

School-Wide Implementation of Positive Behavior Interventions and Supports and the Impact on
Student Absences, Office Discipline Referrals, and Suspensions in Two Suburban Middle
Schools

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ABSTRACT

The literature shows that school attendance matters. Time engaged with instruction is highly correlated to student achievement (Brophy, 1988; Fisher et al., 2015; Northwest Regional Educational Laboratory, 2001). However, students who are suspended and expelled from school lose instructional time in the classroom (Belway, Hodson, Losen, Keith II, & Morrison, 2015; Scott & Barrett, 2004). Suspensions result in decreased student attendance by removing the student from the learning environment (Noltemeyer, Ward, & McLoughlin, 2015). The use of in-school suspension (ISS), out-of-school suspension (OSS), and expulsion are referred to as exclusionary discipline (Belway et al., 2015). Educational leaders are unintentionally contributing to the achievement gaps that the No Child Left Behind (NCLB) legislation intended to close by not addressing student suspensions and expulsions (Belway et al., 2015). This study used quantitative data with an *ex post facto* design to determine if the implementation of school-wide positive behavioral interventions and supports (PBIS) resulted in a change in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. Two suburban middle schools in one Virginia school division were included in this study. Following the conceptual framework for this study, it was anticipated that implementation of PBIS would decrease student absences, office discipline referrals, and suspensions.

The results of the study revealed that there was a reduction in office discipline referrals following the first year of implementation in the PBIS Middle School. When comparing a school that implemented PBIS to one that did not, this study found that student suspensions decreased by the second year of implementation in the school that implemented PBIS. This study also yielded other findings that were inconsistent with existing research. The results of this study are of significance for education leaders who want to decrease student office discipline referrals and suspensions.

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GENERAL AUDIENCE ABSTRACT

The literature shows that school attendance matters where time engaged with instruction is highly correlated to student achievement (Brophy, 1988; Fisher et al., 2015; Northwest Regional Educational Laboratory, 2001). However, a common means of dealing with student misbehavior in school is the issuance of a referral to the office that may result in a student suspension (Belway, Hodson, Losen, Keith II, & Morrison, 2015; Scott & Barrett, 2004). Office discipline referrals and suspensions result in decreased student attendance by removing the student from the learning environment (Noltemeyer, Ward, & Mcloughlin, 2015). Educational leaders are unintentionally contributing to gaps in student achievement by removing students from the learning environment. This study investigated whether the implementation of a behavioral framework, school-wide positive behavioral interventions and supports (PBIS), resulted in a change in student absences, office discipline referrals, and suspensions in one middle school and explored what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. Two suburban middle schools in one Virginia school division were included in this study. It was anticipated that implementation of PBIS would decrease student absences, office discipline referrals, and suspensions.

The results of the study revealed that there was a reduction in office discipline referrals following the first year of implementation in the school implementing PBIS. When comparing a school that implemented PBIS to one that did not, this study found that student suspensions decreased in the PBIS school by the second year of implementation. This study also yielded other findings that were inconsistent with existing research. The results of this study are of significance for education leaders who want to decrease student office discipline referrals and suspensions.

DEDICATIONS

As this journey comes to an end, there are many individuals that I would like to thank who have had an influence in my life and throughout this doctoral process. First, I dedicate this journey to God. There were many days and nights that I had to turn to prayer and ask for guidance and strength. I placed my faith in His hands. He never let me down and at times carried me through the difficult hurdles.

Next, I dedicate this to my family. To my late father, Edward Cook, who taught me that people and relationships matter, tenacity will move you forward, and that it is important to have a strong work ethic. I miss you every day and know that you have been watching from above as I have engaged in this process. To my mother, Barbara Cook, who constantly showered me with love and support, encouraged me when I was down, and reminded me that all things are possible. Mom, you and Dad provided a solid upbringing that has made me into the individual that I am today. I love you both...more than the universe! To my sister, Karen Stalnaker, thank you for encouraging me to have big dreams for they will become a reality! I love you sissy! Finally, to my husband and the love of my life, Chad Perkins, thank you for the countless number of sacrifices that you have made as I have worked to finish this journey. You have spent nights and weekends at home alone while I completed my degree and you never complained once! Thank you for your unwavering support. I love you so very much and can't wait to spend more time together again!

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CHAPTER ONE

INTRODUCTION

The Elementary and Secondary Education Act (ESEA) (PL 89-10) and the subsequent reauthorizations continue to focus on challenging academic standards and student achievement (Duncan, 2015). The literature reveals that student discipline referrals and subsequent suspensions and expulsions lead to a loss of instructional time (Noltemeyer, Ward, & Mcloughlin, 2015; Scott & Barrett, 2004). However, the loss of instructional time negatively impacts student achievement (Noltemeyer et al., 2015). At the same time, research shows that a high correlation exists between the time students are engaged in instruction and student achievement (Brophy, 1988; Fisher et al., 2015; Northwest Regional Educational Laboratory, 2001). A solution to preventing student suspensions, stemming from research, is the implementation of a school-wide behavior framework, Positive Behavior Interventions and Supports (PBIS). Positive behavior interventions and supports is a proactive framework with an instructional component, which includes teaching student behavioral expectations in the school environment using methods similar to teaching academic contents. The research shows evidence to indicate that PBIS can lead to a decrease in student office discipline referrals and suspensions and an increase in attendance and classroom instructional time (Horner et al., 2009; Noltemeyer et al., 2015; Scott & Barrett, 2004; Taylor-Greene et al., 1997). This study used quantitative data with an *ex post facto* design to determine if school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS in a suburban school division in Virginia.

Overview of the Study

This quantitative study used an *ex post facto* design to determine if school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. Two suburban middle schools in one Virginia school division

were included in this study. One middle school implemented school-wide PBIS. The other middle school did not implement PBIS.

Historical Perspective

Accountability in education. The ESEA (PL 89-10) was signed into law on April 11, 1965. Nelson (2016) quoted President Johnson when he said that the ESEA was “the most sweeping education bill ever to come before Congress” (p. 358). The establishment of the ESEA marked the federal government’s commitment to quality and equality for students attending public schools (Nelson, 2016). Under the Reagan administration, Terrell Bell, Secretary of Education, established a committee that published a report entitled *A Nation at Risk*. The committee’s purpose was to investigate if poor public education was a contributing factor to unemployment and loss of jobs for Americans (Good, 2010). The report drew attention to the declining performance of students in America as compared to other countries (Derthick & Dunn, 2009). *A Nation at Risk*, along with the achievement gap amongst white and minority students, brought about a push for accountability of public schools in the form of content standards and testing (Derthick & Dunn, 2009).

State education agencies were compelled to develop accountability systems with the reauthorization of the ESEA (Derthick & Dunn, 2009). The accountability systems filtered down to school divisions and individual schools. Failure for schools to meet identified targets would result in sanctions (Derthick & Dunn, 2009). The No Child Left Behind Act (NCLB) (PL 107-110) was established “to close the achievement gap with accountability, flexibility, and choice, so that no child is left behind” (NCLB, 2002, p. 1). Dee and Jacob (2011) state that this reauthorization expanded the federal government’s role in public education by requiring the development of challenging standards for students that are measured by annual assessments. The goal for all students was to reach proficiency in reading and mathematics.

The ESEA was reauthorized again on December 10, 2015. The Act, now referred to as the Every Student Succeeds Act (ESSA) (PL 114-95), continues to require accountability and challenging academic standards; the act will not go into effect until the 2017-2018 school year (Duncan, 2015). Duncan (2015) noted that the ESSA legislation would continue to require local leaders to improve student achievement and ensure that students make progress. Until the 2017-

2018 school year, NCLB continues to define the accountability standards for schools and students.

Student attendance. Ginsburg, Jordan, and Chang (2014) found that student attendance is a national problem. Their research suggests that poor attendance is associated with poor academic achievement (Ginsburg, Jordan, & Chang, 2014). Gottfried (2010) found that student attendance is a predictor of student grade point averages and reading and mathematics performance. Roby (2004) reported that there is a statistically significant, positive relationship between student attendance and student achievement as measured with the Ohio Proficiency Tests. As Ginsburg et al. (2014) suggest, student attendance does matter.

Student discipline. Student suspensions and expulsions for misbehavior result in absences or the removal of the student from the academic learning environment for a specified period, thus excluding the student from classroom instruction (Belway, Hodson, Losen, Keith II, & Morrison, 2015). Research shows that student achievement is negatively impacted by high suspension rates (Arcia, 2006; Noltemeyer et al., 2015; Rausch & Skiba, 2004). Instructional leaders can decrease student suspensions and increase instructional time in the classroom with the school-wide implementation of PBIS.

PBIS. Positive behavior interventions and supports is a proactive framework with an instructional component, which includes teaching student behavioral expectations in the school environment using methods similar to teaching academic contents. Sugai et al. (2000) define PBIS as “the application of positive behavioral interventions and systems to achieve socially important behavior change” (p. 133). The PBIS problem-solving framework is not a curriculum, a program, or a scripted intervention. The PBIS framework emphasizes a school-wide system of support that includes proactive strategies for defining, teaching, and supporting appropriate student behaviors (PBIS.org). Use of the PBIS framework is designed to enhance the implementation of evidence-based interventions along a continuum designed to achieve academic and behavioral outcomes for students (Sugai & Simonsen, 2012). There are three preventative tiers/levels of the continuum when implementing PBIS. The primary level/Tier I of the continuum focuses on proactive interventions and the direct teaching of behavioral expectations to meet the needs of all students. The direct instruction takes place in the classroom and non-classroom settings (i.e., restrooms, hallways, and buses). Not all students will respond to the instruction and interventions provided in Tier I. Some students may need additional small

group intervention. The interventions are provided at the secondary level/Tier II. Finally, students who do not respond to the interventions at the primary level/Tier I and secondary level/Tier II may require more individualized support at the third level. Interventions at this level are specialized and individualized for specific students. (Scott & Barrett, 2004)

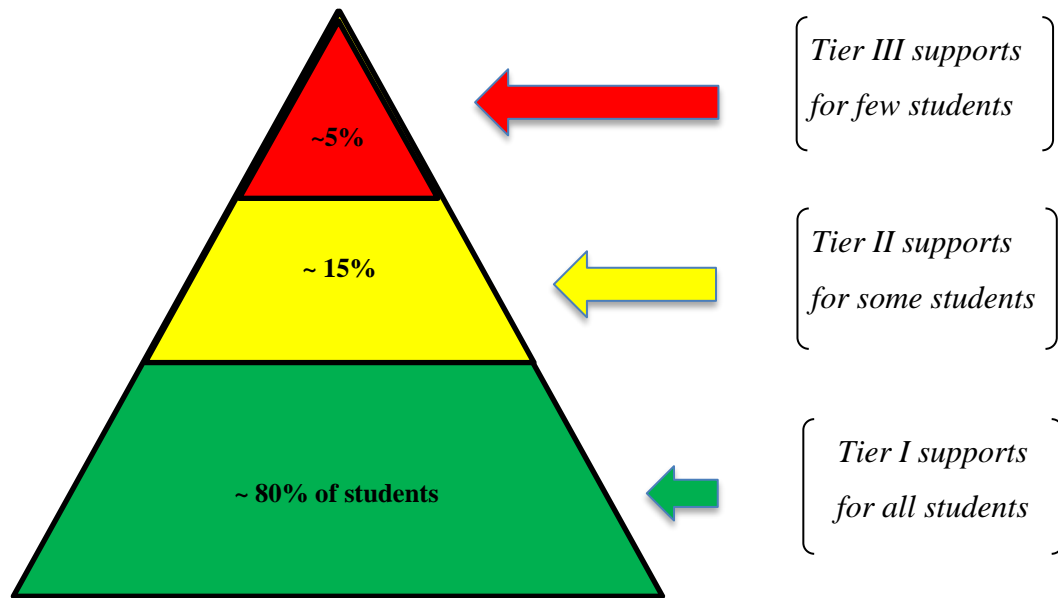


Figure 1. Continuum of Interventions for PBIS. This figure illustrates the three tiers of interventions when implementing PBIS. Adapted from PBIS.org.

Impact on school leadership. The ESEA and the subsequent reauthorizations continue to focus on challenging academic standards and accountability. These standards hold educational leaders accountable for the achievement of all students along with creating and maintaining school environments that are safe (Davis, Darling-Hammond, LaPointe, & Meyerson, 2005). Leaders in public education are unintentionally contributing to the achievement gaps that the NCLB legislation intended to close by not addressing student suspensions and expulsions (Belway et al., 2015).

Statement of the Problem

The literature shows that students who are suspended and expelled from school lose instructional time in the classroom (Belway et al., 2015; Scott & Barrett, 2004). According to Noltemeyer, Ward, and McLoughlin (2015) suspensions result in decreased student attendance by removing the student from the learning environment. The use of in-school suspension (ISS),

out-of-school suspension (OSS), and expulsion are referred to as exclusionary discipline (Belway et al., 2015). Losinski, Katsiyannis, Ryan, and Baughan (2014) found that exclusionary discipline results in increased dropout rates, decreased graduation rates, and juvenile delinquency. They also found that exclusionary discipline adversely impacts student achievement. Additional studies have also shown that suspensions led to a decrease in academic performance (Arcia, 2006; Noltemeyer et al., 2015, Rausch & Skiba, 2004). Belway, Hodson, Losen, Keith II, and Morrison (2015) found that the average length of a student suspension in the United States is 3.5 days. Missing three or more days of school in the month before the National Assessment for Educational Progress (NAEP) resulted in lower reading and mathematics scores for students based on research conducted by Ginsburg et al. (2014). The problem facing educational leaders may be that they are unintentionally contributing to the achievement gaps that the NCLB legislation intended to close by not addressing student suspensions and expulsions (Belway et al., 2015).

