EFFECTS OF POSITIVE BEHAVIOR INTERVENTIONS AND SUPPORTS ON MIDDLE SCHOOL STUDENT ACHIEVEMENT

by

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ABSTRACT

Today's teachers face more frequent and more severe challenges than perhaps any generation of teachers that have come before them. Administrators attempt to support teaching in an environment of ever-increasing accountability and dwindling financial resources with new and innovative strategies. One such strategy employed by modern educators has been the Positive Behavior Interventions and Supports (PBIS) model for clear behavioral expectations and pyramids of intervention for targeted support for students. This study compared a middle school that employs PBIS with a middle school that does not, to determine if there was any statistical improvement realized on academic achievement. Two diverse middle schools with high numbers of low socioeconomic status students were studied. Eighth grade reading Standards of Learning assessment results were examined to determine what, if any, impact PBIS programs had on student achievement. The eighth grade reading scores were examined from the 2010-2011 school year, since this was the first year of implementation. The study results found that there was no statistically significant difference in achievement between the overall populations of the control school and the experimental school. The study also found that there was no statistically significant difference between male and female achievement at the control and experimental schools. The study did find that there was a statistically significant difference between Caucasian students at the control school and experimental school, as well as between minority students at the control school and experimental school.

Keywords: Positive Behavior Interventions and Supports, achievement, discipline

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CHAPTER ONE: INTRODUCTION

As educational systems enter the twenty-first century, they are faced with many of the same problems that have haunted educators throughout history. With these traditional challenges in conjunction with the modern deterioration of the traditional family, as well as a departure from traditional values and ethics, school systems are not only responsible for educating children, but also the unenviable task of raising them as well. As Hoyle, Marshall, and Yell (2011) state, "concerns about discipline problems and violence in public schools have resulted in efforts to find effective methods to maintain safe school environments" (p. 164). School systems have always influenced children educationally and socially. With the increasing levels of accountability now facing school divisions in the United States and abroad, educational leaders must find effective and efficient methods for managing educational outcomes, as well as behavioral expectations. In order to streamline this process for maximum efficiency, some modern educational administrators are leaning toward data-driven solutions.

As Sugai (2007) states, "schools are experiencing improved student outcomes when the use of data-based decision making is increased" (p. 115). This study examined effects of data-driven behavioral modification programs, such as Positive Behavior Interventions and Supports (PBIS), on student achievement. While it has been well-documented in many studies that Positive Behavior Interventions and Supports programs have an impact on improving student behavior and overall school climate, there has been very little research that explores the correlation between PBIS programs and increased student achievement. This study was conducted to determine if there is a direct relationship between the implementation of PBIS programs and improved student achievement on eighth grade Virginia Standards of Learning English Reading assessments.

Background

With dwindling financial resources and increased accountability issues, educators are forced to find effective and efficient ways to handle discipline. One such philosophy is Positive Behavior Interventions and Supports (PBIS). PBIS has been implemented in diverse settings across the nation and has yielded positive results. Positive Behavior Interventions and Supports is data-driven and the changes it effects can be documented and reported to funding agencies, such as local Boards of Supervisors and Departments of Education. Through implementation of PBIS, using fidelity across a school or school system, incidents of student discipline should decrease while student attendance should increase. Through the realization of increased attendance and lower incidents of student disruption within the classroom, an increase of effective instructional time should be the result for schools implementing PBIS.

The trend in public education is to get the greatest results for the taxpayer dollar. With federally mandated programs, such as No Child Left Behind, school divisions are forced to find a way to deal with student discipline that is outside the traditional method of detentions and suspensions. Positive Behavior Interventions and Supports programs are designed to build a culture of compliance and support within a school. A unique aspect of the Tier Two and Tier Three interventions of PBIS is that they not only determine consequences of certain behaviors, but also attempt to determine causes of those behaviors. Once those causes are defined, PBIS teams can identify re-entry programs for groups, as in Tier Two interventions. They can also be as specific as programs designed for specific individuals, as in Tier Three interventions.

Sugai (2007) points out that without an organized program in place, using data-driven interventions, positive behavior modification is not effective and can often fall short of the desired outcomes. Broad-based Tier One interventions are necessary to create behavior changes

within a school. These Tier One interventions, for example, may address tardy policies or dress codes that impact all students in the building. The next step in organizational change in behavior modification is labeled Tier Two interventions. While these interventions still target a relatively large number of students, they tend to be more focused on curbing or changing particular problem behaviors. An example is students who have truancy issues or attendance problems could be placed on a check in/check out system with a staff member who would serve as a mentor, staying in frequent contact with the student and offering individual strategies and support, in order to change specific behaviors. The third tier of support is individualized interventions for students that exhibit behavior issues and have not responded to Tier One or Tier Two interventions. Tier Three interventions are individualized and tailored specifically to meet the needs of individual students. In many instances, schools create intensive support teams, which include school counselors, social workers, health care professionals, school psychologists, administrators, and teachers. These teams target and work individually with students who have major discipline issues and have not responded to early interventions. Sugai (2007) points out that all of these interventions are data-driven, in order to assess effectiveness and to assess the necessity for program adjustment (p. 115).

There are very few studies related to the impact of PBIS on student achievement, and even fewer which focus on middle school students. Lane, Wehby, Robertson, and Rogers (2007) conducted research related to this concept, but only involved two high schools. McIntosh, Bennett, and Price (2011) studied eleven elementary and one secondary school, while Scott, White, Algozzine, and Algozzine (2009) conducted research at a high poverty elementary school. For this reason, it is difficult to generalize the findings to middle school populations.

