has shown the reliability of earned quality point averages in relation to academic achievement is a high value, especially over time.  The data becomes more reliable when more data is gathered.  The reliability value for freshman students is 0.84, sophomores 0.90, juniors 0.93, and seniors 0.94.  The reliability becomes stronger in value due to the increase in the number of grades throughout multiple academic school years (Pennsylvania Department of Education, 2017).

There are concerns related to the validity and reliability of student earned quality point averages due to the sampled population.  Not all students are enrolled in the same courses or levels of courses throughout their academic careers.  Individual students have class choices which eliminates the possibility of intercourse correlation.  However, the negative effect on reliability caused by the lack of intercourse correlation is positively offset by the greater the number of years of data collected and analyzed.

**Data Collection**

The researcher requested the secondary data necessary for this study from each school district's administrative office after its approval by Point Park University's Institutional Review Board.  Technology support staff within each central level administrative office has the ability to create custom reports with student demographic, academic, and formal assessment data.  An email request to the appropriate personnel requested secondary data in the form of a CSV or Excel document file for easy import into statistical data editor software.  Attendance records, exam results, and earned quality point averages were gathered through the school districts' electronic student information systems.  The process used to collect the secondary data guaranteed anonymity of the students, staff, school, and district.  A unique identification number was assigned to each student to maintain student confidentiality and each student remained unidentifiable.  The information gathered has been electronic and stored without means of personally identifying students.

**Data Analysis**

The data analysis planned for this study was guided by the five research questions.  All data collected was cleaned and coded for use in the Statistical Package for the Social Sciences software (SPSS).  This step included spot checks of the data after importing to SPSS to ensure accuracy.  Tests were run to identify if there was any missing data from the sampled population.  This was not a significant issue for this study as all data is mandatory to track and record according to local and state policies.  Descriptive statistics for the data sample are provided in Chapter 4 including standard deviations and means for all included variables.

Research Question One is answered by conducting a Spearman's Rank Correlation Coefficient analysis in SPSS to quantify the potential relationship between number of school

days absent and student performance on state mandated proficiency exams.  A Spearman's Rank

Correlation Coefficient analysis was utilized due to the dependent variable (student performance

on state mandated proficiency exams) being an ordinal value.  Research Question Two is

answered by conducting a Pearson Product-Moment Correlation Coefficient analysis in SPSS to

quantify the potential relationship between number of school days absent and earned quality

point averages.  A Pearson Product-Moment Correlation Coefficient analysis was utilized due to

the dependent variable (earned quality point averages) being a scale value.  The potential types

of relationships researched in Research Question One and Research Question Two include very

strong positive, very strong negative, strong positive, strong negative, moderate positive,

moderate negative, weak positive, weak negative, or the possibility of no relationship.  Research

Question Three is answered by conducting a partial correlation test between number of school

days absent and earned quality point average after controlling for the impact of proficiency exam

score.  Research Question Four and Research Question Five utilize an ANOVA test to determine

if there are significant differences between the independent and dependent variables.  Research

Question Four examines earned quality point averages based upon number of student absences.

Research Question Five examines student performance on state mandated proficiency exams

based upon number of student absences.  For the purposes of these ANOVA tests, the researcher

clustered the students into eight groups based upon a range of days absent: 0 days; 0.01-3 days;

3.01-6 days; 6.01-9 days; 9.01-12 days; 12.01-15 days; 15.01-18 days; >18 days.

Student data was provided for 3,438 individual students to be the sample size of this

study's population.  However, some data points were missing from the data provided by the

sampled school districts.  Of the 3,438 students, 91 students did not have a Keystone Exam in

Literature score; 39 students from School A; 52 students from School B.  This is not unusual due

to student absences during the state mandated testing window, or students electing not to participate in the assessment due to religious exemption. Overall, these missing data points were not notable to the study as it only comprised 2.6% of the sample size. These students were excluded from Research Question One, Research Question Three, and Research Question Five due to the Keystone Exam in Literature score is a variable within these questions.

Other missing data points from the sample population included six students from School B, who in addition to not providing a Keystone Exam in Literature score, there was also no earned quality point average provided. One last missing data point was one student from School A was not provided with attendance data, the independent variable of all research questions. These seven students, who comprised 0.002% of the sample population, were removed from the sample and not included in any analysis related to this study.

**Summary**

Chapter 3 is a demonstration of the research design of the current study, the instruments and protocols that will be utilized throughout the study, the validity and reliability of the data collected, the procedures of how the data was collected, and the process utilized to analyze the data. This study exercises quantitative methods to determine if a relationship exists between student attendance, student performance on the Pennsylvania Keystone Exam in Literature, and earned quality point average. The population studied during this research is the overall population of tenth graders at three high schools located near Pittsburgh, Pennsylvania. The context and timeline of the study, the data gathered and an explanation of how the data relates to the questions researched, and a summary of key findings are provided in Chapter 4. Chapter 5 is a review of the purpose of conducting this study, what was learned and how it can be applied to

theory and practice, the impact it has had on my leadership abilities, implications for policy and

practice, and recommendations for future research.

## Chapter 4: Findings

**Introduction**

      This chapter is a presentation of the findings from the correlation coefficient analysis, partial correlation test, and ANOVA test, in addition to an overview of the conducted research and a summary of its key findings.  The research questions were as follows:

1. What is the relationship between student attendance and academic achievement, as measured by state mandated proficiency exams?

2. What is the relationship between student attendance and academic achievement, as measured by earned quality point average?

3. What is the relationship between student attendance and academic achievement, as measured by earned quality point average, when controlling for state mandated proficiency exam score?

4. Are there significant differences in earned quality point averages based upon the number of student days absent?

5. Are there significant differences in state mandated proficiency exams based upon the number of student days absent?

      Research Question One is answered by conducting a Spearman's Rank Correlation Coefficient analysis in SPSS to quantify the potential relationship between number of school days absent and student performance on state mandated proficiency exams.  A Spearman's Rank Correlation Coefficient analysis was utilized due to the dependent variable (student performance on state mandated proficiency exams) being an ordinal value.  Research Question Two is answered by conducting a Pearson Product-Moment Correlation Coefficient analysis in SPSS to quantify the potential relationship between number of school days absent and earned quality

point averages. A Pearson Product-Moment Correlation Coefficient analysis was utilized due to the dependent variable (earned quality point averages) being a scale value. Research Question Three is answered by conducting a partial correlation test between number of school days absent and earned quality point average after controlling for the impact of proficiency exam score. Research Question Four and Research Question Five utilize an ANOVA test to determine if there are significant differences between the independent and dependent variables. Research Question Four examines earned quality point averages based upon number of student absences. Research Question Five examines student performance on state mandated proficiency exams based upon number of student absences. For the purposes of these ANOVA tests, the researcher clustered the students into eight groups based upon a range of days absent: 0 days; 0.01-3 days; 3.01-6 days; 6.01-9 days; 9.01-12 days; 12.01-15 days; 15.01-18 days; >18 days.

In this study, the researcher collected secondary student attendance and academic performance data from three separate suburban high schools located in Western Pennsylvania. Data collected included:

- Individual student overall cumulative earned quality point average

- Individual student score on the state mandated Keystone Exam score in Literature

- Individual student number of days absent

This research study reviewed student attendance and academic performance data of a sophomore student population over three school years; 2015-2016, 2016-2017, and 2017-2018. The total number of students whose attendance and academic performance data was utilized to conduct this study was 3,438.

**Timeline of Study**

The following timeline represents the data collection process and analysis:

- December 11, 2018:  The researcher defended the proposal of his research study and was approved by his committee, Dr. Tara Abbott, Chair, Dr. Gita Maharaja, and Dr. Arlene Wheat.  This approval granted the ability to apply to the Institutional Review Board (IRB) at Point Park University.

- December 16, 2018:  The researcher's application was submitted to the IRB at Point Park University.

- January 29, 2019:  Dr. Brent Robins, Point Park University IRB Chair, approved the researcher's IRB application.  The supporting documentation can be found in Appendix A.