Significance of the Study

When students misbehave, school leaders use suspensions as a form of punishment to deter student misbehavior (Noltemeyer et al., 2015). Losen and Skiba (2010) noted that there has been a rise in student suspensions since the 1970s. When students are suspended, they are absent from classroom instruction. As mentioned previously, educational leaders' use of suspensions may be unintentionally contributing to the achievement gaps in schools. A proactive alternative to reduce suspensions and expulsions is the implementation of PBIS. There is evidence to suggest that implementation of PBIS has resulted in decreased office discipline referrals (ODRs), suspensions, and expulsions (Caldarella, Shatzer, Gray, Young, & Young, 2011; Scott & Barrett, 2004; Taylor-Green et al., 1997) and increased time for student engagement in instruction (Lassen, Steele, & Sailor, 2006; Scott & Barrett, 2004). Research shows that time engaged with instruction is highly correlated to student achievement (Brophy, 1988; Fisher et al., 2015; Northwest Regional Educational Laboratory, 2001). Much of the research on PBIS has been conducted at the elementary level with fewer studies at the middle and high school level. This study is of significance for educational leaders who want to know if the school-wide implementation of PBIS resulted in an increase in student attendance and a

decrease in student office discipline referrals and suspensions in a suburban middle school in Virginia.

National perspective. Belway et al. (2015) found that 3.5 million students in the United States were suspended from school during the 2011-2012 school year. While there is no census data available to identify what percentage this equates to for the total school-age population, Belway et al. (2015) put this in perspective by suggesting that the number of students suspended during the 2011-2012 school year could fill all of the stadium seats for the first 45 Super Bowl games. Research shows that student attendance matters (Ginsburg et al., 2014). Ginsburg et al. (2014) found that poor attendance is associated with low academic achievement. Another study conducted by Losinski et al. (2014) concluded that academic achievement is impacted when students are absent from school. When students are suspended and expelled for misbehavior, it results in absences from classroom instruction. The use of exclusionary discipline is contributing to the achievement gaps that the NCLB legislation and the newly reauthorized ESEA intended to close (Belway et al., 2015).

State and local perspective. Governor McAuliffe announced a new initiative in Virginia entitled Classrooms not Courtrooms. The Classrooms not Courtrooms initiative tasked multiple agencies with reducing student suspensions, expulsions, and student referrals to law enforcement (Staples, 2015). The research of Losinski et al. (2014) found that exclusionary discipline results in increased dropout rates, decreased graduation rates, and juvenile delinquency. Their research also revealed that exclusionary discipline adversely impacts student achievement. The Center for Public Integrity released a report in April of 2015 that provided an analysis of data obtained by the U.S. Department of Education Office for Civil Rights (OCR) on the number of students that receive referrals to law enforcement agencies from schools (Staples, 2015). The Commonwealth of Virginia had the highest number of student referrals to law enforcement agencies when compared to the national average. Virginia's referral rate was 15.8 students per 1,000, whereas the national average was six students per 1000 (Staples, 2015). The NCLB legislation requires public educators to close achievement gaps that existed in student achievement. Exclusionary discipline practices contribute to the achievement gaps by excluding students from instruction (Belway et al., 2015). Educational leaders are held accountable for the achievement of all students along with creating and maintaining school environments that are safe (Davis et al., 2005).

Purpose of the Study

The purpose of this study was to determine if school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. This study used quantitative data with an *ex post facto* design to answer the research questions.

Justification of the Study

Educational leaders are held accountable for the achievement of all students along with creating and maintaining school environments that are safe (Davis et al., 2005). The ESEA reauthorizations continue to require accountability and the expectation that students meet challenging academic standards (Duncan, 2015). School-wide implementation of PBIS is a means to decrease student office discipline referrals and suspensions, increase student attendance and classroom instructional time, and increase student achievement while improving the school climate (Horner et al., 2009; Noltemeyer et al., 2015; Scott & Barrett, 2004; Taylor-Greene et al., 1997).

Conceptual Framework

The conceptual framework for this study was developed from a review of the literature on attendance, discipline, suspensions, and implementation of school-wide PBIS. The research shows that students who are suspended and expelled from school lose instructional time in the classroom (Belway et al., 2015) resulting in decreased student attendance (Noltemeyer et al., 2015). This loss of instructional time leads to poor academic performance (Ginsburg et al., 2014). The framework for this study suggests that when school leaders implement the PBIS framework, behavior expectations are explicitly taught to students (Horner & Sugai, 2000). When the behavior expectations are taught and reinforced, they result in decreased student suspensions (Scott & Barrett, 2004; Taylor-Green et al., 1997), increased student attendance (Scott & Barrett, 2004), and increased classroom instructional time (Scott & Barrett, 2004). Figure 2 illustrates that this study focused on the three highlighted areas of the conceptual framework to determine if the school-wide implementation of PBIS resulted in a decrease in

student office discipline referrals, suspensions and absences thus creating increased student exposure to classroom instruction.

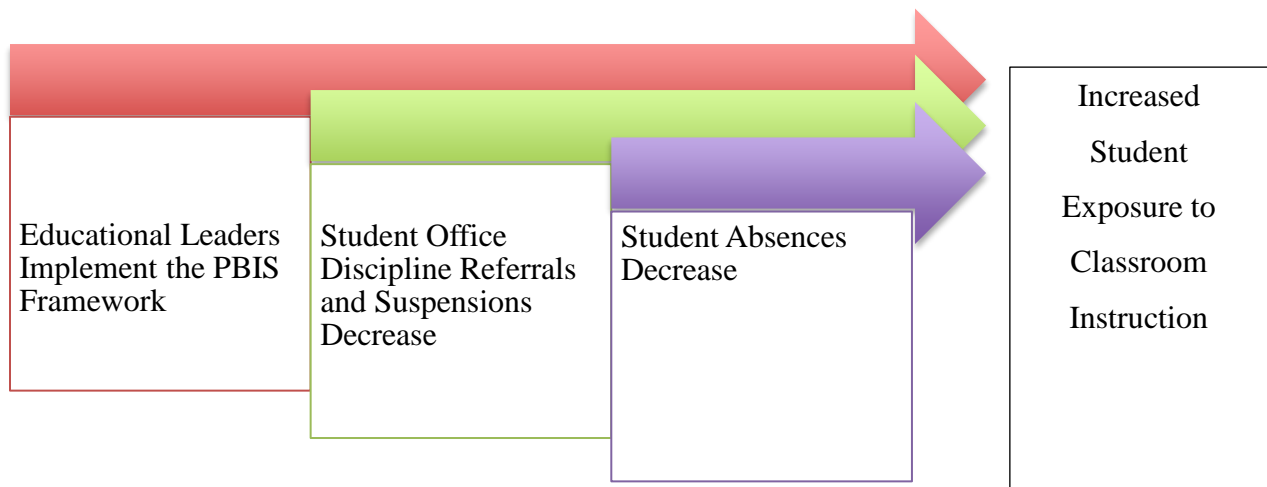


Figure 2. Conceptual Framework for Implementation of PBIS on Student Office Discipline Referrals, Student Suspensions, and Absences. This figure illustrates the conceptual framework of connecting the implementation of PBIS to the decrease in student office discipline referrals, suspensions, and absences.

Research Questions

This study answered the following questions:

1. What change, if any, in student absences, resulted after the school-wide implementation of PBIS?
2. What change, if any, in office discipline referrals, resulted after the school-wide implementation of PBIS?
3. What change, if any, in student suspensions, resulted after the school-wide implementation of PBIS?
4. What difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS?

Definition of Terms

Key vocabulary terms were used throughout this study. To facilitate understanding, they are defined for the reader.

Absence. A missed portion or day(s) of school for a student.

Attendance. The number of days a student attends school each year.

Dropout. A student who left high school between the beginning of one school year and before the beginning of the following year without earning a diploma or an alternative such as the General Educational Development (GED) (Chapman, Laird, Ifill, & KewalRamani, 2011).

Every Student Succeeds Act (ESSA). The reauthorization of the No Child Left Behind legislation that was signed into law on December 10, 2015.

Evidence-based interventions. An intervention that has sufficient evidence to support its use as effective (Horner, Sugai, & Anderson, 2010).

Exclusionary discipline. The discipline of a student that results in a suspension or expulsion. The discipline results in the removal of the student from academic instruction (American Academy of Pediatrics, 2003).

Expulsion. The long-term discipline of a student that results in the removal from academic instruction (American Academy of Pediatrics, 2003).

No Child Left Behind (NCLB). The reauthorization of the ESEA that brought about increased accountability for public schools (Derthick & Dunn, 2009).

Office discipline referrals (ODRs). A document that is completed and used to track a referral for a student to a discipline office or administrator for disciplinary action for behaviors that range from mild to severe (Skiba & Rausch, 2006).

Positive behavior interventions and supports. A problem-solving framework that enhances the implementation of evidence-based interventions along a continuum that are designed to achieve academic and behavioral outcomes for students (Sugai et al., 2000).

Suspension. The discipline of a student that results in the removal from academic instruction (American Academy of Pediatrics, 2003).

Limitations

There are conditions in this study for which the researcher did not have control. The limitations of this study may limit the scope and generalizability of the results. The limitations of this study were as follows.

1. The participants in the study came from the same geographic region.
2. Random assignment of subjects to the school implementing school-wide PBIS was not possible.

3. The researcher did not have control over the school climate and culture for the middle schools selected for this study.
4. The phenomenon being studied by the researcher already occurred. The researcher did not control or manipulate the interventions included in the study.
5. The school division included in this study implemented a new student information system in the 2015-2016 school year that required a different level of reporting student absences, office discipline referrals, and suspensions. For this reason, data for the 2015-2016 school year were excluded from the study.
6. The school division included in this study did not have a division-level leadership team in place to lead implementation of PBIS.

Delimitations

There were conditions in this study for which the researcher had control. The delimitations in this study were as follows.

1. The time of the study was limited to the 2012-2013, 2013-2014, 2014-2015, and 2015-2016 school years.
2. The sample of the study was limited to one suburban school division in Virginia. Two middle schools from the school division were selected based upon socioeconomic status.
3. The researcher had a preconceived bias toward the outcomes of the study.

Organization of the Study

This study consists of five chapters. Chapter One provided an introduction and overview of the study, a historical perspective, statement of the problem, the significance of the study, purpose and justification of the study, the conceptual framework, research questions, definition of key vocabulary terms, limitations and delimitations, and a summary of the chapter. Chapter Two included a review of the literature on attendance, discipline, and school-wide implementation of PBIS. The purpose of the literature review and the search process used was also described in Chapter Two. Chapter Three briefly revisited the purpose of the study then discussed the research design and justification, the research questions, and the site/sample selection. Chapter Three also discussed the data collection and gathering procedures, data

treatment and management, data analysis techniques, and the timeline for the study. Chapter Four restated the purpose of the study and reported the findings following the analysis of the data. Chapter Five restated the purpose of the study, summarized and discussed the findings, identified the implications for practitioners, and presented overall conclusions. Chapter Five concluded with suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

Purpose of Literature Review

The purpose of the literature review for this study was to search the past and current research on student attendance, suspensions, and the implementation of school-wide PBIS. The literature review revealed trends that have emerged and highlighted areas or gaps in the literature for future research. The research relating to this topic were explored and shared in the sections below.

Search Process

A variety of methods was employed to obtain a comprehensive search of the literature in the field regarding attendance, suspensions, and school-wide implementation of PBIS. The primary method for obtaining literature was through online databases. The Virginia Polytechnic Institute and State University library search engine, Summon, was used along with EBSCOhost and Google Scholar. The search engines yielded thousands of books, scholarly journals, and dissertations relating to these topics. Search terms were refined to include only peer-reviewed journal articles and publications from 2005 to the present. Literature was also obtained by the cited works of others and may include notable works that date before 2005. Search terms included various combinations of the following: *attendance, school-wide positive behavior interventions and supports, behavior support, suspensions, discipline, office discipline referrals, and school-wide systems of support*. Additionally, websites were utilized to gather information such as the National Technical Assistance Center for Positive Behavior Interventions & Supports (www.pbis.org).

Attendance Matters

Research shows that student attendance matters. Roby (2004) conducted a study to investigate the relationship between student attendance and achievement. This study was conducted in Ohio and examined student performance on the Ohio Proficiency Tests taken by students in grades four, six, nine, and twelve. Roby (2004) compared student achievement outcomes to attendance averages to determine if a correlation existed between school attendance

and student achievement. All data were obtained from the Ohio Department of Education's (ODE) website. The sample for this study included 3,171 schools that had grades four, six, nine, and twelve. Roby (2004) found a statistically significant relationship that was moderately strong between student attendance and achievement on the Ohio Proficiency Tests. Roby concluded that the more students attended school the better they performed on the Ohio Proficiency Tests.

Gottfried (2010) conducted a longitudinal study to test the hypothesis that student attendance in school would affect learning outcomes in a positive manner. Data were collected from the 1994-1995 school year through the 2000-2001 school year. In total, there were five cohorts of students from elementary and middle school. The results of Gottfried's work revealed that student attendance could predict student grade point averages and performance in reading and mathematics.

Ginsburg et al. (2014) conducted an analysis of the data from the 2013 National Assessment for Educational Progress (NAEP). The NAEP is administered every two years in all 50 states to a sample of fourth and eighth-grade students and includes questions regarding student attendance. Ginsburg et al. (2014) found that student attendance is a national problem where one in five students missed three or more days of school the month before the administration of the NAEP. Missing three or more days of school in the month before the NAEP resulted in lower reading and mathematics scores for students based on their analysis. Ginsburg et al. (2014) also found that attendance contributed to the achievement gap for students in poverty and communities of color.

Student Discipline

A consequence for student misbehavior in the field of education includes the use of suspensions (Noltemeyer et al., 2015). The rationale for suspending students who misbehave is that it will serve as a deterrent for future negative behaviors (Noltemeyer et al., 2015; Sugai & Horner, 2006). Suspensions may result in a reduction of behavior; however, research shows that the reduction tends to be temporary, the misbehaviors return (University of Oregon, 2001) and, for some students, the behaviors increase in intensity and frequency (Sugai & Horner, 2006).

A student suspension may take the form of an in-school suspension (ISS), out-of-school suspension (OSS), or expulsion. All three forms of suspensions result in the removal of the

student from the academic learning environment for a specified period. The suspension thus excludes the student from classroom instruction (Belway et al., 2015).

Arcia (2006) conducted a study to analyze the impact that student suspensions had on student achievement over a three-year period between students who had and had not been suspended. The study utilized data from a large, urban school division. Arcia (2006) found that over a three-year period, students demonstrated fewer achievement gains the more they were suspended and that students who had lower achievement scores were suspended more than students with higher achievement scores. There was also a strong association between student suspensions and dropout rates. Students who had more days of suspension had a higher percentage of dropping out of high school.

Using information collected from the U.S. Department of Education, Rausch and Skiba (2004) examined discipline data from 18 of the largest school divisions in the nation. Their analysis focused on middle school data and revealed several trends. They found that the use of exclusionary discipline did not result in a decrease of student disruptions nor did it deter misbehavior of other students. Similar to Arcia's (2006) results, they found that, regarding student achievement, students in schools with high suspension rates performed lower on state achievement tests than those in schools with low suspension rates.

Noltemeyer et al. (2015) conducted a meta-analysis on the research regarding student suspensions between the years of 1986 and 2012. The meta-analysis revealed that suspensions resulted in decreased student attendance. Suspensions remove a student from the learning environment and contribute to academic disengagement. Student suspensions were higher in schools with a high percentage of students from low-income families and schools in urban areas. Multiple studies revealed that there was an inverse relationship between student suspensions and student academic performance; more student suspensions were related to lower student academic performance. Students suspended were also found to be more at risk for dropping out of high school. As part of their meta-analysis, Noltemeyer et al. (2015) looked more closely at certain characteristics associated with suspensions such as the type of suspension (i.e., ISS, OSS, and ISS and OSS combined). All three forms of suspension resulted in an inverse relationship between student suspension and academic achievement that was statistically significant. The OSS data showed a stronger association to student achievement than ISS. Noltemeyer et al. (2015) suggest that practitioners find alternatives to suspensions. They suggest identification of

proactive, preventative measures, especially considering that most students are suspended for minor offenses.

Multiple researchers recommend implementation of a school-wide framework for teaching positive behavioral expectations through PBIS as an alternative to suspending students for misbehavior (Andreou, McIntosh, Ross, & Kahn, 2015; Noltemeyer et al., 2015; Scott & Barrett, 2004; Gage, Sugai, Lewis, & Brzozowy, 2015). The PBIS framework requires a change to the learning environment. School staff that implement PBIS provide all students with explicit instruction of prosocial skills where multiple opportunities are provided for practice, and reinforcement is applied when appropriate skills are displayed (Sugai & Horner, 2006). The PBIS framework emphasizes prevention and remediation of problem behaviors that are applied school-wide for all students as well as individualized interventions for others (Horner et al., 2004).

PBIS

The concept of PBIS originated in the 1980s where research was conducted to identify interventions for students with emotional-behavioral disorders (Baker & Ryan, 2014). The research findings suggested that the use of evidence-based practices paired with explicit and sequential teaching of new behaviors and monitoring data to track progress prevented unwanted student behaviors (Baker & Ryan, 2014). Based on years of research, PBIS has evolved into a proactive, noncurricular, universal framework that utilizes behavioral, social learning, and organizational behavioral principles. The concept of this logic was adapted from a public health model where multiple behavior support systems are needed along with investment in prevention to create safe and encouraging school environments. The PBIS framework is comprised of prevention-based supports along a three-tiered continuum (Simonsen, Jeffrey-Pearsall, Sugai, & McCurdy, 2011). Implementation of PBIS takes place school-wide including classrooms, non-classrooms, and individual settings (Mathews, McIntosh, Frank, & May, 2014). The three-tiered framework includes (a) support for all students in the school environment, (b) interventions that are graduated and increase with intensity and specificity, and (c) the use of data on student responsiveness to evaluate and make problem-solving decisions (Simonsen et al., 2011). The continuum provides the opportunity to match the intensity of the intervention with the intensity of the problem behavior (Cohen, Kincaid, & Childs, 2007).

Tier I. The primary tier of PBIS provides universal interventions or strategies to all students in the school environment (Andreou et al., 2015; Simonsen, Britton & Young, 2010). The interventions are proactive behavior management practices (Simonsen et al., 2011) intended to prevent new instances of problem behavior (Flower, McDaniel, & Jolivette, 2011). School staff identifies school-wide expectations that are defined contextually and worded in a positive manner. The expectations are displayed throughout the school environment in the form of a matrix or matrices. The matrices provide specific examples of expectations in the classroom and non-classroom settings (Andreou et al., 2015). School staff explicitly teach the school-wide expectations to all students. Andreou, McIntosh, Ross, and Kahn (2015) state that "explicit teaching includes targeted lessons, demonstrations in settings where problem behaviors often occur, and practice with performance feedback" (p. 157). Students who demonstrate school-wide expectations receive reinforcement, external rewards, and high rates of detailed feedback. Tier I also involves the establishment of instructional consequences when students violate the school-wide expectations.

Approximately 80% of the school student population will respond favorably to the proper implementation of interventions and supports provided in Tier I. Students who are not successful in this tier are provided additional supports in Tier II. Tier II supports are intended to complement the universal school-wide tier (Andreou et al., 2015).

Tier II. Simonsen, Jeffrey-Pearsall, Sugai, and McCurdy (2011) report that approximately 15% of students in a school will require Tier II interventions. The students that require interventions at this level display more intense, at-risk behaviors. The interventions continue to focus on the prevention and re-occurrence of problem behavior (Flower et al., 2011) but they are more targeted in their implementation (Simonsen et al., 2011; Simonsen et al., 2010).

Tier III. Roughly 5% of the student population will not respond to Tier I and Tier II interventions and will require Tier III interventions (Simonsen et al., 2011). Tier III interventions are designed for individual students who display high frequency or high-intensity problem behaviors. Tier III interventions are more intensive and specialized based upon the individual student yet still compliment the universal, school-wide tier (Simonsen et al., 2011).

PBIS Critical Features

Multiple studies have been conducted to identify the critical features of PBIS. The critical features have been identified in the literature to emphasize their importance with implementation fidelity and sustainability (McIntosh et al., 2013). There may be some variation in the implementation; however, the seven critical features remain consistent based upon a synthesis of research (Horner & Sugai, 2000; Horner et al., 2004).

Leadership team. A leadership team is established at the division and individual school level (Bradshaw, Koth, Bevans, Ialongo & Leaf, 2008; Sugai & Horner, 2006). The leadership team establishes policies and practices, secures funding and resources, and establishes implementation of PBIS as a priority (Horner et al., 2004; Sugai & Horner, 2006).

Coaching. Each school team selects a behavioral coach who has expertise and experience with behavioral interventions and conducting functional behavioral assessments (Bradshaw et al., 2008). The coach provides a link between training and implementation of PBIS systems and practices (Sugai & Horner, 2006). The coach's role is more frequent in the initial stages of implementation. As the team becomes more fluent in implementation, the coaching activities become less frequent and more informal. As teams become more advanced, coaching will focus on assisting to “self-assess the accuracy and consistency of their implementation, maximize targeted outcomes, increase implementation efficiency, acknowledge progress, communicate progress to district and state leadership, and facilitate the review of data and enhancement of action plans” (Sugai & Horner, 2006, p. 253).

Expectations/outcomes. The leadership team identifies or defines three to five school-wide expectations for appropriate student behavior (Bradshaw et al., 2008; Horner et al., 2004) that are based on a review of school-wide discipline data (Simonsen et al., 2011). School staff uses discipline data to identify the school-wide expectations that are taught to students. The data also drives the identification of interventions and practices and serves as the criterion when evaluating whether implementation has been effective (Sugai et al., 2010).

Teaching/practices. The school-wide behavioral expectations are actively taught to all students regularly (Horner et al., 2004) and are effectively taught with the use of evidence-based practices (Simonsen et al., 2011). Targeted lessons take place in the classroom and non-classroom settings and where problem behaviors occur (Andreou et al., 2015).

System of rewards. Horner et al. (2004) state that school staff must monitor students and acknowledge them for demonstrating the behavioral expectations once explicitly taught. A school-wide system must be developed to reward students who demonstrate the expected positive behaviors. The staff at the school develop a system for reinforcement that is consistently used by all adult members in the classroom and non-classroom settings (Bradshaw et al., 2008).

System of response to behavior. Sugai and Horner (2006) suggest that implementation of PBIS includes a system of response to behavioral violations. The staff defines behaviors that are managed in the classroom (minor offenses) and those that require a referral to the office (major offenses). The system of response to student behaviors ensures that disciplinary infractions are administered similarly (Bradshaw et al., 2008). Consistent implementation of the system of behavioral consequences is intended to correct problem behaviors (Horner et al., 2004).

System to collect and analyze data. The creation of a formal system is needed to gather, analyze, and use data (Horner et al., 2004). Student office discipline referrals (ODRs), suspensions, and expulsions represent the data collected by school staff to measure the impact on behavior. The data are used to inform decision-making at all levels, assist in determining whether the current practice is continued, adapted, or discontinued, and to identify implementation fidelity (Sugai & Horner, 2006).

PBIS, Student Discipline, and Instructional Time

Taylor-Greene et al. (1997) explored the effects of PBIS training at the beginning of the year along with on-going support on the number of ODRs over a two-year period. Their study involved a single middle school (grades 6-8) in a rural area with approximately 530 students. Before the study, faculty of the school noted concerns over the level of problem behaviors. A pre-post comparison was conducted. Results of their study revealed that there was a 42% reduction of ODRs over a two-year period. In the second year of the study, there were fewer ODRs for each month except April. At the conclusion of their study, Taylor-Greene et al. (1997) found that training and on-going support in PBIS impacted the reduction of ODRs for a school.

Scott and Barrett (2004) evaluated the school-wide impact of PBIS by examining the amount of time staff and students were engaged in student discipline procedures. The study took

place in an urban elementary school in Maryland. Implementation of PBIS began in 2000, and data from the School-wide Evaluation Tool (SET) were obtained in the fall of 2001 and spring of 2002. Before collecting data, Scott and Barrett (2004) conducted an analysis of the amount of time administrators and students spent involved in the discipline process. On average, administrators spent 10 minutes processing basic ODRs while suspensions took an average of 45 minutes. Students spent an average of 20 minutes out of the classroom for ODRs. The study showed a decrease in ODRs from 608 to 46 and a decrease in suspensions from 77 to 22 by the second year of implementation. Overall, administrators experienced a decrease in the amount of time spent processing ODRs from the baseline of 6,080 minutes to 460 minutes by the second year of implementation. The amount of time to process a suspension decreased from a baseline of 3,465 minutes to 990 minutes by the second year. When added together, the implementation of PBIS saved administrators 16.8 days of work. Scott and Barrett (2004) explored the amount of time that students missed classroom instruction for ODRs. The baseline data of 12,160 minutes were reduced to 920 minutes of missed instruction by the second year of implementation and represented a gain of 10,620 minutes or 31.2 days of school. The amount of time for missed classroom instruction decreased from 462 hours to 132 hours for suspensions. Students earned 55 days of school with the implementation of PBIS.

The impact of PBIS was explored further by Luiselli, Putnam, Handler, and Feinberg (2005) who examined the effects of PBIS implementation on student discipline and academic achievement. Their study included a single elementary school in an urban setting that served grades kindergarten through fifth grade. The school population included 666 students at the start of their study. The population decreased to 590 students by the end of the study. Luiselli et al. (2005) used ODRs, suspensions, and performance on the Metropolitan Achievement Test-Seventh Edition (MAT-7) for third, fourth, and fifth graders, to measure the implementation of PBIS on student discipline and academic achievement. The results revealed that implementation of school-wide PBIS was associated with decreased ODRs and suspensions. Their study also showed that there were gains in student academic achievement; however, Luiselli et al. (2005) cautioned that the results might be attributed to the interventions provided causing threats to internal validity.

Lassen, Steele, and Sailor (2006) sought to explore the relationship between PBIS and academic achievement for students in an urban middle school. From the review of literature,

they discuss their theory that student behavior results in lost instructional time, which in turn, compromises student learning and impacts achievement. They conducted a three-year longitudinal study that involved multiple middle schools in an urban area; however, their results were presented in a case study format where one school was selected as their unit of analysis with an average student enrollment of 623 students. Eighty percent of the student population was economically disadvantaged. Lassen et al. (2006) used ODRs and suspension data, performance on the School-wide Evaluation Tool (SET), and standardized test performance in reading and mathematics using the Kansas State Assessment as their outcome measures. Seventh-graders were assessed in reading and eighth-graders in mathematics for each year of their study. Their study revealed that ODRs were significantly decreased. They applied a logic similar to Scott and Barrett (2004) and estimated that students miss approximately 20 minutes of instruction time for each ODR. Over the course of their study, they determined that students recovered 659 instructional hours or eighty-two 8-hour instructional days with the implementation of PBIS. They also found a significant reduction in student suspensions resulting in increased student exposure to instruction. Lassen et al. (2006) found that ODRs and suspensions were predictors of student performance on reading and mathematics standardized test scores; however, the effect sizes were small and only accounted for 1 to 2% of the variance.