- January 30, 2019:  The researcher formally requested and began collecting research from three separate suburban high schools in Western Pennsylvania.

- February 21, 2019:  All data was received from three separate suburban high schools in Western Pennsylvania.

- February 24, 2019:  The researcher ran the cleaned and coded data through the Statistical Package for the Social Sciences software (SPSS).

- April 22, 2019:  The researcher defended his research study and was approved by his committee, Dr. Tara Abbott, Chair, Dr. Gita Maharaja, and Dr. Arlene Wheat at Point Park University.

**Descriptive Statistics**

The data that was collected and researched for this targeted case study included the following variables from three suburban high schools in Western Pennsylvania:  Number of individual student days absent, individual student score on the state mandated Keystone Exam in Literature, and individual student cumulative earned quality point average.

Of the 3,431 student sample size utilized when examining student attendance in relation to earned quality point average, 282 (8.2%) students attained perfect attendance.  The largest cluster of student absences when performing the ANOVA test examining earned quality point averages based upon number of student absences was 0.01 – 3 days absent, where 751 (21.8%) students were included in this grouping.  Chronically absent students accounted for 412 (12%) of the studied sample and their average earned quality point average was the lowest of all groupings at 2.580, 1.207 lower than students with perfect attendance who averaged an earned quality point average of 3.787.  Overall, the 3,431 students included in this sample were absent an average of 9.294 days from school and earned a quality point average mean score of 3.376.

The 3,346 student sample size utilized when researching student attendance in relation to state mandated proficiency exams also revealed statistics that could prove significant.  Students with perfect attendance accounted for 276 (8.2%) of the sample size, while the largest cluster of student absences when performing the ANOVA test examining scores on state mandated proficiency exams based upon number of student absences was 0.01 – 3 days absent, where 741 (22.1%) students were included in this grouping.  Chronically absent students accounted for 380 (11.3%) of the studied sample and their average score on the state mandated proficiency exam was the lowest of all groupings at 2.426, .885 lower than students with perfect attendance who averaged a state mandated proficiency score of 3.311.  Comprehensively, the 3,346 students

included in this sample were absent an average of 8.980 days from school and scored an average

of 2.981 on the state mandated proficiency exam.  This score is slightly below proficient and

represents a performance level of basic.

## Description of Quantitative Findings for Each Research Question

## Research Question One

This section reviews the findings from Research Question One that asked, "What is the

relationship between student attendance and academic achievement, as measured by state

mandated proficiency exams?"

## Descriptive Statistics for Research Question One

Research Question One examined the relationship between student attendance and

academic achievement, as measured by state mandated proficiency exams.  The sample size

consisted of 3,346 students.  Keystone Exam Score performance levels were assigned ordinal

values to represent student performance:  Advanced = 4; proficient = 3; basic = 2; below basic =

1.

## Description of Statistical Findings

The data collected from this section includes 3,346 individual students' Keystone Exam

score in Literature and school days absent from three separate high schools located in Western

Pennsylvania during the 2015-2016, 2016-2017, and 2017-2018 school years.  The collected data

was organized in Microsoft Excel and then run as a Spearman's Rank Correlation Coefficient

analysis test through SPSS to determine if there is a relationship between the independent

variable (student attendance) and the dependent variable (Keystone Exam score in Literature).

The Spearman's Rank Correlation Coefficient analysis provided the *r* value which quantifies the

linear relationship between the two variables, and the researcher employed Cohen's Effect Sizes

to interpret the magnitude of the relationship as either very strong positive (0.7 - 1); strong

positive (0.5 - 0.69); moderate positive (0.3 - 0.49); weak positive (0.1 - 0.29); weak negative (-

0.1 - -0.29); moderate negative (-0.3 - -0.49); strong negative (-0.5 - -0.69); and very strong

negative (-0.7 - -1) (Cohen, 1988).  For the purposes of determining statistical significance, the

significance threshold was set at 0.05.

The result of the model addressing Research Question One found a statistically

significant linear relationship between the independent and dependent variables.  The Keystone

Exam in Literature score ($r$ = -.292, p = <.001) and ($r^2$ = .085) had a moderate negative

relationship with student attendance.  An $r$-value of -.292 suggests that with a one unit increase

in student absence, one could expect a decrease of .292 on the Keystone Exam Score in

Literature.  The $r^2$-value of .085 suggests 8.5% of the variance in Keystone Exam Score is due to

student absences.   For the purpose of this study, Keystone Exam Score performance levels were

assigned ordinal values to represent student performance:  Advanced = 4; proficient = 3; basic =

2; below basic = 1.  Therefore, when considering a one unit increase in absence decreases the

Keystone Exam Score on average by .292, every three absences is approximately the equivalent

of one performance level.  Table 2 depicts a visual representation of Research Question One.

*Table 2. Spearman's Rank Correlation Coefficient Test for Output for Student Absences and Keystone Exam in Literature Score*

| Variables | $r$ value | p value | Cohen's Effect Size |
|---|---|---|---|
| Keystone Exam in Literature Score | -.292 | (<.001) | Moderate |

***. Correlation is significant at the 0.01 level (2-tailed).

**Research Question Two**

This section reviews the findings from Research Question Two that asked, "What is the relationship between student attendance and academic achievement, as measured by earned quality point average?"

**Descriptive Statistics for Research Question Two**

Research Question Two examined the relationship between student attendance and academic achievement, as measured by earned quality point average. The sample size consisted of 3,431 students. Of the 3,431 student sample size, the mean number of days absent from school is 9.294 with a standard deviation of 10.514, and the mean earned quality point average is 3.376 with a standard deviation of .772. Table 3 is a visual representation of the descriptive statistics utilized for Research Question Two.

*Table 3. Research Question Two Descriptive Statistics*

|          | Mean  | Std. Deviation | N    |
|----------|-------|----------------|------|
| QPA      | 3.376 | .772           | 3431 |
| Absences | 9.294 | 10.514         | 3431 |

**Description of Statistical Findings**

The data collected from this section includes 3,431 individual students' earned quality point averages and school days absent from three separate high schools located in Western Pennsylvania during the 2015-2016, 2016-2017, and 2017-2018 school years. The collected data was organized in Microsoft Excel and then run as a Pearson's Product-Moment Correlation test through SPSS to determine if there is a relationship between the independent variable (student attendance) and the dependent variable (earned quality point average). The Pearson's Correlation Coefficient provided the $r$ value which quantifies the linear relationship between the

two variables, and the researcher employed Cohen's Effect Sizes to interpret the magnitude of

the relationship as either very strong (greater than 0.7); strong (greater than 0.5); moderate

(greater than 0.3); and weak (greater than0 .1) (Cohen, 1988).  For the purposes of determining

statistical significance, the significance threshold was set at 0.05.

The result of the model addressing Research Question Two found a statistically

significant linear relationship between the independent and dependent variables.  Earned quality

point average ($r$ = -.454, p = <.001) and ($r^2$ = .206) had a moderate negative relationship with

student attendance.  An $r$-value of -.454 suggests that with a one unit increase in student absence,

one could expect a decrease of .454 in earned quality point average.  Therefore, when

considering a one unit increase in absence decreases the earned quality point average by .454,

every two absences is approximately the equivalent of dropping a letter grade.  The $r^2$-value of

.206 suggests 20.6% of the variance in earned quality point average is due to student absences.

Table 4 depicts a visual representation of Research Question Two.

*Table 4. Pearson Product-Moment Correlation Test for Output for Student Absences and Earned Quality Point Averages*

| Variables | $r$ value | p value | Cohen's Effect Size |
|---|---|---|---|
| Earned Quality Point Average | -.454 | (<.001) | Moderate |

***. Correlation is significant at the 0.01 level (2-tailed).

**Research Question Three**

This section reviews the findings from Research Question Three that asked, "What is the

relationship between student attendance and academic achievement, as measured by earned

quality point average, when controlling for state mandated proficiency exam score?"

**Descriptive Statistics for Research Question Three**

Research Question Three examined the relationship between student attendance and

academic achievement, as measured by earned quality point average, when controlling for state

mandated proficiency exam score.  The sample size consisted of 3,346 students.  Of the 3,346

student sample size, the mean number of days absent from school is 8.980 with a standard

deviation of 9.730; the mean earned quality point average is 3.388 with a standard deviation of

.758; the mean Keystone Exam Score is 2.981 with a standard deviation of .757.  Table 5 is a

visual representation of the descriptive statistics utilized for Research Question Three.

*Table 5.  Research Question Three Descriptive Statistics*

|  | Mean | Std. Deviation | N |
|---|---|---|---|
| QPA | 3.388 | .758 | 3346 |
| Absences | 8.980 | 9.730 | 3346 |
| Keystone Score | 2.981 | .757 | 3346 |

**Description of Statistical Findings**

The data collected from this section includes 3,431 individual students' earned quality

point averages, Keystone Exam in Literature scores, and school days absent from three separate

high schools located in Western Pennsylvania during the 2015-2016, 2016-2017, and 2017-2018

school years.  The collected data was organized in Microsoft Excel and then run as a partial

correlation test between number of school days absent and earned quality point average after

controlling for the impact of Keystone Exam in Literature score to determine if there is a

relationship between the independent variable (student attendance) and the dependent variable

(earned quality point average).  The partial correlation test provided the *r* value which quantifies

the linear relationship between the two variables, and the researcher employed Cohen's Effect

Sizes to interpret the magnitude of the relationship as either very strong (greater than 0.7); strong (greater than 0.5); moderate (greater than 0.3); and weak (greater than 0.1) (Cohen, 1988). For the purposes of determining statistical significance, the significance threshold was set at 0.05.

The result of the model addressing Research Question Three found a statistically significant linear relationship between the independent and dependent variables. When controlling for the Keystone Exam in Literature score on the relationship between student attendance and earned quality point average, the researcher found the following partial correlation ($r = -.355$, p = <.001). Earned quality point average had a moderate negative relationship with student attendance. An r-value of -.355 suggests that with a one unit increase in student absence, one could expect a decrease of .355 in earned quality point average while controlling for the variable of Keystone Exam Score in Literature. Even though it is not as strong of a relationship as discovered while examining the variables of Research Question Two ($r = -.454$, p = <.001), there is still a significant relationship between student attendance and earned quality point average when removing the impact of Keystone Exam Score in Literature. Table 6 depicts a visual representation of Research Question Three.

*Table 6. Partial Correlation Test for Output for Student Absences and Earned Quality Point Averages While Controlling for Keystone Exam in Literature Score*

| Variables | $r$ value | p value | Cohen's Effect Size |
|---|---|---|---|
| Earned Quality Point Average | -.355 | (<.001) | Moderate |

\*\*\*. Correlation is significant at the 0.01 level (2-tailed).

**Research Question Four**

This section reviews the findings from Research Question Four that asked, "Are there significant differences in earned quality point averages based upon the number of student days absent?"

**Descriptive Statistics for Research Question Four**

Research Question Four examined if there are significant differences in earned quality point averages based upon the number of student days absent. The sample size consisted of 3,431 students. The researcher clustered the students into eight groups based upon a range of days absent for this research question: 0 days; 0.01-3 days; 3.01-6 days; 6.01-9 days; 9.01-12 days; 12.01-15 days; 15.01-18 days; >18 days. Descriptive statistics for Research Question Four, including mean, earned quality point average, standard deviation, and number of students included within each cluster are represented in Table 7.

*Table 7. Research Question Four Descriptive Statistics*

| Attendance Groups | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval Lower | Upper | Min | Max |
|---|---|---|---|---|---|---|---|---|
| 0 Days Absent | 282 | 3.787 | .582 | .034 | 3.719 | 3.855 | .85 | 4.52 |
| 0.1-3 Days Absent | 751 | 3.680 | .588 | .021 | 3.638 | 3.722 | .89 | 4.58 |
| 3.01-6 Days Absent | 668 | 3.553 | .636 | .024 | 3.505 | 3.602 | .69 | 4.50 |
| 6.01-9 Days Absent | 499 | 3.358 | .697 | .031 | 3.296 | 3.419 | .00 | 4.47 |
| 9.01-12 Days Absent | 404 | 3.330 | .655 | .032 | 3.266 | 3.394 | 1.14 | 5.13 |
| 12.01-15 Days Absent | 246 | 3.205 | .739 | .047 | 3.112 | 3.298 | .81 | 4.45 |
| 15.01-18 Days Absent | 169 | 2.999 | .792 | .060 | 2.878 | 3.119 | .12 | 4.38 |
| >18 Days Absent | 412 | 2.580 | .900 | .044 | 2.492 | 2.667 | .00 | 4.25 |
| Total | 3431 | 3.376 | .772 | .013 | 3.350 | 3.402 | .00 | 5.13 |

**Description of Statistical Findings**

The data collected from this section includes 3,431 individual students' earned quality point averages and school days absent from three separate high schools located in Western Pennsylvania during the 2015-2016, 2016-2017, and 2017-2018 school years. The collected data was organized in Microsoft Excel and then run as an ANOVA test to determine if there are differences between groupings of the data sample. Groupings were established as students who

missed 0, 0.01-3, 3.01-6, 6.01-9, 9.01-12, 12.01-15, 15.01-18, and >18 days of school within an academic year.

There was a statistically significant difference between groups as determined by one-way ANOVA ($F(7,3424) = 130.727$, $p = <.001$). A Tukey post hoc test revealed that students who missed more than 18 days of school earned statistically significantly lower quality point averages compared to all other student groupings: students who missed 15.01-18 days of school (-.418, $p = >.001$), 12.01-15 days of school (-.625, $p = >.001$), 9.01-12 days of school (-.750, $p = >.001$), 6.01-9 days of school (-.777, $p = >.001$), 3.01-6 days of school (-.973, $p = >.001$), 0.01-3 days of school (-1.10, $p = >.001$), and students who missed zero days of school (-1.20, $p = >.001$). There was no significant difference between only five of the student groupings. Students who missed zero days of school and students who missed 0.01-3 days of school (.106, $p = .334$); students who missed 6.01-9 days of school and 9.01-12 days of school (.027, $p = .999$); students who missed 6.01-9 days of school and students who missed 12.01-15 days of school (.152, $p = .083$); students who missed 9.01-12 days of school and students who missed 12.01-15 days of school (-.125, $p = .318$); and students who missed 12.01-15 days of school and 15.01-18 days of school (-.206, $p = .054$). Table 8 and 9 depict a visual representation of Research Question Four.

*Table 8. ANOVA Analysis Comparing Differences Between Earned Quality Point Averages and Days Attended by Comparison Groupings.*

|  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 431.456 | 7 | 61.637 | 130.727 | .000 |
| Within Groups | 1613.907 | 3424 | .471 |  |  |
| Total | 2045.363 | 3431 |  |  |  |