To extend the research on academic and behavioral outcomes for students, Bradshaw, Mitchell, and Leaf (2010) conducted a longitudinal study to examine the effectiveness of school-wide implementation of PBIS in elementary schools. The results of their study revealed that students received fewer major or minor ODRs in schools where the staff was trained to implement PBIS. Likewise, they found that there was a reduction in suspensions in schools that implemented PBIS. Bradshaw et al. (2010) also found that students who attended schools that implemented PBIS tended to outperform those in schools that did not implement PBIS; however, the results of the study did not yield findings of statistical significance.

Caldarella, Shatzer, Gray, Young, and Young (2011) investigated the effects of PBIS implementation on school climate and student outcomes in a middle school over a four-year period. Their study involved two middle schools from the same school district located in the Western United States. A convenience sample was used where the treatment middle school was asked to participate in the study and the comparison school was selected based upon similarities (both demographic and geographic) to the treatment school. Their results represented the

implementation of PBIS at the universal/tier I level. The treatment school received training on the critical features of PBIS implementation. School climate was measured by the PBS-Supplemental Questionnaire (PBS-SQ) and the Indicators of School Quality (ISQ). Student outcomes were measured by student grade point average (GPA) and ODRs, suspensions, and excused and unexcused tardiness. Their findings revealed that PBIS implementation was connected with improved school climate and decreases in student misbehavior. The data from the treatment school revealed statistically significant reductions in tardiness, unexcused absences, and ODRs. While the control school data also revealed statistically significant reductions in tardiness and ODRs, the slope of the change was not as deep. Further, the data from the control school also showed a statistically significant finding where absences increased over the four-year period.

Pluska (2014) conducted a longitudinal study to explore the outcomes for high school students regarding attendance, discipline incidents, and dropout rates following instruction in the Students Taking Appropriate Responsibility (STAR) Program. The STAR program was noted to use tenets of positive behavioral supports and effective school-wide discipline programs. The study took place in a rural county in Virginia. The total population for this study included 619 students. The treatment population attended an elementary school (pre-kindergarten through seventh grade) that provided instruction in the STAR program beginning in the 2004-2005 school year. The control population was randomly selected from the three other remaining elementary schools in the county that did not provide instruction in the STAR program. All students attended one high school for this county during school year 2012-2013. Students that were in first through fourth grade during the 2004-2005 school year were in the ninth through twelfth grade in the 2012-2013 school year. Pluska (2014) found that twelfth grade students that received instruction in the STAR program missed fewer days of school than those students who did not have exposure to the STAR program. This finding was statistically significant. The statistical analyses did not find statistically significant results related to attendance for ninth through eleventh grade students. In reference to discipline incidents and dropout rates, Pluska's (2014) study did not reveal findings of statistical significance.

Freeman et al. (2015) conducted a study to examine the relationship between PBIS in the high school setting and the association with academics, attendance, and behavioral outcomes. The study included 883 high schools from 37 states. Results from the study revealed that fidelity

of implementation of PBIS at the high school level was associated with increased attendance rates and reductions in ODRs. Their study did not show an effect on student academic performance.

Synthesis and Conclusion

Research shows that student attendance matters (Ginsburg et al., 2014; Gottfried, 2010). Studies have shown that student attendance is a predictor of a student's grade point average and reading and mathematics performance (Gottfried, 2010). Research also reveals that lack of student attendance is a contributing factor to the achievement gap (Ginsburg et al., 2014). When students are suspended from school, they are absent from the instructional learning environment. Student achievement gains are impacted the more students are suspended.

The research reports that the implementation of the PBIS framework is an alternative to decrease ODRs, suspensions, and absences (Andreou et al., 2015; Gage et al., 2015; Noltemeyer et al., 2015; Scott & Barrett, 2004). PBIS requires a change to the learning environment where students receive explicit instruction of prosocial skills. The literature in the field shows that implementation of PBIS in elementary schools results in a decrease in student ODRs and suspensions. There is some evidence that this trend holds true in urban middle schools. There is a need to close the gap in the literature on whether implementation of PBIS results in a decrease in ODRs, student suspensions, and absences in suburban middle school settings.

CHAPTER THREE

METHODOLOGY

Purpose of the Study

The purpose of this quantitative study using an *ex post facto* design was to determine if school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS.

Research Design

A study using quantitative data with an *ex post facto* design was selected based on the educational research knowledge of McMillan and Wergin (2010) to determine if the school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. Two middle schools were selected for inclusion in this study from one suburban school division in Virginia. One school was implementing PBIS; the other was not.

Research Design Justification

Quantitative research. This study collected numerical data related to student absences, office discipline referrals, and suspensions. Quantitative research is recommended when a study “involves the use of numerical calculations to summarize, describe, and explore relationships among traits” (McMillan & Wergin, 2010, p. 4). The variables included in this study were measured by data that were analyzed by statistical procedures. Therefore a quantitative study was recommended (Creswell, 2014).

Nonexperimental. A study using quantitative data can be experimental or nonexperimental in nature (McMillan & Wergin, 2010). The researcher has control over factors associated with a study that is experimental (McMillan & Wergin, 2010). In contrast, the researcher does not have control over factors that can influence participant responses in a study that is nonexperimental (McMillan & Wergin, 2010). The researcher in this study sought to

describe a phenomenon and uncover relationships in schools that did and did not implement PBIS. This study determined if there was a change in student absences, office discipline referrals, and suspensions following the implementation of PBIS and determined what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. The researcher did not have control over the factors that influenced participant actions. Thus the study was nonexperimental in nature.

Ex post facto design. This study investigated if there was a change in student absences, office discipline referrals, and student suspensions following the school-wide implementation of PBIS and determined what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. An *ex post facto* design was recommended when the phenomenon of interest has already occurred, and the researcher was trying to infer a causal link or difference associated with an intervention (McMillan & Wergin, 2010). This study compared subjects who experienced the intervention of PBIS in one school over a period of three years to answer research questions one, two, and three.

This study also compared subjects who experienced the intervention of PBIS in one school over a period of three years to those in another school that did not experience PBIS to answer research question four.

Research Questions

The proposed study will answer the following questions

1. What change, if any, in student absences, resulted after the school-wide implementation of PBIS?
2. What change, if any, in office discipline referrals, resulted after the school-wide implementation of PBIS?
3. What change, if any, in student suspensions, resulted after the school-wide implementation of PBIS?
4. What difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS?

Site/Sample Selection

Division selection. Roberts (2010) recommended selecting a population and sample that is representative of the total group of interest when an entire population is not feasible.

Therefore, this study involved a suburban school division in Virginia. The researcher was familiar with the school division and had knowledge of the schools that were and were not implementing PBIS. The school division had a total school enrollment of approximately 39,000 students. There was a total of 47 schools and two centers. Specifically, there were 28 elementary schools, ten middle schools, seven high schools, and two centers. At the time of this study, 23 of the 47 schools were at various stages of PBIS implementation.

School and sample selection. Two middle schools from the selected suburban school division in Virginia were included in this study. The researcher selected the two middle schools based on similar socioeconomic status as shown in Table 1. Pseudonyms were used in place of the actual school names to protect the privacy and confidentiality of the school data. One school implemented PBIS; the other did not. The PBIS middle school began implementation of PBIS during the 2013-2014 school year. At the time of the study, this school had been implementing PBIS for three years. The Non-PBIS middle school did not implement PBIS. Further discussion of the two schools is included below.

Table 1

Socioeconomic/Free and Reduced Lunch Status for PBIS and Non-PBIS School

School Year	PBIS School	Non-PBIS
2012-2013	31.88	27.88
2013-2014	30.58	30.33
2014-2015	31.05	29.13
2015-2016	28.08	27.53

A nonprobability/convenience sample should be used when it is not ethical or feasible to randomly assign subjects to conditions (Price, 2012). Random assignment of students to the two middle schools selected was deemed to be unethical.

PBIS Middle School. The PBIS Middle School began implementation of PBIS during the 2013-2014 school year. For purposes of a baseline, the researcher collected data the year

prior to implementation of PBIS. The principal of this school remained unchanged for the four years of data collection. The school population, broken down by grade level for the four years, is shown in Table 2 as reported on the School Report Card by the Virginia Department of Education.

Table 2

Student Enrollment at PBIS Middle School

School Year	Grade 6	Grade 7	Grade 8	Total Population
2012-2013	355	375	365	1095
2013-2014	357	387	392	1136
2014-2015	369	366	381	1116
2015-2016	380	390	378	1148

Non-PBIS Middle School. The Non-PBIS Middle School did not implement PBIS nor were there any new initiatives introduced during the four years of data collection to address student attendance and suspensions. The principal of this school remained unchanged for the four years of data collection. The school population, broken down by grade level for the four years, is shown in Table 3 as reported on the School Report Card by the Virginia Department of Education.

Table 3

Student Enrollment at Non-PBIS Middle School

School Year	Grade 6	Grade 7	Grade 8	Total Population
2012-2013	221	272	244	737
2013-2014	256	234	270	760
2014-2015	227	256	233	716
2015-2016	243	229	254	726

Data Collection and Gathering Procedures

The data collection procedures began with approval from the doctoral committee to move forward with the study. Next, the researcher submitted an application to the Virginia Tech Institutional Review Board (IRB) requesting permission for the Existing Data Research Proposal. A copy of the Certificate of Completion certifying that the researcher completed the Training for Human Subjects was on file with the institution at the time of the application (see Appendix A). The IRB approved the research protocol on December 5, 2016 (see Appendix B). The researcher then contacted the Director of Staff Development requesting permission to conduct the study in the school division selected. Permission to move forward with the study was granted on December 6, 2016 (see Appendix C). Last, the researcher contacted the Office of Information Technology and submitted a School Information Request (SIR). The SIR is an internet application that processes requests for student data. The researcher requested the SIR to include the following parameters:

- student data from school years 2012-2013, 2013-2014, 2014-2015, and 2015-2016 for each grade level to be broken down by gender, ethnicity, disability, and SES status.
- student data to be identified by a random sequential number to protect confidentiality.
- total days of attendance for each student for each school year.
- total days of absence for each student for each school year regardless of excused or unexcused absences.
- total days of ISS for each student for each school year.
- total days of OSS for each student for each school year.
- total number of office discipline referrals for each student.
- a request that data be provided in an Excel spreadsheet format.

Once submitted, the SIR was assigned to an employee in the Department of Information Technology for processing. The completed SIR was emailed directly to the researcher.

Data Treatment and Management

The researcher received the data from the SIR request in an excel spreadsheet. Pseudonyms were used in place of the actual school names to protect the privacy and confidentiality of the school data. All identifying information was purged to protect the

confidentiality of students. Student specific data were assigned a random sequential number. The data collected on student absence, office discipline referrals, and suspensions were saved and stored on a USB flash drive. The electronic folder containing the data was password protected. The USB flash drive was kept in a locked box in the researcher's possession. The data were destroyed at the conclusion of a successful defense of the dissertation.

Data Analysis Techniques

Descriptive statistics were used to describe the data collected in the study. Howell (2014) recommended the use of the t statistic when a population variance is unknown. Using Creswell's (2014) criteria for selecting a statistical test, a paired samples t -test was recommended when a comparison of two groups in reference to a specific outcome was desired. The researcher sought to examine the changes in student absences, office discipline referrals, and suspensions for students who attended the PBIS Middle School during the baseline data collection year and the next two school years following the implementation of PBIS. Students who did not attend during the baseline data collection year and the following two years were excluded from the study. The school division included in the study implemented a new student management system during the 2015-2016 school year. The new system required a different level of reporting student absences, office discipline referrals, and outcomes regarding suspensions that were not required the three previous school years. The data revealed in Chapter Four showed a trend in increased numbers in office discipline referrals and suspensions from previous years that may be attributed to the new student management system; therefore, the decision was made to exclude the 2015-2016 school year data from the statistical analysis of this study.

A paired samples t -test was conducted to determine if there was a statistically significant difference in the mean values between the groups. The t statistic was used to analyze the data for three research questions.

1. What change, if any, in student absences, resulted after the school-wide implementation of PBIS?
2. What change, if any, in office discipline referrals, resulted after the school-wide implementation of PBIS?
3. What change, if any, in student suspensions, resulted after the school-wide implementation of PBIS?

To answer the three research questions above, Howell (2014) recommended hypothesis testing. The null hypotheses for the three research questions are

Null Hypotheses 1, Research Question 1, H_0 is: There was no change in absences after the school-wide implementation of PBIS from the 2012-2013 school year to the 2013-2014 school year.

Null Hypotheses 2, Research Question 1, H_0 is: There was no change in absences after the school-wide implementation of PBIS from the 2012-2013 school year to the 2014-2015 school year.

Null Hypotheses 3, Research Question 1, H_0 is: There was no change in absences after the school-wide implementation of PBIS from the 2013-2014 school year to the 2014-2015 school year.

Null Hypotheses 1, Research Question 2, H_0 is: There was no change in office discipline referrals after the school-wide implementation of PBIS from the 2012-2013 school year to the 2013-2014 school year.