*Table 9. Tukey Post Hoc Test Representing Multiple Comparisons of Earned Quality Point Average Between Attendance Groupings.*

| Attendance Groups | Comparative Group | Mean Difference | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower | Upper |
| 0 Days Absent | 0.01-3 Days Absent | .106 | .047 | .334 | -.038 | .252 |
| | 3.01-6 Days Absent | .233 | .048 | .000 | .085 | .381 |
| | 6.01-9 Days Absent | .429 | .051 | .000 | .274 | .584 |
| | 9.01-12 Days Absent | .456 | .053 | .000 | .295 | .618 |
| | 12.01-15 Days Absent | .581 | .059 | .000 | .400 | .763 |
| | 15.01-18 Days Absent | .788 | .066 | .000 | .585 | .990 |
| | >18 Days Absent | 1.207 | .053 | .000 | 1.046 | 1.368 |
| 0.01-3 Days Absent | 0 Days Absent | -.106 | .047 | .334 | -.252 | .038 |
| | 3.01-6 Days Absent | .126 | .036 | .012 | .015 | .2374 |
| | 6.01-9 Days Absent | .322 | .039 | .000 | .202 | .442 |
| | 9.01-12 Days Absent | .349 | .042 | .000 | .221 | .478 |
| | 12.01-15 Days Absent | .474 | .050 | .000 | .322 | .628 |
| | 15.01-18 Days Absent | .681 | .058 | .000 | .504 | .858 |
| | >18 Days Absent | 1.100 | .042 | .000 | .972 | 1.227 |
| 3.01-6 Days Absent | 0 Days Absent | -.233 | .048 | .000 | -.381 | -.085 |
| | 0.01-3 Days Absent | -.126 | .036 | .012 | -.237 | -.015 |
| | 6.01-9 Days Absent | .195 | .040 | .000 | .072 | .318 |
| | 9.01-12 Days Absent | .222 | .043 | .000 | .091 | .354 |
| | 12.01-15 Days Absent | .348 | .051 | .000 | .193 | .503 |
| | 15.01-18 Days Absent | .554 | .059 | .000 | .375 | .733 |
| | >18 Days Absent | .973 | .043 | .000 | .843 | 1.104 |
| 6.01-9 Days Absent | 0 Days Absent | -.429 | .051 | .000 | -.584 | -.274 |
| | 0.01-3 Days Absent | -.322 | .039 | .000 | -.442 | -.202 |
| | 3.01-6 Days Absent | -.195 | .040 | .000 | -.318 | -.072 |
| | 9.01-12 Days Absent | .027 | .045 | .999 | -.112 | .166 |
| | 12.01-15 Days Absent | .152 | .053 | .083 | -.009 | .314 |
| | 15.01-18 Days Absent | .358 | .061 | .000 | .173 | .544 |
| | >18 Days Absent | .777 | .045 | .000 | .639 | .916 |
| 9.01-12 Days Absent | 0 Days Absent | -.456 | .053 | .000 | -.618 | -.295 |
| | 0.01-3 Days Absent | -.349 | .042 | .000 | -.478 | -.221 |
| | 3.01-6 Days Absent | -.222 | .043 | .000 | -.354 | -.091 |
| | 6.01-9 Days Absent | -.027 | .045 | .999 | -.166 | .112 |
| | 12.01-15 Days Absent | .125 | .055 | .318 | -.043 | .293 |
| | 15.01-18 Days Absent | .331 | .062 | .000 | .140 | .522 |
| | >18 Days Absent | .750 | .048 | .000 | .604 | .896 |
| 12.01-15 Days Absent | 0 Days Absent | -.581 | .059 | .000 | -.763 | -.400 |
| | 0.01-3 Days Absent | -.474 | .050 | .000 | -.628 | -.322 |
| | 3.01-6 Days Absent | -.348 | .051 | .000 | -.503 | -.193 |
| | 6.01-9 Days Absent | -.152 | .053 | .083 | -.314 | .009 |
| | 9.01-12 Days Absent | -.125 | .055 | .318 | -.293 | .043 |
| | 15.01-18 Days Absent | .206 | .068 | .054 | -.001 | .414 |

|  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
|  | >18 Days Absent | .625 | .055 | .000 | .457 | .793 |
| 15.01-18 Days Absent | 0 Days Absent | -.788 | .066 | .000 | -.990 | -.585 |
|  | 0.01-3 Days Absent | -.681 | .058 | .000 | -.858 | -.504 |
|  | 3.01-6 Days Absent | -.554 | .059 | .000 | -.733 | -.375 |
|  | 6.01-9 Days Absent | -.358 | .061 | .000 | -.544 | -.173 |
|  | 9.01-12 Days Absent | -.331 | .062 | .000 | -.522 | -.140 |
|  | 12.01-15 Days Absent | -.206 | .068 | .054 | -.414 | .001 |
|  | >18 Days Absent | .418 | .062 | .000 | .228 | .609 |
| >18 Days Absent | 0 Days Absent | -1.207 | .053 | .000 | -1.368 | -1.04 |
|  | 0.01-3 Days Absent | -1.100 | .042 | .000 | -1.227 | -.972 |
|  | 3.01-6 Days Absent | -.973 | .043 | .000 | -1.104 | -.843 |
|  | 6.01-9 Days Absent | -.777 | .045 | .000 | -.916 | -.639 |
|  | 9.01-12 Days Absent | -.750 | .048 | .000 | -.896 | -.604 |
|  | 12.01-15 Days Absent | -.625 | .055 | .000 | -.793 | -.457 |
|  | 15.01-18 Days Absent | -.418 | .062 | .000 | -.609 | -.228 |

*. Correlation is significant at the 0.05 level (2-tailed).

## Research Question Five

This section reviews the findings from Research Question Five that asked, "Are there significant differences in state mandated proficiency exams based upon the number of student days absent?"

## Descriptive Statistics for Research Question Five

Research Question Five examined if there are significant differences in Keystone Exam in Literature scores based upon the number of student days absent. The sample size consisted of 3,346 students. The researcher clustered the students into eight groups based upon a range of days absent for this research question: 0 days; 0.01-3 days; 3.01-6 days; 6.01-9 days; 9.01-12 days; 12.01-15 days; 15.01-18 days; >18 days. Keystone Exam Score performance levels were assigned ordinal values to represent student performance: Advanced = 4; proficient = 3; basic = 2; below basic = 1. Descriptive statistics for Research Question Five, including mean, Keystone Exam Score, standard deviation, and number of students included within each cluster are represented in Table 10.

*Table 10. Research Question Five Descriptive Statistics*

| Attendance Groups | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval Lower | 95% Confidence Interval Upper | Min | Max |
|---|---|---|---|---|---|---|---|---|
| 0 Days Absent | 276 | 3.311 | .630 | .037 | 3.236 | 3.386 | 1.0 | 4.0 |
| 0.01-3 Days Absent | 741 | 3.168 | .675 | .024 | 3.120 | 3.217 | 1.0 | 4.0 |
| 3.01-6 Days Absent | 655 | 3.102 | .672 | .026 | 3.050 | 3.153 | 1.0 | 4.0 |
| 6.01-9 Days Absent | 492 | 2.963 | .683 | .030 | 2.902 | 3.024 | 1.0 | 4.0 |
| 9.01-12 Days Absent | 398 | 3.000 | .706 | .035 | 2.930 | 3.069 | 1.0 | 4.0 |
| 12.01-15 Days Absent | 244 | 2.774 | .787 | .050 | 2.675 | 2.873 | 1.0 | 4.0 |
| 15.01-18 Days Absent | 160 | 2.687 | .825 | .065 | 2.558 | 2.816 | 1.0 | 4.0 |
| >18 Days Absent | 380 | 2.426 | .864 | .044 | 2.339 | 2.513 | 1.0 | 4.0 |
| Total | 3346 | 2.981 | .757 | .013 | 2.955 | 3.006 | 1.0 | 4.0 |

**Description of Statistical Findings**

The data collected from this section includes 3,346 individual students' Keystone Exam in Literature scores and school days absent from three separate high schools located in Western Pennsylvania during the 2015-2016, 2016-2017, and 2017-2018 school years. The collected data was organized in Microsoft Excel and then run as an ANOVA test to determine if there are differences between groupings of the data sample. Groupings were established as students who missed 0, 0.01-3, 3.01-6, 6.01-9, 9.01-12, 12.01-15, 15.01-18, and >18 days of school within an academic year.