Null Hypotheses 2, Research Question 2, H_0 is: There was no change in office discipline referrals after the school-wide implementation of PBIS from the 2012-2013 school year to the 2014-2015 school year.

Null Hypotheses 3, Research Question 2, H_0 is: There was no change in office discipline referrals after the school-wide implementation of PBIS from the 2013-2014 school year to the 2014-2015 school year.

Null Hypotheses 1, Research Question 3, H_0 is: There was no change in suspensions after the school-wide implementation of PBIS from the 2012-2013 school year to the 2013-2014 school year.

Null Hypotheses 2, Research Question 3, H_0 is: There was no change in suspensions after the school-wide implementation of PBIS from the 2012-2013 school year to the 2014-2015 school year.

Null Hypotheses 3, Research Question 3, H_0 is: There was no change in suspensions after the school-wide implementation of PBIS from the 2013-2014 school year to the 2014-2015 school year.

The Statistical Program for the Social Sciences (SPSS) software was used to conduct the statistical analyses. The significance levels were established at $p < .05$.

Howell (2014) recommends the use of an independent samples *t*-test when determining the difference between the mean of one population to the mean of another population. The independent samples *t*-test was used to analyze the data and answer the final research question.

4. What difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS?

To answer the final research question, Howell (2014) recommended hypothesis testing. The null hypotheses for this research question are as follows.

Null Hypotheses 1, Research Question 4, Part 1, H_0 is: There was no difference in the mean absences between a school that implements PBIS and a school that does not implement PBIS in school year 2012-2013.

Null Hypotheses 2, Research Question 4, Part 1, H_0 is: There was no difference in the mean absences between a school that implements PBIS and a school that does not implement PBIS in school year 2013-2014.

Null Hypotheses 3, Research Question 4, Part 1, H_0 is: There was no difference in the mean absences between a school that implements PBIS and a school that does not implement PBIS in school year 2014-2015.

Null Hypotheses 1, Research Question 4, Part 2, H_0 is: There was no difference in mean office discipline referrals between a school that implements PBIS and a school that does not implement PBIS in school year 2012-2013.

Null Hypotheses 2, Research Question 4, Part 2, H_0 is: There was no difference in mean office discipline referrals between a school that implements PBIS and a school that does not implement PBIS in school year 2013-2014.

Null Hypotheses 3, Research Question 4, Part 2, H_0 is: There was no difference in mean office discipline referrals between a school that implements PBIS and a school that does not implement PBIS in school year 2014-2015.

Null Hypotheses 1, Research Question 4, Part 3, H_0 is: There was no difference in mean suspensions between a school that implements PBIS and a school that does not implement PBIS in school year 2012-2013.

Null Hypotheses², Research Question 4, Part 3, H₀ is: There was no difference in mean suspensions between a school that implements PBIS and a school that does not implement PBIS in school year 2013-2014.

Null Hypotheses³, Research Question 4, Part 3, H₀ is: There was no difference in mean suspensions between a school that implements PBIS and a school that does not implement PBIS in school year 2014-2015.

The Statistical Program for the Social Sciences (SPSS) software was used to conduct the statistical analyses. The significance levels were established at $p < .05$.

Time Line

During the month of December, the researcher successfully completed the prospectus exam, submitted and received approval from the IRB, and obtained permission from the selected school division to complete the study. Data were requested and received in December. An analysis of the data was completed in January of 2017. The summary and conclusions of the study were recorded in February 2017. The doctoral dissertation was presented to the committee in preparation of a defense of the research in February 2017.

Methodology Summary

Chapter Three opened with a brief description of the purpose of the study followed by the research design and justification. A quantitative study using an *ex post facto* design was selected for this research. Two middle schools from a suburban school division in Virginia were included in the study. One school was implementing PBIS while the other middle school was not implementing PBIS. The chapter concluded with a description of the data collection and gathering procedures, data treatment and management, data analysis techniques, and the timeline for the study.

CHAPTER FOUR THE RESULTS

Purpose of the Study

The purpose of this quantitative study using an *ex post facto* design was to determine if school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. The research questions guiding this study were as follows.

1. What change, if any, in student absence, resulted after the school-wide implementation of PBIS?
2. What change, if any, in office discipline referrals, resulted after the school-wide implementation of PBIS?
3. What change, if any, in student suspensions, resulted after the school-wide implementation of PBIS?
4. What difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS?

Two middle schools were selected for inclusion in this study from one suburban school division in Virginia. One school implemented PBIS; the other did not. This study collected existing data that was provided by the selected school division. Data were collected over four years to include a baseline of data for the 2012-2013 school year for the PBIS Middle School as shown in Table 4. The Non-PBIS Middle School did not implement PBIS nor did they introduce any new discipline initiatives.

Table 4

PBIS and Non-PBIS Middle School

School Year	PBIS Middle School	Non-PBIS Middle School
2012-2013	Pre PBIS Baseline Collection	No PBIS Implementation or New Discipline Initiatives
2013-2014	Year One of PBIS Implementation	No PBIS Implementation or New Discipline Initiatives
2014-2015	Year Two of PBIS Implementation	No PBIS Implementation or New Discipline Initiatives
2015-2016	Year Three of PBIS Implementation	No PBIS Implementation or New Discipline Initiatives

The total number of students for which data were collected for the PBIS and Non-PBIS schools was 7,215. The PBIS Middle School had 4,339 students, representing 60% of the data collected, whereas the Non-PBIS Middle School had 2,876 students, representing the remaining 40% of the data.

Data Analysis

The school division included in the study implemented a new student management system during the 2015-2016 school year. The new system required a different level of reporting student absences, office discipline referrals, and outcomes regarding suspensions that were not required the three previous school years. Both schools included in the study revealed an increase in student absences, office discipline referrals, and suspensions in school year 2015-2016 that was higher than those in 2013-2014 and 2014-2015. This increase may be attributed to the new student management system; therefore, the decision was made to exclude the 2015-2016 school year data from the statistical analysis of this study.

The data analysis for each question was completed using Excel spreadsheets and the Statistical Program for the Social Sciences (SPSS) software. Descriptive statistics were provided for each question and paired samples *t*-tests and independent samples *t*-tests were conducted.

The researcher assessed that there were outliers in the data by review of box plots. The outliers were not data entry or measurement errors. The outliers represented unusual values. To make a determination on whether to remove the outliers or keep them in the study, the researcher removed the outliers and ran the paired samples *t*-tests and the independent samples *t*-tests again. Removing the outliers did not result in a change in the findings. The conclusions remained the same. As a result, the researcher left the data for this study intact and the outliers were included in each statistical analysis.

Research Question 1

Research question 1. What change, if any, in student absences, resulted after the school-wide implementation of PBIS? The null hypotheses were as follows.

Null Hypothesis 1, Research Question 1, H_0 is: There was no change in absences after the school-wide implementation of PBIS from the 2012-2013 school year to the 2013-2014 school year.

Null Hypothesis 2, Research Question 1, H_0 is: There was no change in absences after the school-wide implementation of PBIS from the 2012-2013 school year to the 2014-2015 school year.

Null Hypothesis 3, Research Question 1, H_0 is: There was no change in absences after the school-wide implementation of PBIS from the 2013-2014 school year to the 2014-2015 school year.

Descriptive statistics. This study collected existing student data provided by the school division to determine if there was a change, if any, in student absences following the implementation of PBIS. The sample was limited to students who attended each school for all three years and for whom absences existed for the school years included in the study; resulting in 283 students for the PBIS Middle School and 187 students for the Non-PBIS Middle School. Absences were displayed by increments for both schools (see Table 5 and 6). As illustrated in Table 5, the PBIS Middle School had 173 students who were absent between zero to five days in 2012-2013. The number decreased to 163 students in 2013-2014, and increased again to 171 students in 2014-2015.

Table 5

Frequency of Student Absences at PBIS Middle School

Days of Absence	2012-2013	2013-2014	2014-2015
0 – 5	173	163	171
6 – 10	78	72	67
11 – 15	20	25	27
16 – 20	8	15	14
21 – 25	3	5	1
26 – 30	1	2	1
31 – 35	0	0	2
36 – 40	0	0	0
41 – 45	0	0	0
46 – 50	0	0	0
51 +	0	1	0

N=283

Table 6 shows that the Non-PBIS Middle School had 114 students who were absent between zero to five days in 2012-2013. This number increased to 130 students in 2013-2014, and then decreased to 117 students in 2014-2015.

Table 6

Frequency of Student Absences at Non-PBIS Middle School

Days of Absence	2012-2013	2013-2014	2014-2015
0 – 5	114	130	117
6 – 10	53	37	46
11 – 15	11	11	14
16 – 20	5	4	3
21 – 25	1	2	3
26 – 30	1	1	1
31 – 35	0	0	0
36 – 40	1	0	1
41 – 45	1	0	0
46 – 50	0	1	0
51 +	0	1	2

N=187

Descriptive statistics were used to describe the per pupil absences for students at PBIS Middle School and Non-PBIS Middle School. A cumulative change from the baseline year in per pupil absences for PBIS Middle School and Non-PBIS Middle school was then calculated (see Table 7 and 8).

Table 7

Per Pupil Absences for PBIS and Non-PBIS Middle School

School Year	PBIS			Non-PBIS		
	Total Students	Total Absences	Per Pupil Absences	Total Students	Total Absences	Per Pupil Absences
2012-2013	283	1,479	5.23	187	1,044	5.58
2013-2014	283	1,739	6.14	187	943	5.04
2014-2015	283	1,677	5.93	187	1,160	6.20

As illustrated in Table 7 during school year 2014-2015, the average number of days of student absence at PBIS Middle School was 5.93 days whereas the Non-PBIS Middle School was 6.20 days. Students from the PBIS Middle School revealed fewer absences by the third year of the data collection where the per pupil absence at the PBIS Middle School was 5.93 days and the Non-PBIS Middle School was 6.20 days.

Table 8

Cumulative Change from Baseline in Per Pupil Absences for PBIS and Non-PBIS Middle School

School Year	Change in Per Pupil Absences	
	PBIS Middle	Non-PBIS Middle
2012-2013	Baseline	Baseline
2013-2014	+0.91	- 0.54
2014-2015	+0.7	+0.62

The cumulative change per pupil absences during year two of the data collection (school year 2013-2014) revealed an increase of .91 for the PBIS Middle School and a decrease of .54 for the Non-PBIS Middle School. Year three of the data collection (school year 2014-2015) showed an increase in cumulative absences from the baseline year by .7 for the PBIS Middle School and an increase of .62 for the Non-PBIS Middle School. Overall there was an increase in student absences over the three years in the PBIS Middle School and the Non-PBIS Middle School.

Statistical analysis. The researcher sought to examine the changes in student absences for students who attended the PBIS Middle School during the baseline data collection year and the next two school years following the implementation of PBIS. Students who did not attend during the baseline data collection year and the following two years were excluded from the study.

A paired samples *t*-test was conducted to determine if the change in student absences was significant following the implementation of PBIS. Three paired samples *t*-tests were conducted to compare the means from the baseline year (2012-2013) to year one of implementation (2013-2014), from the baseline year (2012-2013) to year two of implementation (2014-2015), and from year one of implementation (2013-2014) to year two of implementation (2014-2015). Tables 9, 10, and 11 reveal the analysis from the paired samples *t*-tests.

Table 9

Paired Samples t-Test for Absences from 2012-2013 to 2013-2014

Outcome	2012-2013		2013-2014		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
Absences	5.23	4.88	6.14	6.48	-0.91	-1.59, -0.25	-2.69**	.008	0.16

Note. N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, CI = confidence interval.

Table 10

Paired Samples t-Test for Absences from 2012-2013 to 2014-2015

Outcome	2012-2013		2014-2015		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
Absences	5.23	4.88	5.93	5.39	-0.70	-1.28, -0.12	-2.69**	.008	0.14

Note. N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, CI = confidence interval.

Table 11

Paired Samples t-Test for Absences from 2013-2014 to 2014-2015

Outcome	2013-2014		2014-2015		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
Absences	6.14	6.48	5.93	5.39	0.21	-0.44, 0.88	0.66	.512	0.04

Note. N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, CI = confidence interval.

Explanation of analysis. The PBIS Middle School revealed an increase in student absences from the baseline year (2012-2013) to year one of implementation (2013-2014) as shown in Table 9 that was statistically significant at -0.92 (95% CI, -1.59 to -0.25), $t(282) = -2.69$, $p < .001$, $d = 0.16$. Based upon Cohen's d , this yielded a negligible effect size. Null hypothesis 1 was rejected. There was also an increase in student absences from the baseline year (2012-2013) to year two of PBIS implementation (2014-2015) as shown in Table 10 that was statistically significant at -0.70 (95% CI, -1.29 to -0.12), $t(282) = -2.39$, $p < .05$, $d = 0.14$. Based upon Cohen's d , this also yielded a negligible effect size. Null hypothesis 2 was rejected. There was no change in absences from year one of implementation (2013-2014) to year two of implementation (2014-2015) that yielded a statistically significant difference. As a result, the researcher failed to reject null hypothesis 3.

Research Question 2

Research question 2. What change, if any, in office discipline referrals, resulted after the school-wide implementation of PBIS? The null hypotheses were as follows.

Null Hypothesis 1, Research Question 2, H_0 is: There was no change in office discipline referrals after the school-wide implementation of PBIS from the 2012-2013 school year to the 2013-2014 school year.