There was a statistically significant difference between groups as determined by one-way ANOVA ($F_{(7,3339)} = 57.7222$, $p = <.001$). A Tukey post hoc test revealed that students who missed more than 18 days of school earned statistically significantly lower quality point averages compared to all other student groupings: students who missed 15.01-18 days of school (-.261, $p = .003$), 12.01-15 days of school (-.348, $p = >.001$), 9.01-12 days of school (-.573, $p = >.001$), 6.01-9 days of school (-.537, $p = >.001$), 3.01-6 days of school (-.675, $p = >.001$), 0.01-3 days of school (-.742, $p = >.001$), and students who missed zero days of school (-.88, $p = >.001$). There was no significant difference between only five of the student groupings. Students who missed

zero days of school and students who missed 0.01-3 days of school (.142, p = .088); students

who missed 0.01-3 days of school and students who missed 3.01-6 days of school (.066, p =

.668); students who missed 3.01-6 days of school and students who missed 9.01-12 days of

school (.102, p = .324); students who missed 6.01-9 days of school and 9.01-12 days of school (-

.036, p = .995); students who missed 12.01-15 days of school and 15.01-18 days of school (.087,

p = .933). Table 11 and 12 depict a visual representation of Research Question Five.

*Table 11. ANOVA Analysis Comparing Differences Between Keystone Exam in Literature Score and Days Attended by Comparison Groupings.*

|  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 207.295 | 7 | 29.614 | 57.722 | .000 |
| Within Groups | 1712.519 | 3339 | .513 |  |  |
| Total | 1919.814 | 3346 |  |  |  |

*Table 12. Tukey Post Hoc Test Representing Multiple Comparisons of Keystone Exam in Literature Score Between Attendance Groupings.*

| Attendance Groups | Comparative Group | Mean Difference | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
|  |  |  |  |  | Lower | Upper |
| 0 Days Absent | 0.01-3 Days Absent | .142 | .050 | .088 | -.010 | .296 |
|  | 3.01-6 Days Absent | .209 | .051 | .001 | .053 | .365 |
|  | 6.01-9 Days Absent | .348 | .053 | .000 | .184 | .511 |
|  | 9.01-12 Days Absent | .311 | .056 | .000 | .141 | .481 |
|  | 12.01-15 Days Absent | .537 | .062 | .000 | .346 | .727 |
|  | 15.01-18 Days Absent | .624 | .071 | .000 | .408 | .839 |
|  | >18 Days Absent | .885 | .056 | .000 | .713 | 1.057 |
| 0.01-3 Days Absent | 0 Days Absent | -.142 | .050 | .088 | -.296 | .010 |
|  | 3.01-6 Days Absent | .066 | .038 | .668 | -.050 | .182 |
|  | 6.01-9 Days Absent | .205 | .041 | .000 | .078 | .331 |
|  | 9.01-12 Days Absent | .168 | .044 | .004 | .033 | .303 |
|  | 12.01-15 Days Absent | .394 | .052 | .000 | .233 | .554 |
|  | 15.01-18 Days Absent | .481 | .062 | .000 | .291 | .670 |
|  | >18 Days Absent | .742 | .045 | .000 | .605 | .879 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3.01-6 Days Absent | 0 Days Absent | -.209 | .051 | .001 | -.365 | -.053 |
| | 0.01-3 Days Absent | -.066 | .038 | .668 | -.182 | .050 |
| | 6.01-9 Days Absent | .138 | .042 | .026 | .009 | .268 |
| | 9.01-12 Days Absent | .102 | .045 | .324 | -.035 | .240 |
| | 12.01-15 Days Absent | .327 | .053 | .000 | .164 | .490 |
| | 15.01-18 Days Absent | .414 | .063 | .000 | .223 | .606 |
| | >18 Days Absent | .675 | .046 | .000 | .535 | .816 |
| 6.01-9 Days Absent | 0 Days Absent | -.348 | .053 | .000 | -.511 | -.184 |
| | 0.01-3 Days Absent | -.205 | .041 | .000 | -.331 | -.078 |
| | 3.01-6 Days Absent | -.138 | .042 | .026 | -.268 | .009 |
| | 9.01-12 Days Absent | -.036 | .048 | .995 | -.183 | .109 |
| | 12.01-15 Days Absent | .188 | .056 | .018 | .018 | .358 |
| | 15.01-18 Days Absent | .275 | .065 | .001 | .078 | .473 |
| | >18 Days Absent | .537 | .048 | .000 | .388 | 0685 |
| 9.01-12 Days Absent | 0 Days Absent | -.311 | .056 | .000 | -.481 | -.141 |
| | 0.01-3 Days Absent | -.168 | .044 | .004 | -.303 | -.033 |
| | 3.01-6 Days Absent | -.102 | .045 | .324 | -.240 | .035 |
| | 6.01-9 Days Absent | .036 | .048 | .995 | -.109 | .183 |
| | 12.01-15 Days Absent | .225 | .058 | .003 | .048 | .402 |
| | 15.01-18 Days Absent | .312 | .067 | .000 | .109 | .515 |
| | >18 Days Absent | .573 | .051 | .000 | .417 | .729 |
| 12.01-15 Days Absent | 0 Days Absent | -.537 | .062 | .000 | -.727 | -.346 |
| | 0.01-3 Days Absent | -.394 | .052 | .000 | -.554 | -.233 |
| | 3.01-6 Days Absent | -.327 | .053 | .000 | -.490 | -.164 |
| | 6.01-9 Days Absent | -.188 | .056 | .018 | -.358 | -.018 |
| | 9.01-12 Days Absent | -.225 | .058 | .003 | -.402 | -.048 |
| | 15.01-18 Days Absent | .087 | .072 | .933 | -.133 | .308 |
| | >18 Days Absent | .348 | .058 | .000 | .170 | .526 |
| 15.01-18 Days Absent | 0 Days Absent | -.624 | .071 | .000 | -.839 | -.408 |
| | 0.01-3 Days Absent | -.481 | .062 | .000 | -.670 | -.291 |
| | 3.01-6 Days Absent | -.414 | .063 | .000 | -.606 | -.223 |
| | 6.01-9 Days Absent | -.275 | .065 | .001 | -.473 | -.078 |
| | 9.01-12 Days Absent | -.312 | .067 | .000 | -.515 | -.109 |
| | 12.01-15 Days Absent | -.087 | .072 | .933 | -.308 | .133 |
| | >18 Days Absent | .261 | .067 | .003 | .056 | .465 |
| >18 Days Absent | 0 Days Absent | -.885 | .056 | .000 | -1.057 | -.713 |
| | 0.01-3 Days Absent | -.742 | .045 | .000 | -.879 | -.605 |
| | 3.01-6 Days Absent | -.675 | .046 | .000 | -.816 | -.535 |
| | 6.01-9 Days Absent | -.537 | .048 | .000 | -.685 | -.388 |
| | 9.01-12 Days Absent | -.573 | .051 | .000 | -.729 | -.417 |
| | 12.01-15 Days Absent | -.348 | .058 | .000 | -.526 | -.170 |
| | 15.01-18 Days Absent | -.261 | .067 | .003 | -.465 | -.056 |

*. Correlation is significant at the 0.05 level (2-tailed).

**Summary of Key Findings**

The outcomes from this study's research questions found that there is a direct relationship between student attendance and academic performance as evidenced by significant correlations between the variables.

When examining the relationship between student attendance and academic achievement, as measured by state mandated proficiency exams, the data showed that for each increase in student absence from school, Keystone Exam in Literature scores decreased ($r = -.292$, $p = <.001$).

When examining the relationship between student attendance and academic achievement, as measured by earned quality point averages, the data showed that for each increase in student absence from school, earned quality point averages decreased ($r = -.454$, $p = <.001$).

When examining the relationship between student attendance and academic achievement, as measured by earned quality point average, when controlling for state mandated proficiency exam score, the data showed that for each increase in student absence from school, earned quality point averages decreased ($r = -.355$, $p = <.001$).

When examining significant differences in earned quality point averages based upon the number of student days absent, the data showed that there were significant differences among students who missed more than 18 days of school earned statistically significantly lower quality point averages compared to all other student groupings: students who missed 15.01-18 days of school (-.418, $p = >.001$), 12.01-15 days of school (-.625, $p = >.001$), 9.01-12 days of school (-.750, $p = >.001$), 6.01-9 days of school (-.777, $p = >.001$), 3.01-6 days of school (-.973, $p = >.001$), 0.01-3 days of school (-1.10, $p = >.001$), and students who missed zero days of school (-1.20, $p = >.001$). There was no significant difference between only four of the student

groupings. Students who missed zero days of school and students who missed 0.01-3 days of school (.106, p = .334); students who missed 6.01 days of school and 9.01-12 days of school (.027, p = .999); students who missed 9.01-12 days of school and students who missed 12.01-15 days of school (-.125, p = .318); and students who missed 12.01-15 days of school and 15.01-18 days of school (-.206, p = .054).