Null Hypothesis 2, Research Question 2, H_0 is: There was no change in office discipline referrals after the school-wide implementation of PBIS from the 2012-2013 school year to the 2014-2015 school year.

Null Hypothesis 3, Research Question 2, H_0 is: There was no change in office discipline referrals after the school-wide implementation of PBIS from the 2013-2014 school year to the 2014-2015 school year.

Descriptive statistics. This study collected existing student data provided by the school division to determine if there was a change, if any, in student office discipline referrals following the implementation of PBIS. The sample was limited to students who attended each school for all three years and for whom office discipline referrals existed for the school years included in the study; resulting in 283 students for the PBIS Middle School and 187 students for the Non-PBIS Middle School. Office discipline referrals were displayed in increments for both schools (see Table 12 and 13). Table 12 shows that for PBIS Middle School, there were two students

who received between six to 10 office discipline referrals in 2012-2013. There were no students to receive between six to 10 office discipline referrals in 2013-2014 and three students in 2014-2015.

Table 12

Frequency of Office Discipline Referrals (ODRs) for PBIS Middle School

Number of Office Discipline Referrals	2012-2013	2013-2014	2014-2015
0 – 5	280	281	276
6 – 10	2	0	3

N = 283

Table 13 illustrates that, for the Non-PBIS Middle School, there were two students who received between six to 10 office discipline referrals in 2012-2013. This number increased to three students in 2013-2014, and increased again to 10 students in 2014-2015.

Table 13

Frequency of Office Discipline Referrals (ODRs) for Non-PBIS Middle School

Number of Office Discipline Referrals	2012-2013	2013-2014	2014-2015
0 – 5	185	184	177
6 – 10	2	3	10

N = 187

Descriptive statistics were used to describe the per pupil office discipline referrals for students at PBIS Middle School and Non-PBIS Middle School. A cumulative change from the baseline year in per pupil office discipline referrals for PBIS Middle School and Non-PBIS Middle school was then calculated (see Table 14 and 15)

Table 14

Per Pupil Office Discipline Referrals (ODRs) for PBIS and Non-PBIS Middle School

School Year	PBIS			Non-PBIS		
	Total Students	Total ODR	Per Pupil ODR	Total Students	Total ODR	Per Pupil ODR
2012-2013	283	149	0.53	187	63	0.34
2013-2014	283	79	0.28	187	75	0.40
2014-2015	283	179	0.63	187	154	0.82

As illustrated in Table 14 during school year 2014-2015, the average number of office discipline referrals per student at PBIS Middle School was .63 whereas the Non-PBIS Middle School was .82. There were fewer office discipline referrals for students at the PBIS Middle School than the Non-PBIS Middle School by the third year of data collection.

Table 15

Cumulative Change from Baseline in Per Pupil Office Discipline Referrals (ODRs) for PBIS and Non-PBIS Middle School

School Year	Change in Per Pupil Office Discipline Referrals	
	PBIS Middle	Non-PBIS Middle
2012-2013	Baseline	Baseline
2013-2014	- 0.25	+0.06
2014-2015	+0.10	+0.48

The cumulative change from baseline of office discipline referrals per pupil decreased by .25 for PBIS Middle School and increased by .06 for Non-PBIS Middle School in year two, school year 2013-2014, of the data collection. Year three of the data collection, school year 2014-2015, revealed that PBIS Middle School showed an increase from the baseline data collection year of .10 whereas the Non-PBIS Middle School showed an increase of .48 from baseline. While both schools showed an increase in office discipline referrals from the baseline, the Non-PBIS Middle School revealed a greater increase of .48 than the PBIS Middle School of .10. Further, the PBIS Middle School revealed a greater change in the decrease of office discipline referrals following the first year of PBIS implementation.

Statistical analysis. The researcher sought to examine the changes in student office discipline referrals for students who attended the PBIS Middle School during the baseline data

collection year and the two school years following the implementation of PBIS. Students who did not attend during the baseline data collection year and the following two years were excluded from the study.

A paired samples *t*-test was conducted to determine if the change in student office discipline referrals was significant following the implementation of PBIS. Three paired samples *t*-tests were conducted to compare the means from the baseline year (2012-2013) to year one of implementation (2013-2014), from the baseline year (2012-2013) to year two of implementation (2014-2015), and from year one of implementation (2013-2014) to year two of implementation (2014-2015). Tables 16, 17, and 18 reveal the data for PBIS Middle School.

Table 16

Paired Samples t-Test for Office Discipline Referrals (ODRs) from 2012-2013 to 2013-2014

Outcome	2012-2013		2013-2014		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
ODR	0.53	1.37	0.28	0.87	0.25	0.10, 0.39	3.33***	.001	0.22

Note. N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, ODR = office discipline referral, CI = confidence interval.

Table 17

Paired Samples t-Test for Office Discipline Referrals (ODRs) from 2012-2013 to 2014-2015

Outcome	2012-2013		2014-2015		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
ODR	0.53	1.37	0.63	1.76	-0.10	-0.31, 0.10	-1.02	.310	0.06

Note. N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, ODR = office discipline referral, CI = confidence interval.

Table 18

Paired Samples *t*-Test for Office Discipline Referrals (ODRs) from 2013-2014 to 2014-2015

Outcome	2013-2014		2014-2015		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
ODR	0.28	0.87	0.63	1.76	-0.35	-0.53, -0.18	-3.93***	<i>p</i> <.001	0.25

Note. N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, ODR = office discipline referral, CI = confidence interval.

Explanation of analysis. The PBIS Middle School revealed a decrease in student office discipline referrals from the baseline year (2012-2013) to year one of implementation (2013-2014) as shown in Table 16 that was statistically significant at .25 (95% CI, .10 to .40), $t(282) = 3.33$, $p < .001$, $d = 0.22$. Based upon Cohen’s *d*, this yielded a small effect size. The null hypothesis was rejected. There was an increase in student office discipline referrals from year one of implementation (2013-2014) to year two of PBIS implementation (2014-2015) as shown in Table 18 that was statistically significant at -0.35 (95% CI, -.53 to -.18), $t(282) = -3.93$, $p < .001$, $d = 0.25$. Based upon Cohen’s *d*, this also yielded a small effect size. The null hypothesis was rejected. There was no change in office discipline referrals from the baseline year (2012-2013) to year two of implementation (2014-2015) that yielded a statistically significant difference. As a result, the researcher failed to reject null hypothesis 2.

Research Question 3

Research question 3. What change, if any, in student suspensions, resulted after the school-wide implementation of PBIS? The null hypotheses were as follows.

Null Hypothesis 1, Research Question 3, H_0 is: There was no change in suspensions after the school-wide implementation of PBIS from the 2012-2013 school year to the 2013-2014 school year.

Null Hypothesis 2, Research Question 3, H_0 is: There was no change in suspensions after the school-wide implementation of PBIS from the 2012-2013 school year to the 2014-2015 school year.

Null Hypothesis 3, Research Question 3, H_0 is: There was no change in suspensions after the school-wide implementation of PBIS from the 2013-2014 school year to the 2014-2015 school year.

Descriptive statistics. This study collected existing student data provided by the school division to determine if there was a change, if any, in student suspensions following the implementation of PBIS. The sample was limited to students who attended each school for all three years and for whom suspensions existed for the school years included in the study; resulting in 283 students for the PBIS Middle School and 187 students for the Non-PBIS Middle School. Suspensions were displayed in increments for both schools (see Table 19 and 20). As illustrated in Table 19, the PBIS Middle School had 279 students who received between zero to five days of suspension in 2012-2013. In 2013-2014 the number of students to receive between zero to five days of suspension was 278. This number decreased to 276 students in 2014-2015.

Table 19

Frequency of Student Suspensions for PBIS Middle School

Days of Suspension	2012-2013	2013-2014	2014-2015
0 – 5	279	278	276
6 – 10	3	4	6
11 – 15	1	1	1

N = 283

The data in Table 20 shows that the Non-PBIS Middle School had 185 students in 2012-2013 to receive between zero to five days of suspension. This number decreased to 182 students in 2013-2014, and decreased again to 180 students in 2014-2015.

Table 20

Frequency of Student Suspensions for Non-PBIS Middle School

Days of Suspension	2012-2013	2013-2014	2014-2015
0 – 5	185	182	180
6 – 10	2	3	3
11 – 15	0	2	4

N = 187

Descriptive statistics were used to describe the per pupil suspensions for students at PBIS Middle School and Non-PBIS Middle School. A cumulative change from the baseline year in per pupil suspensions for PBIS Middle School and Non-PBIS Middle school was then calculated (see Table 21 and 22).

Table 21

Per Pupil Suspensions for PBIS and Non-PBIS Middle School

School Year	PBIS			Non-PBIS		
	Total Students	Total Suspensions	Per Pupil Suspensions	Total Students	Total Suspensions	Per Pupil Suspensions
2012-2013	283	118	0.42	187	64	0.34
2013-2014	283	106	0.37	187	94	0.50
2014-2015	283	129	0.46	187	144	0.77

As illustrated in Table 21, during school year 2014-2015, the average number of days of student suspensions at PBIS Middle School was .46 days whereas the Non-PBIS Middle School was .77 days. The students at the PBIS Middle School received fewer suspensions per pupil than the Non-PBIS Middle School.

Table 22

Cumulative Change from Baseline in Per Pupil Suspensions for PBIS and Non-PBIS Middle School

School Year	Change in Per Pupil Suspensions	
	PBIS Middle	Non-PBIS Middle
2012-2013	Baseline	Baseline
2013-2014	- 0.05	+0.16
2014-2015	+0.04	+0.43

The cumulative change from baseline of suspensions per pupil decreased by .05 for PBIS Middle School and increased by .16 for Non-PBIS Middle School in year two, school year 2013-2014, of the data collection. Year three of the data collection, school year 2014-2015, revealed that PBIS Middle School showed an increase from the baseline data collection year of .04 while Non-PBIS Middle School showed an increase of .43 from baseline. While both schools showed an increase in per pupil student suspensions from the baseline, the Non-PBIS Middle School revealed a greater increase of .43 than the PBIS Middle School of .04. The change in student suspensions at PBIS Middle School revealed fewer suspensions than the Non-PBIS Middle School.

Statistical analysis. The researcher sought to examine the changes in student suspensions for students who attended the PBIS Middle School during the baseline data collection year and the two school years following the implementation of PBIS. Students who did not attend during the baseline data collection year and the following two years were excluded from the study.

A paired samples *t*-test was conducted to determine if the change in student suspensions was significant following the implementation of PBIS. Three paired samples *t*-tests were conducted to compare the means from the baseline year (2012-2013) to year one of implementation (2013-2014), from the baseline year (2012-2013) to year two of implementation (2014-2015), and from year one of implementation (2013-2014) to year two of implementation (2014 -2015). Tables 23, 24, and 25 contain the data for PBIS Middle School suspensions.

Table 23

Paired Samples t-Test for Suspensions 2012-2013 to 2013-2014

Outcome	2012-2013		2013-2014		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
Suspensions	0.42	1.27	0.37	1.32	0.05	-0.14, 0.23	0.45	.653	0.04

N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, CI = confidence interval.

Table 24

Paired Samples t-Test for Suspensions 2012-2013 to 2014-2015

Outcome	2012-2013		2014-2015		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
Suspensions	0.42	1.27	0.46	1.47	-0.04	-0.22, .14	-0.42	.675	0.03

N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, CI = confidence interval.

Table 25

Paired Samples t-Test for Suspensions from 2013-2014 to 2014-2015

Outcome	2013-2014		2014-2015		Mean Difference	95% CI for Mean Difference	<i>t</i>	<i>p</i>	<i>d</i>
	M	SD	M	SD					
Suspensions	0.37	1.32	0.46	1.47	-0.09	-0.26, 0.10	-.89	.370	0.06

N = 283, **p* < .05. ** *p* < .01. *** *p* < .001, *df* = 282, CI = confidence interval.

Explanation of analysis. There was no change in suspensions in any of the statistical analyses that yielded a statistically significant difference. The researcher failed to reject the null hypotheses for this research question.

Research Question 4

Research question 4. What difference, if any, was there in student absences, office discipline referrals, and suspensions between a school that implemented PBIS and a school that did not implement PBIS? The null hypotheses were as follows.

Null Hypothesis 1, Research Question 4, Part 1, H₀ is: There was no difference in the mean absences between a school that implemented PBIS and a school that did not implement PBIS in school year 2012-2013.

Null Hypothesis 2, Research Question 4, Part 1, H₀ is: There was no difference in the mean absences between a school that implemented PBIS and a school that did not implement PBIS in school year 2013-2014.

Null Hypothesis 3, Research Question 4, Part 1, H₀ is: There was no difference in the mean absences between a school that implemented PBIS and a school that did not implement PBIS in school year 2014-2015.

Null Hypothesis 1, Research Question 4, Part 2, H₀ is: There was no difference in mean office discipline referrals between a school that implemented PBIS and a school that did not implement PBIS in school year 2012-2013.

Null Hypothesis 2, Research Question 4, Part 2, H₀ is: There was no difference in mean office discipline referrals between a school that implemented PBIS and a school that did not implement PBIS in school year 2013-2014.

Null Hypothesis 3, Research Question 4, Part 2, H_0 is: There was no difference in mean office discipline referrals between a school that implemented PBIS and a school that did not implement PBIS in school year 2014-2015.

Null Hypothesis 1, Research Question 4, Part 3, H_0 is: There was no difference in mean suspensions between a school that implemented PBIS and a school that did not implement PBIS in school year 2012-2013.