When examining significant differences in Keystone Exam scores based upon the number of student days absent, the data showed that there were significant differences among students who missed more than 18 days of school earned statistically significantly lower quality point averages compared to all other student groupings: students who missed 15.01-18 days of school (-.261, p = .003), 12.01-15 days of school (-.348, p = >.001), 9.01-12 days of school (-.573, p = >.001), 6.01-9 days of school (-.537, p = >.001), 3.01-6 days of school (-.675, p = >.001), 0.01-3 days of school (-.742, p = >.001), and students who missed zero days of school (-.88, p = >.001). There was no significant difference between only five of the student groupings. Students who missed zero days of school and students who missed 0.01-3 days of school (.142, p = .088); students who missed 0.01-3 days of school and students who missed 3.01-6 days of school (.066, p = .668); students who missed 3.01-6 days of school and students who missed 9.01-12 days of school (.102, p = .324); students who missed 6.01-9 days of school and 9.01-12 days of school (-.036, p = .995); students who missed 12.01-15 days of school and 15.01-18 days of school (.087, p = .933).

## Chapter 5: Recommendations

**Introduction**

Chapter 5 of this research study is an overview of this study's purpose and its statistical findings. Significant outcomes emerged through this study and their application to theory and practice are discussed. Most importantly, the research discussed within Chapter 5 relates the relevance that this study can have on leadership practices, implications on policies, and recommendations for further research. This study seeks to ascertain if student attendance at school affects academic achievement as measured by state mandated proficiency exams and earned quality point averages. The researcher studied sophomore students from three separate high schools located in Western Pennsylvania across three calendar years specifically examining if there is a relationship between student attendance, Keystone Exam scores in Literature, and earned quality point averages. Data was analyzed using a Spearman's Rank Correlation Coefficient analysis, Pearson Product-Moment Correlation Coefficient analysis, partial correlation analysis, and ANOVA test. This chapter is a synthesis of results pertaining to the relationship between student attendance and academic achievement.

**Restatement of Purpose of the Study**

The purpose of this study was to investigate the relationship between student attendance at school and academic achievement. Data was collected from three different suburban high schools in Western Pennsylvania. Indicators of academic achievement were measured by student performance on state level proficiency exams and earned quality point averages.

**Discussion**

This research study's data findings in Chapter 4 suggest many significant relationships between the variables utilized to determine if student attendance affects academic performance.

These findings included:  Each unit increase of student absence significantly affects student performance on state mandated proficiency exams; each unit increase of student absence significantly affects student earned quality point averages; chronically absent students earn significantly lower quality point averages compared to their school-aged peers; and chronically absent students score significantly lower on state mandated proficiency exams compared to their school-aged peers.

The significant relationships identified in this study expand upon the limited studies reviewed in Chapter 2 by Gottfried (2009) and Roby (2003) examining the relationship between student attendance and student performance on state proficiency exams, and Allensworth and Easton's (2007) research study examining the relationship between student attendance and earned quality point average.  Students within this study performed better academically (regardless of indicator) by having fewer absences from school.  The collected data demonstrates a significant relationship between the independent and both dependent variables, with student absences correlating to earned quality point average slightly more than scores on state mandated proficiency exams.  Figure 3 is a visual representation of the effect of student attendance on earned quality point average and Figure 4 represents the effect of student attendance on state mandated proficiency exams.  Figure 3 and Figure 4 both show a negative linear relationship when the number of student absences increase, earned quality point averages and scores on state mandated proficiency exams decrease steadily.
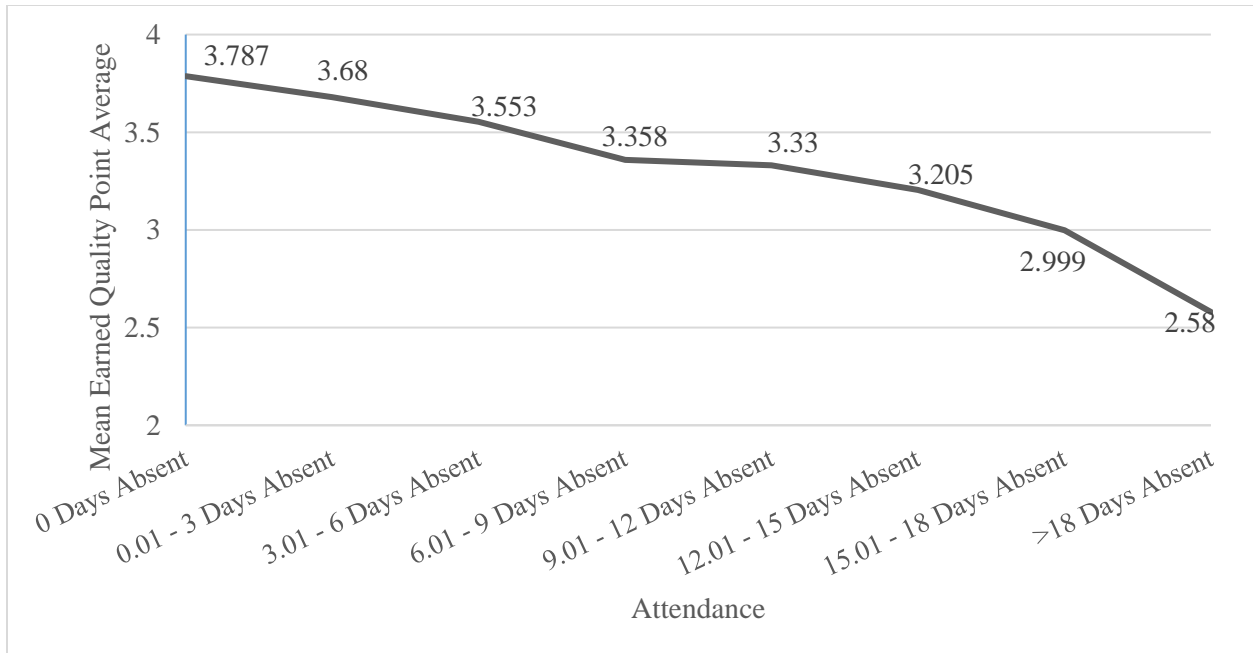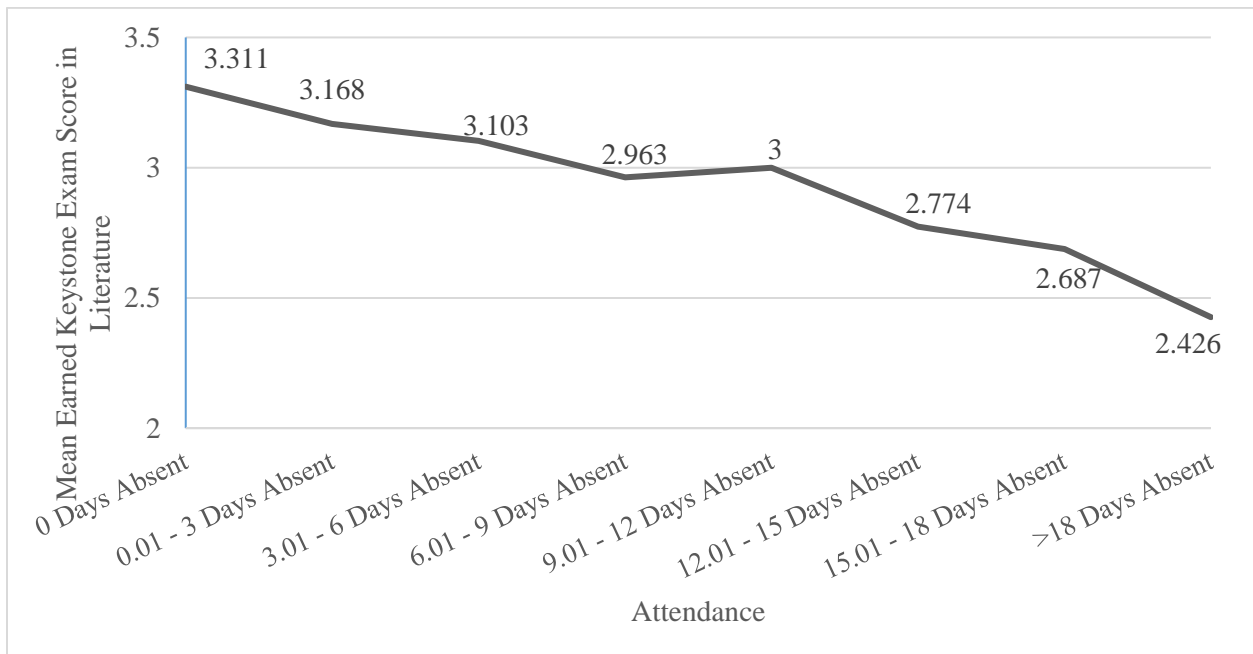
*Figure 3. Effect of student attendance on earned quality point average.*



*Figure 4. Effect of student attendance on state mandated proficiency exams.*

The reality of chronically absent students earning lower quality point averages and scoring lower on state mandated proficiency exams compared to their peers is concerning. Mahoney (2015) stated students who miss 18 or more school days are more susceptible to becoming disengaged from school, creating a cyclical effect of increased absences and increasing the instructional gap created when not being present for instruction. Neild and Balfanze (2006) discussed how the chronically absent are most likely to become school dropouts, causing harm not only to themselves, but also society (Netcoh, 2016). The findings of this study reinforce these studies, as demonstrated by the significant differences in academic achievement when comparing the chronically absent to their peers who attend school regularly. Of particular note, the present study further augments the existing literature as the sample included a diverse mix of schools that varied greatly on such factors as socioeconomic indicators, enrollment numbers, and student demographics.

The correlation between the studied variables is quite clear, and possessing the knowledge and understanding that students attending school regularly significantly affects academic performance is paramount to eliminating chronic absenteeism. Workable processes should be developed by legislators, policymakers, school administrators, and teachers to minimize the detrimental effects of poor student attendance. President Obama began this process at the national legislative level in December of 2015 when he passed the Every Student Succeeds Act (Dennis, 2017). State departments of education then leveraged this legislation to improve student attendance by electing to utilize chronic absenteeism rates as an indicator of success (Jordan & Miller, 2017). However, noticeable improvements have not been achieved when examining student attendance rates at the local level.

Local school boards who have the authority to institute policies and procedures to improve student attendance and decrease absenteeism could convene and revisit existing policy that may be tolerant of poor attendance habits, or create new workable processes that will improve current protocols when addressing attendance issues.  School board meetings are community events and open to the public.  Community stakeholders such as business owners, residents, parents, students, and any other vested community members can voice their opinions to board members and school districts' central level administrators offering insight to this problem from the community's perspective.  Understanding community members' insight may contribute to the creation of effective policy to improve student attendance rates.

Once awareness of the importance of attending school regularly at the community level is embraced, schools will be afforded more time to devote to instructional programming rather than obstacles created by student attendance issues.  Understanding the significant decrease in performance and school connectedness due to just one day of missed instruction could motivate parents and families to not contribute to their child's rate of absenteeism as Demir and Karabeyoglu (2016) thoroughly illustrated.  The "gradual disengagement" that Allensworth and Easton (2007) examined becoming a cyclical effect of students missing more and more school may be decreased or eliminated.

**Implications for Leadership and Practice**

Like any organization, schools cannot change or improve unless they have the capacity to do so.  Quality leadership is necessary to develop organizational and staff capacity to support initiatives related to improving student attendance.  School leaders must provide strategic direction that includes people, processes, policies, practices, and structures that guarantee the

continuous improvement of products and services (Schwahn & Spady, 2010). Without high quality school leaders, change initiatives to improve student attendance habits will be fruitless.

Relational leadership skills are a necessary component of the strategic design utilized to implement change when working to improve student attendance. Schwahn and Spady (2010) refer to relational leadership skills in *Total Leaders 2.0* as the "people" part of the process. People that comprise stakeholders within a school community must be motivated by the leader to provide the motivational energy to create the willing involvement of stakeholders. A relational leader within a school building will build a culture with appropriate expectations that engages stakeholders and supports the change required to improve student attendance.

The researcher deduced the need for professional development opportunities for school based employees related to local level attendance policies. Teachers and support staff should be aware of local policies and be firm in their implementation. Building based leaders should create building based student attendance initiatives and share their protocols with staff at the beginning of each school year. Expectations for implementation would need to be clearly outlined for individual staff members to practice in their classrooms throughout the academic year, and building based leaders would be charged with supervising staff members' individual practice as part of employee performance evaluations. This strategic design of a relational leadership initiative involves everyone in productive change, leading to empowerment.

These school based practices should include specific actions for school personnel to employ as students reach absentee benchmarks. For example, the researcher proposes that once a student reaches three unexcused absences from school, it should be required for a parent to participate in a meeting with school personnel to create a student attendance improvement plan. Consequences would be clear if the student continues to demonstrate frequent absences from

school, such as school discipline, loss of privileges, or possibly the school filing truancy with the local magistrate. Should frequent absences continue, administrators, school counselors, teachers, school social workers, and home and school visitors could make home visits to show the vested interest the school has in the student's education. All local resources should be exhausted when working with students and families in efforts to decrease student absenteeism. These practices would be proactive and identify possible individual student attendance problems early, and hopefully be an effective intervention to prevent students from reaching 18 days of absence to be deemed chronically absent. A consistent application of policy and guidelines within a school building may help the number of student absences decrease, and as the data demonstrates, academic success can increase.

School leaders should implement school based policies and procedures for promoting student attendance at the beginning of a student's kindergarten year in every school across the nation. Gottfried (2009) revealed that student dropouts could be identified as early as first grade within the Chicago Public Schools system from attendance patterns alone, and 90% of all dropouts could be identified by the second, third, and fourth, grades by studying student attendance patterns. This statistic should spark immediate attention to attendance policies and procedures at the elementary level. Habits and work ethic learned at the elementary level follow a student throughout their academic careers into the secondary school setting and beyond their school aged years.

In addition to concentrating efforts in individual school buildings, school leaders should involve stakeholders at the community level to improve school attendance. Mahoney (2015) illustrated family and community factors contribute to high rates of student absenteeism. If a family or community does not value education, it affects a student's rate of attendance.

Considering school leaders are a community resource, they should provide opportunities for parents and other community members to be educated about the value of education. Educating stakeholders and creating community awareness of how a lack of formal education negatively affects society could be beneficial to improving student attendance. Community meetings and events, newsletters, and communication to all stakeholders regarding attendance policies and information related to the consequences of poor student attendance that follow one throughout life could provide the spark to invigorate a renewed sense of importance regarding school attendance at the community level.

**Implications for Policy**

Findings of this research study demonstrate the need for policy related to student attendance. Jordan and Miller (2017) reported that 37 of the 50 states in our country elected to use student rate of chronic absenteeism as the fifth reportable indicator that is non-academic but demonstrates school quality or student success to comply with President Barrack Obama's Every Student Succeeds Act. The findings of this research study demonstrate why chronic absenteeism is such a popular indicator: Student attendance at school is directly related to student success.

Demir and Karabeyoglu (2016) stated tolerant policies or poor implementation of existing policies hurt student attendance rates. Federal legislation has been written and adopted at the state level to create attendance policy, but there is a need for existing policies to be reviewed at the local level for their effectiveness and if they meet the needs of stakeholders. Local policies should require practices within school buildings to not only address students with high rates of absenteeism, but also implement proactive approaches to encouraging good attendance patterns. Incentive programs such as recognition or rewards for students with perfect attendance could prove effective. Deterrents such as mandatory discipline for students who

violate local attendance policy is necessary within policy to serve as a deterrent to poor attendance. But, creating incentive for students to attend school through the possibility of positive reinforcement could promote genuine motivation for students to want to attend school regularly. Once clear and solid policies are created at the local level, school administrators should practice their application and communicate to students and parents their importance.