Null Hypothesis 2, Research Question 4, Part 3, H_0 is: There was no difference in mean suspensions between a school that implemented PBIS and a school that did not implement PBIS in school year 2013-2014.

Null Hypothesis 3, Research Question 4, Part 3, H_0 is: There was no difference in mean suspensions between a school that implemented PBIS and a school that did not implement PBIS in school year 2014-2015.

Descriptive statistics. This study collected existing student data provided by the school division to determine if there was a difference, if any, in student absences, office discipline referrals, and suspensions between a school that implemented PBIS and a school that did not implement PBIS. The sample was limited to students who attended each school for all three years and for whom absences, office discipline referrals, and suspensions existed for the school years included in the study. Descriptive statistics are provided for absences, office discipline referrals, and suspensions for both schools for each year of the data collection (see Tables 26, 27, and 28). Table 26 illustrates, for example, that in 2012-2013 the PBIS Middle School had 283 students, the mean absences were 5.23 with a standard deviation of 4.88, and a standard error of the mean of .29.

Table 26

Descriptive Statistics for PBIS and Non-PBIS Middle School for Absences

Group Statistics					
School Year	School	N	Mean	Std. Deviation	Std. Error Mean
2012-2013 Absences	PBIS Middle School	283	5.23	4.88	0.29
	Non-PBIS Middle School	187	5.58	5.94	0.43
2013-2014 Absences	PBIS Middle School	283	6.14	6.48	0.39
	Non-PBIS Middle School	187	5.04	6.80	0.50
2014-2015 Absences	PBIS Middle School	283	5.93	5.40	0.32
	Non-PBIS Middle School	187	6.20	9.71	0.71

Table 27 illustrates, for example, that in 2012-2013 the PBIS Middle School had 283 students, the mean office discipline referrals were .53 with a standard deviation of 1.37, and a standard error of the mean of .08.

Table 27

Descriptive Statistics for PBIS and Non-PBIS Middle School for Office Discipline Referrals

Group Statistics					
School Year	School	N	Mean	Std. Deviation	Std. Error Mean
2012-2013 Office Discipline Referrals	PBIS Middle School	283	0.53	1.37	0.08
	Non-PBIS Middle School	187	0.34	0.96	0.07
2013-2014 Office Discipline Referrals	PBIS Middle School	283	0.28	0.87	0.05
	Non-PBIS Middle School	187	0.40	1.16	0.09
2014-2015 Office Discipline Referrals	PBIS Middle School	283	0.63	1.76	0.11
	Non-PBIS Middle School	187	0.82	1.83	0.13

Table 28 illustrates, for example, that in 2012-2013 the PBIS Middle School had 283 students, the mean suspensions were .42 with a standard deviation of 1.27, and a standard error of the mean of .08.

Table 28

Descriptive Statistics for PBIS and Non-PBIS Middle School for Suspensions

Group Statistics						
School Year	School	N	Mean	Std. Deviation	Std. Error	
					Mean	
2012-2013 Suspensions	PBIS Middle School	283	0.42	1.27	0.08	
	Non-PBIS Middle School	187	0.34	1.10	0.08	
2013-2014 Suspensions	PBIS Middle School	283	0.37	1.32	0.08	
	Non-PBIS Middle School	187	0.50	1.83	0.13	
2014-2015 Suspensions	PBIS Middle School	283	0.46	1.47	0.09	
	Non-PBIS Middle School	187	0.77	2.19	0.16	

Statistical analysis. The researcher sought to examine the difference in student absences, office discipline referrals, and suspensions for students who attended the PBIS Middle School during the baseline data collection year and the two school years following the implementation of PBIS compared to those students who attended the Non-PBIS Middle School. Students who did not attend during the baseline data collection year and the following two years from both schools were excluded from the study.

A one-tailed independent samples *t*-test was conducted to answer each level of this research question. Table 29 provides the statistical analysis to answer the question of what difference, if any, was there in mean student absences between PBIS Middle School and Non-PBIS Middle School.

Table 29

Independent Samples t-Test for Mean Absences between PBIS and Non-PBIS Middle School

School Year		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	<i>t</i>	df	Sig. (1-tailed) <i>p</i>	Mean Difference	95% Confidence Interval of the Difference Lower Upper	
2012-2013 Absences	Equal variances assumed	0.11	0.746	-0.71	468	.239	-0.36	-1.34	0.63
	Equal variances not assumed			-0.68	344	.248	-0.36	-1.38	0.67
2013-2014 Absences	Equal variances assumed	1.36	0.245	1.77*	468	.038	1.10	-0.12	2.33
	Equal variances not assumed			1.75	385	.040	1.10	-0.13	2.34
2014-2015 Absences	Equal variances assumed	1.33	0.249	-0.40	468	.346	-0.28	-1.65	1.10
	Equal variances not assumed			-0.36	262	.722	-0.28	-1.81	1.26

Note. N = 470, * $p < .05$. ** $p < .01$. *** $p < .001$

Explanation of analysis. An independent samples *t*-test was conducted to determine if there was a difference in mean absences between PBIS Middle School and Non-PBIS Middle School. Table 29 shows that there were no differences in absences in school years 2012-2013 and 2014-2015 between the two schools; however, there was a difference in mean absences in school year 2013-2014 where there were fewer absences at Non-PBIS middle school ($M = 5.04$, $SD = 6.80$) than the PBIS middle school ($M = 6.14$, $SD = 6.48$), a statistically significant difference, $M = 1.10$, 95% CI [-0.12, 2.33], $t(468) = 1.77$, $p = 0.038$. Based on this analysis, the researcher failed to reject null hypothesis 1 and null hypothesis 3. The researcher rejected null hypothesis 2.

Table 30 provides the statistical analysis to answer the question of what difference, if any, was there in mean student office discipline referrals between PBIS Middle School and Non-PBIS Middle School.

Table 30

Independent Samples t-Test for Mean Office Discipline Referrals (ODRs) between PBIS and Non-PBIS Middle School

School Year		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (1-tailed) <i>p</i>	Mean Difference	95% Confidence Interval of the Difference Lower Upper	
2012-2013	Office Discipline Referrals	6.86	.009	1.65	468	.051	0.19	-0.04	0.42
	Equal variances assumed			1.76*	466	.039	0.19	-0.02	0.40
	Equal variances not assumed								
2013-2014	Office Discipline Referrals	4.17	.042	-1.30	468	.097	-0.12	-0.31	0.06
	Equal variances assumed			-1.23	322	.110	-0.12	-0.32	0.07
	Equal variances not assumed								
2014-2015	Office Discipline Referrals	3.19	.075	-1.13	468	.129	-0.19	-0.52	0.14
	Equal variances assumed			-1.13	388	.131	-0.19	-0.53	0.14
	Equal variances not assumed								

Note. N = 470, * $p < .05$. ** $p < .01$. *** $p < .001$

Explanation of analysis. An independent samples *t*-test was conducted to determine if there were differences in mean office discipline referrals between PBIS Middle School and Non-PBIS Middle School. Table 30 illustrates that there was a difference in office discipline referrals in school year 2012-2013 where there were fewer office discipline referrals at Non-PBIS middle school ($M = .34$, $SD = .961$) than the PBIS middle school ($M = .53$, $SD = 1.37$), a statistically significant difference, $M = .19$, 95% CI [-0.22, .401], $t(466) = 1.76$, $p = 0.039$. As a result, the researcher rejected the null hypothesis. There were no differences in mean office discipline referrals for school years 2013-2014 and 2014 - 2015. As a result, the researcher failed to reject the null hypotheses for these school years.

Tables 31 provides the statistical analysis to answer the question of what difference, if any, was there in mean suspensions between PBIS Middle School and Non-PBIS Middle School.

Table 31

Independent Samples t-Test for mean Suspensions between PBIS and Non-PBIS Middle School

School Year		Levene's Test for Equality of Variances		<i>t</i>	df	t-test for Equality of Means			
		F	Sig.			Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						<i>p</i>		Lower	Upper
2012-2013	Equal variances assumed	1.58	.209	0.66	468	.255	0.08	-0.15	0.30
	Equal variances not assumed			0.68	435	.249	0.08	-0.14	0.30
2013-2014	Equal variances assumed	2.56	.110	-0.88	468	.189	-0.13	-0.41	0.16
	Equal variances not assumed			-0.83	311	.205	-0.13	-0.43	0.18
2014-2015	Equal variances assumed	9.52	.002	-1.86	468	.032	-0.31	-0.65	0.02
	Equal variances not assumed			-1.72*	296	.043	-0.31	-.067	0.05

Note. N = 470, **p* < .05. ** *p* < .01. *** *p* < .001

Explanation of analysis. An independent samples *t*-test was conducted to determine if there were differences in mean suspensions between PBIS Middle School and Non-PBIS Middle School. Table 31 shows that there was a difference in mean suspensions in school year 2014-2015 where there were fewer suspensions at PBIS middle school (M = .46, SD = 1.47) than the Non-PBIS middle school (M = .77, SD = 2.19), a statistically significant difference, M = -.31, 95% CI [-0.67, .05], *t* (296) = 1.72, *p* = 0.043, therefore the null hypotheses was rejected. There were no differences in mean office discipline referrals for school years 2013-2014 and 2014 - 2015. The researcher failed to reject the null hypotheses for these school years.

Chapter Four Summary

The results of the analysis for each research question were presented in this chapter. The research questions guiding this study were: (a) What change, if any, in student absences, resulted after the school-wide implementation of PBIS?; (b) What change, if any, in office discipline referrals, resulted after the school-wide implementation of PBIS?; (c) What change, if any, in student suspensions, resulted after the school-wide implementation of PBIS?; (d) What

difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS? Descriptive statistics were used to describe the data that were obtained. To answer research questions one through three, paired samples *t*-tests were conducted between the baseline year of data collection (2012-2013) and year one (2013-2014) of PBIS implementation, the baseline year of data collection (2012-2013) and year two (2014-2015) of PBIS implementation, and between year one of implementation (2013-2014) and year two of PBIS implementation (2014-2015). Research question four was answered by conducting an independent samples *t*-test for school years 2012-2013, 2013-2014, and 2014-2015.

The analyses showed that the PBIS Middle School revealed an increase in student absences from the baseline year (2012-2013) to year one of implementation (2013-2014) and an increase in student absences from the baseline year (2012-2013) to year two of PBIS implementation (2014-2015) that was statistically significant. The PBIS Middle School revealed a decrease in student office discipline referrals from the baseline year (2012-2013) to year one of implementation (2013-2014) that was statistically significant; however, there was an increase in student office discipline referrals from year one of implementation (2013-2014) to year two of PBIS implementation (2014-2015) that was statistically significant. Finally, there was no change in suspensions in any of the statistical analyses that yielded a statistically significant difference.

An independent samples *t*-test was conducted to determine if there was a difference in mean absences between PBIS Middle School and Non-PBIS Middle School. There were no differences in absences in school years 2012-2013 and 2014-2015. There was a difference in mean absences in school year 2013-2014 where there were fewer absences at Non-PBIS middle school than the PBIS middle school that was statistically significant. An independent samples *t*-test determined that there was a difference in office discipline referrals in school year 2012-2013 where there were fewer office discipline referrals at Non-PBIS middle school than the PBIS middle school that was statistically significant. There were no differences in mean office discipline referrals for school years 2013-2014 and 2014-2015. Regarding suspensions, the independent samples *t*-test determined that there was a difference in mean suspensions in school year 2014-2015 where there were fewer suspensions at PBIS middle school than the Non-PBIS middle school that was statistically significant. There were no differences in mean office discipline referrals for school years 2013-2014 and 2014-2015.

CHAPTER FIVE

FINDINGS AND IMPLICATIONS

Purpose of the Study

The purpose of this quantitative study using an *ex post facto* design was to determine if school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. The research questions guiding this study were as follows.

1. What change, if any, in student absences, resulted after the school-wide implementation of PBIS?
2. What change, if any, in office discipline referrals, resulted after the school-wide implementation of PBIS?
3. What change, if any, in student suspensions, resulted after the school-wide implementation of PBIS?
4. What difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS?

The change in student absences, office discipline referrals, and suspensions was analyzed using descriptive statistics and paired samples *t*-tests for the school implementing PBIS. The difference between a school implementing PBIS and a school not implementing PBIS in terms of absences, office discipline referrals, and suspensions was analyzed using descriptive statistics and independent samples *t*-tests.

Summary of Findings

An analysis of the data for the research questions guiding this study revealed several findings. The findings, as outlined in the following paragraphs, will be explained and linked to prior research.

Finding 1. The school that implemented PBIS did not see a decrease in student absences after school-wide implementation of PBIS. Student absences increased from the

baseline year (2012-2013) to year one of PBIS implementation (2013-2014). This increase was statistically significant at -0.92 (95% CI, -1.59 to -0.25), $t(282) = -2.69$, $p < .001$, $d = 0.16$, and the effect size was negligible. Student absences also increased from the baseline year (2012-2013) to year two of PBIS implementation (2014-2015). This increase was also statistically significant at -0.70 (95% CI, -1.29 to -0.12), $t(282) = -2.39$, $p < .05$, $d = 0.14$ and the effect size was negligible.

While this finding may suggest that PBIS does not result in a decrease in student absences, it contradicts the research conducted by Caldarella et al. (2011) who found that implementation of PBIS in a middle school resulted in a reduction of tardiness and unexcused absences. This finding also contradicts the research conducted by Freeman et al. (2015) and Scott and Barrett (2004). Freeman et al. (2015) found that implementation of PBIS at the high school level resulted in increased attendance rates for students. Research findings by Scott and Barrett (2004) revealed that implementation of PBIS resulted in increased attendance for classroom instruction.