Sparks (2010) revealed the number of days a student is required to be absent from school to be deemed chronically absent is 18. Findings within this study suggest the definition of "chronically absent" could benefit from reexamination and possible revision. The average student score on state mandated proficiency exams dropped approximately one performance level when a student reached the 12.01 – 15 absence grouping, and the average earned quality point average dropped more than one letter grade when a student reached the 15.01 – 18 absence grouping. The data revealed a drop in academic performance utilizing two different indicators before a student reaches 18 days of absence. The data findings of this research study suggest a more appropriate number of student absences required to be deemed chronically absent may be 15. Table 13 and Table 14 represent the descriptive statistics for Research Question Four and Research Question Five, showing a drop in academic performance for both indicators once a student reaches an attendance cluster including 15 absences.

*Table 13. Research Question Four Descriptive Statistics*

| Attendance Groups | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval Lower | Upper | Min | Max |
|---|---|---|---|---|---|---|---|---|
| 0 Days Absent | 282 | 3.787 | .582 | .034 | 3.719 | 3.855 | .85 | 4.52 |
| 0.01-3 Days Absent | 751 | 3.680 | .588 | .021 | 3.638 | 3.722 | .89 | 4.58 |
| 3.01-6 Days Absent | 668 | 3.553 | .636 | .024 | 3.505 | 3.602 | .69 | 4.50 |
| 6.01-9 Days Absent | 499 | 3.358 | .697 | .031 | 3.296 | 3.419 | .00 | 4.47 |
| 9.01-12 Days Absent | 404 | 3.330 | .655 | .032 | 3.266 | 3.394 | 1.14 | 5.13 |
| 12.01-15 Days Absent | 246 | 3.205 | .739 | .047 | 3.112 | 3.298 | .81 | 4.45 |
| 15.01-18 Days Absent | 169 | 2.999 | .792 | .060 | 2.878 | 3.119 | .12 | 4.38 |
| >18 Days Absent | 412 | 2.580 | .900 | .044 | 2.492 | 2.667 | .00 | 4.25 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total | 3431 | 3.376 | .772 | .013 | 3.350 | 3.402 | .00 | 5.13 |

*Table 14. Research Question Five Descriptive Statistics*

| Attendance Groups | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval Lower | 95% Confidence Interval Upper | Min | Max |
|---|---|---|---|---|---|---|---|---|
| 0 Days Absent | 276 | 3.311 | .630 | .037 | 3.236 | 3.386 | 1.0 | 4.0 |
| 0.01-3 Days Absent | 741 | 3.168 | .675 | .024 | 3.120 | 3.217 | 1.0 | 4.0 |
| 3.01-6 Days Absent | 655 | 3.102 | .672 | .026 | 3.050 | 3.153 | 1.0 | 4.0 |
| 6.01-9 Days Absent | 492 | 2.963 | .683 | .030 | 2.902 | 3.024 | 1.0 | 4.0 |
| 9.01-12 Days Absent | 398 | 3.000 | .706 | .035 | 2.930 | 3.069 | 1.0 | 4.0 |
| 12.01-15 Days Absent | 244 | 2.774 | .787 | .050 | 2.675 | 2.873 | 1.0 | 4.0 |
| 15.01-18 Days Absent | 160 | 2.687 | .825 | .065 | 2.558 | 2.816 | 1.0 | 4.0 |
| >18 Days Absent | 380 | 2.426 | .864 | .044 | 2.339 | 2.513 | 1.0 | 4.0 |
| Total | 3346 | 2.981 | .757 | .013 | 2.955 | 3.006 | 1.0 | 4.0 |

**Recommendations for Further Research**

The review of literature and significant findings of this study demonstrate that further research examining the relationship between student attendance and academic achievement would be beneficial.  Although results indicate significant relationships between the variables, the sampled population was limited geographically.  The nationwide average for chronic absenteeism is 17%, and the state of Pennsylvania, where this study's population was sampled, averages 16%.  The sample population had an average rate of 12% chronically absent.  A different sampled population representing the chronically absent closer to the nationwide average percentage, possibly from a different state, or even samples from different geographical regions such as the southwest or northeast could prove useful in the examination of these relationships.  Furthermore, the sampled population of this research study consisted of only students from

suburban area schools.  A similar study consisting of a sample population from urban or rural areas could be telling.

This study also utilized entire classes of students during their sophomore year of high school.  Students were not segregated or organized into subgroups of any kind.  It may prove beneficial to conduct similar studies concentrating on students segregated by gender, race, socio-economic status, gifted, special education, or even student choice of schedule and the academic level of their classes.  Examining and comparing these subgroups of students may provide insight to policymakers and school administrators when devising processes and strategies to improve attendance and decrease absences.  Additional studies that examine subgroups will afford administrators, teachers, and other stakeholders with more tools to help be the change needed to address chronic absenteeism.

Furthermore, this study utilized student performance on the Keystone Exam in Literature as an indicator of academic performance due to the grade level of administration.  Utilizing different grade levels where Algebra and Biology are the course ending Keystone Exams could be telling.  Not only would the researcher examine if attendance effects Algebra and Biology performance as this study examined literature performance, but could also determine if student age produces similar results while conducting a similar study.

**Summary and Conclusion**

The researcher of this study utilized quantitative testing methods to determine if there was a significant relationship between student attendance at school and academic performance as measured by earned quality point averages and state mandated proficiency scores.  Through multiple forms of quantitative data analysis, the researcher concludes there is a significant relationship between student attendance and academic achievement.  Students with fewer

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absences earn higher quality point averages and score better on state mandated proficiency exams. The researcher also discovered that the definition of "chronically absent" could benefit from revision. Currently, students are required to be absent 18 days within an academic year to be deemed chronically absent. However, noted decline in academic performance once a student reaches 15 days of absence was evident when examining both earned quality point averages and scores on state mandated proficiency exams.

This research study illustrates a significant relationship between student attendance and academic achievement. Students attending school is important for them to succeed as individuals. Devadoss and Foltz (1996) related human capital theory to formal education as being highly instrumental to improve the productive capacity of an entire population. If students succeed as individuals, they will become producers to society rather than a hinderance. Additional research on the relationship between student attendance and academic achievement is warranted. As a society, it is imperative new legislation and processes are developed and implemented appropriately in our schools to improve student attendance at school.

In conclusion, the researcher discovered the United States spent $649 billion dollars on K-12 education in 2015 (Burnette, 2018). A monetary investment of this size in formal education by the federal government demonstrates human capital theory is founded in education: Education is important to not only the quality of life for individuals, but also the betterment of society. It is shameful that student absenteeism prohibits 17% of this nation's school aged children from maximizing academic performance. A free and appropriate public education is provided for every school aged child in this country, but for them to take advantage of it, they must attend school regularly.

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**APPENDIX A**

**POINTPARK**
**UNIVERSITY**

Office of the Provost

January 29, 2019

REF:  William McGahee IRB Proposal

Dear Mr. McGahee:

The IRB Committee has reviewed your proposal to conduct research under the title "The Importance of Attending School: A Quantitative Analysis Examining the Relationship of Student Attendance to Academic Achievement."  I am pleased to report that the IRB has approved your study, and you may begin to recruit participants to collect data for analysis. At this time you are approved to recruit participants and collect data for up to one year.

If at any time you decide to change your methodology or any other aspects of your IRS-approved proposal, please contact the IRB for review of any such revisions before moving forward with the changes.

We wish you the best of luck with your research.

Best Wishes,

Brent Dean Robbins, Ph.D.
Chair, Institutional Review Board

BDR:jmr

C:  Dr. Tara Abbott