Finding 2. The school that implemented PBIS did not show a decrease in student absences when compared to a school not implementing PBIS.

The independent samples *t*-test revealed that the Non-PBIS Middle School ($M = 5.04$, $SD = 6.80$) had fewer absences than the PBIS Middle School ($M = 6.14$, $SD = 6.48$) following a year of PBIS implementation. This finding was statistically significant at $M = 1.10$, 95% CI $[-0.12, 2.33]$, $t(468) = 1.77$, $p = 0.038$.

This finding may indicate that school-wide implementation of PBIS does not impact student attendance. This finding contradicts the research conducted by Caldarella et al. (2011) who found that implementation of PBIS in a middle school resulted in a reduction of tardiness and unexcused absences. It also contradicts the research findings of Freeman et al. (2015) and Pluska (2014). Freeman et al. (2015) found that attendance rates for students attending a school implementing PBIS increased. Results from Pluska's (2014) study identified that attendance increased for twelfth grade students following instruction in the STAR program as compared to students who did not have instruction with this program.

Finding 3. The school that implemented PBIS saw a decrease in office discipline referrals following the first year of implementation. There was a decrease in office discipline referrals from the baseline year (2012-2013) to year one of PBIS implementation (2013-2014).

The reduction of office discipline referrals went from 149 during the baseline year to 79 following the first year of implementation. This decrease in office discipline referrals was statistically significant at .25 (95% CI, .10 to .40), $t(282) = 3.33$, $p < .001$, $d = 0.22$ and yielded a small effect size.

This finding is consistent with research conducted by Scott and Barrett (2004) who found that implementation of PBIS resulted in a reduction of office discipline referrals from 608 during the baseline year to 108 following the first year of implementation. Lassen et al. (2006) also found a significant reduction in office discipline referrals following the implementation of PBIS for each year of their study.

Finding 4. The school that implemented PBIS saw an increase in office discipline referrals between the second and third year of PBIS implementation. There was an increase in student office discipline referrals from year one of implementation (2013-2014) to year two of PBIS implementation (2014-2015) that was statistically significant at -0.35 (95% CI, -53 to -0.18), $t(282) = -3.93$, $p < .001$, $d = 0.25$ that yielded a small effect size.

This finding suggests that PBIS may not have long-term effects on the reduction of office discipline referrals. This finding is consistent with the research conducted by Pluska (2014) who found that there were not long-term effects on discipline incidents following instruction in the STAR program. However, these findings contradict the research conducted by Scott and Barrett (2004) who found that office discipline referrals decreased from 608 referrals during the baseline year to 46 in year two of PBIS implementation. This finding is also contradictory to the research of Taylor-Greene et al. (1997) who found that over a two-year period there was a 42% reduction in office discipline referrals following the implementation of PBIS.

Finding 5. The school that implemented PBIS did not show a decrease in office discipline referrals when compared to a school not implementing PBIS. An independent samples t -test was conducted to determine if there was a difference in office discipline referrals between a school implementing PBIS and a school not implementing PBIS. There were no statistically significant findings in the years following initial implementation.

While it may appear that this finding indicates that there is no difference in office discipline referrals between a school that does and does not implement PBIS, it contradicts the research conducted by Bradshaw et al. (2010). Their research, conducted over 5 years, found that students who attended a school implementing PBIS had fewer office discipline referrals.

Although this finding is supported by the research conducted by Pluska (2014) who found that instruction in the STAR program did not reveal a change in discipline incidents between students who did and did not have exposure to this program.

Finding 6. The school that implemented PBIS did not show a decrease of student suspensions following implementation of PBIS. A paired samples *t*-test was conducted in this study to determine the difference in student suspensions when PBIS was implemented. None of the paired samples *t*-tests resulted in a statistically significant difference regarding student suspensions following the implementation of PBIS.

This finding appears to suggest that PBIS does not result in a decrease of student suspensions; however, this is contradictory to the research conducted by Luiselli et al. (2005) who found that student suspensions decreased in the second year of PBIS implementation. The research of Scott and Barrett (2004) had a similar finding, which showed student suspensions also decreased by the second year of PBIS implementation.

Finding 7. The school that implemented PBIS had fewer student suspensions by the third year of data collection when compared to a school not implementing PBIS. The independent samples *t*-test revealed that PBIS Middle School ($M = .46, SD = 1.47$) had fewer student suspensions by the third year of the data collection (2014-2015) than the Non-PBIS Middle School ($M = .77, SD = 2.19$). This finding was statistically significant at $M = -.31, 95\% CI [-0.67, .05], t(296) = 1.72, p = 0.043$.

This finding was supported by the research conducted by Bradshaw et al. (2010). Their study collected five years of data and revealed that student suspensions decreased with the implementation of PBIS. This finding was also supported by Scott and Barrett (2004) who reported a reduction in suspensions by the second year of PBIS implementation.

Implications for Practice

The findings from this study have implications for principal leaders. Educators can use the results of this study to impact PBIS implementation in their respective school buildings. The following includes implications to inform practitioners.

1. **Principals of schools implementing PBIS should consider examining reasons for student absences (Associated with Finding 1 and 2).** As noted in finding 1 and 2, an analysis of attendance patterns may reveal students who have high rates of

- absenteeism. Students identified with high rates of absenteeism should be considered for targeted or individualized interventions geared toward increasing school attendance as suggested by the PBIS framework.
2. **Principals of schools implementing PBIS should consider comparing the baseline data on office discipline referrals prior to implementation of PBIS to the outcomes following the first year of implementation (Associated with Finding 3).** According to finding 3, the school that implemented PBIS revealed a reduction in office discipline referrals following the first year of implementation. Comparing the baseline data to the outcomes following the first year of implementation will inform principals and their staff of the types and locations of behaviors that resulted in decreased office discipline referrals. While this implication informs principals of what actions made a difference, it will also reveal areas to be proactively addressed during the second year of implementation.
 3. **Principals of schools implementing PBIS should consider examining office discipline referral data on an annual basis to inform decision-making regarding multiple years of implementation of the PBIS framework (Associated with Finding 4).** Finding 3 showed that there was a reduction in office discipline referrals following the first year of PBIS implementation; however, finding 4 revealed an increase in office discipline referrals the two years following initial implementation. Conducting an annual examination of office discipline referral data would inform building leaders of the numbers, locations, and reasons for office discipline referrals. This examination can inform decisions regarding further implementation of the PBIS framework.
 4. **Principals of schools implementing PBIS should consider an examination of office discipline referrals for their school compared to a school not implementing PBIS with similar demographics. (Associated with Finding 5).** As finding 5 suggests, the school that implemented PBIS did not show a decrease in office discipline referrals when compared to a school not implementing PBIS. Conducting an examination of the office discipline referrals between the two schools may reveal similarities and differences in behavior trends that warrant office discipline referrals and discipline consequences.

5. **Principals of schools implementing PBIS should consider investigating reasons for student suspensions in their building (Associated with Finding 6).** As noted in finding 6, there was not a reduction in student suspensions following the implementation of PBIS. An investigation of student suspensions may identify reasons and patterns of student behavior that warrant removal from school and the locations where the behaviors occurred. These data, obtained from the investigation, can inform decision making about implementation practices and whether there is a need to re-teach behavior expectations. Students who continue to receive a high number of suspensions could be targeted for more intensive interventions.
6. **Principals of schools who want to reduce suspension rates should consider implementing PBIS (Associated with Finding 7).** Finding 7 revealed that there were fewer student suspensions in a school that implemented PBIS as compared to a school that did not implement this framework. Building leaders who have high suspension rates or want to reduce student suspensions should consider implementing school-wide PBIS.

Suggestions for Future Studies

The results of this study contradicted much of the research on the implementation of PBIS. Future research should consider the following suggestions.

1. This study could be replicated in another two years with the same schools. Doing so would provide researchers with data obtained using the new student information management system and the data would include over five years of PBIS implementation.
2. This study could be repeated and include a qualitative component, making it a mixed methods study, to explore principal's perceptions on PBIS implementation with regard to absences, office discipline referrals, and suspensions.
3. This study could be repeated and include an investigation of excused and unexcused absences, office discipline referrals, and suspensions.
4. This study could be replicated at the division or state level.
5. This study could be replicated in a school division that has a central level leadership team in place.

6. Researchers could investigate the impact of PBIS at the elementary, middle, and high school level to include a measure of implementation fidelity for the schools implementing PBIS.
7. Researchers could examine if there are differences in absences, office discipline referrals, and suspensions when broken down by gender, race, ethnicity, and disability status following the implementation of PBIS.
8. Researchers could investigate whether there is a difference in absences, office discipline referrals, and suspensions for students who matriculate from schools that are implementing PBIS at the elementary, middle, and high school levels as compared to those that do not have PBIS at each level.

Conclusion

The purpose of this quantitative study was to determine if school-wide implementation of PBIS resulted in changes in student absences, office discipline referrals, and suspensions in one middle school and to determine what difference, if any, was there in student absences, office discipline referrals, and suspensions between a school implementing PBIS and a school not implementing PBIS. This study found that the school-wide implementation of PBIS in a middle school resulted in a decrease in office discipline referrals during the first year of implementation when compared to the baseline data. This study also found suspensions were lower by the second year of implementation in the school that implemented PBIS when compared to a school not implementing PBIS. Overall, the remaining findings contradicted existing research on school-wide implementation of PBIS. While the results were not as expected, the premise behind PBIS, teaching prosocial behavior expectations to students in the same manner as academic contents, bears further exploration. This study did not include an analysis of the critical features of PBIS. The current researcher questions if the lack of a central office leadership team leading the implementation of PBIS may have yielded different results.

Reflections

Based on the review of research and my knowledge surrounding the implementation of PBIS, I anticipated a significant change in student absences, office discipline referrals, and suspensions in the school that implemented PBIS. I also anticipated that the school

implementing PBIS would reveal fewer student absences, office discipline referrals, and suspensions than the school that did not implement PBIS. As educators, why is it that we focus on finding interventions for students who struggle with academic contents, yet we punish and suspend students who do not behave in a manner expected in the school environment? It makes sense to find interventions and teach students behavior expectations in a similar way as is done for those students who require academic intervention. While reviewing the data collected on the cumulative change in absences, office discipline referrals, and suspensions for each school, the school that implemented PBIS revealed a less negative change in two of the three variables (office discipline referrals and suspensions) even though the statistical analyses did not reveal this trend. Given this observation, I believe that the implementation of PBIS warrants further exploration to identify what factors may have contributed to the findings. I would make the following adjustments if I were to conduct this study again.

1. Include more than two schools in the study and include data on the fidelity of implementation for the schools implementing PBIS.
2. Include a qualitative component to the study to explore principal's perceptions on the impact and implementation of PBIS.
3. Investigate the impact of PBIS implementation for feeder schools (i.e., an elementary school that feeds into a middle school) that are and are not implementing PBIS.

When I began this journey, I initially set out to explore the impact that school-wide implementation of PBIS had on student academic achievement. Following my preliminary examination and further discussions with the faculty of Virginia Tech, I found that my topic of interest was premature for the division of focus. Instead, it was important to determine if there was a change in the variables studied following implementation of PBIS. The results of this study provide information to this school division for future planning and implementation of PBIS. Through this process, I have grown to learn that the results are “the results.” As a researcher, you must report your findings and find solutions or ideas for further studies to help inform decision-making practices for other educators. I am forever grateful to the faculty of Virginia Tech for guiding me in this process. You have helped me to question educational practices, broaden my lens by looking at data, seeking out what the research suggests, and identifying implications for practitioners.

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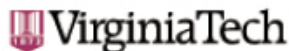
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APPENDIX A

TRAINING IN HUMAN SUBJECTS PROTECTION



APPENDIX B
IRB APPROVAL FROM VIRGINIA POLYTECHNIC INSTITUTE AND STATE
UNIVERSITY



Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website <http://www.irb.vt.edu>

MEMORANDUM

DATE: December 5, 2016
TO: Ted S Price, Lisa Marie Perkins Mrs
FROM: Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)
PROTOCOL TITLE: School-Wide Implementation of Positive Behavior Interventions and Supports and the Impact on Student Attendance, Office Discipline Referrals, and Suspensions in Two Suburban Middle Schools
IRB NUMBER: 16-1095

Effective December 5, 2016, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at: <http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Exempt, under 45 CFR 46.110 category(ies) 4**
Protocol Approval Date: **December 5, 2016**
Protocol Expiration Date: **N/A**
Continuing Review Due Date*: **N/A**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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APPENDIX C

PERMISSION FROM SCHOOL DIVISION TO CONDUCT STUDY

December 6, 2016

Dear Mrs. Lisa M. Perkins:

Your request to conduct research for your doctoral dissertation titled *School-Wide Implementation of Positive Behavior Interventions and Supports and the Impact on Student Attendance, Office Discipline Referrals, and Suspensions in Two Suburban Middle Schools* at Virginia Polytechnic Institute and State University is approved. The approval is granted with the understanding that the following conditions will apply:

- Participation of administrators, counselors, and teachers is strictly voluntary.
- Parent permission must be obtained for student participation (if applicable).
- Names of individuals, school names or the name of the school division cannot be used in the reporting of the results of your findings without prior permission from the Department of Staff Development.
- All copies, distribution, retrieval of materials and arrangement of interviews/collections will be your responsibility.
- Questions/procedures must be limited to those detailed in your prospectus.

You may use this letter as a cover letter when contacting administrators and teachers. Should you have further questions, please feel free to contact me at

Sincerely,

(Research Approval)