Problem Statement

In a climate of ever-increasing accountability, student achievement becomes more paramount. Ways to improve student achievement include not only incorporating effective instructional delivery methods, but also how to improve student behavior to ensure student focus and engagement in an efficiently managed classroom environment. A popular model for school-wide behavior modification is the Positive Behavior Interventions and Supports program. According to Sugai and Horner (2008), Positive Behavior Interventions and Supports emphasize "effective systemic and individualized behavioral interventions for achieving social and learning outcomes while preventing problem behaviors" (as cited in Sullivan, Long, & Kucera, 2011, p. 971). To better understand the effects of student behavior support programs on student achievement, a study will be conducted examining the impact of school-wide Positive Behavior Interventions and Supports programs on student achievement for middle school students. Middle schools with and without formal programs in place will be examined along with results of Virginia Standards of Learning eighth grade English Reading assessments.

Purpose Statement

The purpose of this ex-post facto causal comparative study is to test the theory that Positive Behavior Interventions and Supports programs have a positive impact on student achievement at the middle school level. The study compares the independent variable PBIS programs to the dependent variable student achievement in the participant pool of eighth grade students in one experimental middle school implementing a PBIS program and one control middle school not implementing such a program. The independent variable of interest will be generally defined as Positive Behavior Interventions and Supports. According to Sugai and Lewis (as cited in Cohen, Kincaid, & Childs, 2007), PBIS "is an intervention intended to

improve the climate of schools using system-wide positive behavioral interventions, including a positively stated purpose, clear expectations backed up by specific rules, and procedures for encouraging adherence to and discouraging violations of the expectations" (p. 203). The dependent variable of interest student achievement will be generally defined as scores on the eighth grade English Reading Virginia Standards of Learning assessment.

Significance of the Study

A large number of studies have been conducted to show that PBIS and other effective school-wide discipline programs alter school climate and student behavior. Few studies exist to show that PBIS and other similar programs impact student achievement. Furthermore, the few studies that have been conducted on this topic have been done using data from elementary and high schools, but almost no data has been collected on the middle school level to demonstrate whether PBIS programs have an effect on student achievement. The results of this study will be a useful tool for school boards, school administration, and policy makers on the local and state levels when making decisions as to whether significant investments of time, energy, and finances should be dedicated toward programs such as PBIS from a school district and state school board level. The results of this study should offer valuable information for stakeholders to consider when allocating already dwindling pools of resources. This study's findings should allow policy makers and stakeholders to be more efficient when considering the best course of action when attempting to improve student achievement. The study's results should also help focus efforts of local and state school boards in deciding the best program to implement, in order to impact standardized test scores.

Research Questions

The research questions for this study are:

Research question 1: Is there a difference in student achievement in middle schools that employ Positive Behavior Interventions and Supports programs versus schools that do not employ Positive Behavior Intervention and Supports programs, specifically on eighth grade Virginia Standards of Learning Reading assessment scores?

Research question 2: Is there a difference in student achievement between male and female students in middle schools that employ Positive Behavior Interventions and Supports programs versus schools that do not employ Positive Behavior Intervention and Supports programs, specifically on eighth grade Virginia Standards of Learning Reading assessment scores?

Research question 3: Is there a difference in student achievement between minority and Caucasian students in middle schools that employ Positive Behavior Interventions and Supports programs versus schools that do not employ Positive Behavior Intervention and Supports programs, specifically on eighth grade Virginia Standards of Learning Reading assessment scores?

There is a need for this type of study, in order to substantiate anecdotal evidence that schools with better attendance, classroom management, and overall positive climate have more academic success and score higher on standardized testing. There have been a number of studies done on the effectiveness of behavior modification, in the PBIS programs in schools. The gap in the literature as related to PBIS is with studies that support the notion that PBIS has a positive impact on academic success. Some studies have been conducted by researchers, such as Lane, Wehby, Robertson, and Rogers (2007), McIntosh, Bennett, and Price (2011), and Scott, White, Algozzine, and Algozzine (2009). The research in these studies was conducted at the elementary

and high school levels. This study will focus on academic achievement as related to PBIS on the middle school level exclusively.

Null Hypotheses

The null hypotheses that will be used for this study will be:

Null hypothesis 1, H_o is: There is no statistically significant difference in student achievement on eighth grade Virginia Standards of Learning Reading assessments in schools that employ Positive Behavior Interventions and Supports programs versus schools that do not employ Positive Behavior Interventions and Supports programs.

Null hypothesis 2, H_o is: There is no statistically significant difference in student achievement between male students in schools that employ Positive Behavior Interventions and Supports programs and male students in schools that do not employ Positive Behavior Interventions and Supports programs, nor is there a statistically significant difference in student achievement between female students in schools that employ Positive Behavior Interventions and Supports programs and female students in schools that do not employ Positive Behavior Interventions and Supports programs on eighth grade Virginia Standards of Learning Reading assessments.

Null hypothesis 3, H_o is: There is no statistically significant difference in student achievement between minority students in schools that employ Positive Behavior Interventions and Supports programs and minority students in schools that do not employ Positive Behavior Interventions and Supports programs, nor is there a statistically significant difference in student achievement between Caucasian students in schools that employ Positive Behavior Interventions and Supports programs and Caucasian students in schools that do not employ Positive Behavior

Interventions and Supports programs on eighth grade Virginia Standards of Learning Reading assessments.

Identification of Variables

The independent variable for the study is Positive Behavior Interventions and Supports. The school implementing Positive Behavior Interventions and Supports is the experimental school, while the school that does not implement such a program is the control school. The dependent variable is student achievement, indicated by results on the eighth grade Virginia Standards of Learning English Reading assessment.

Definition of Key Terms

The following terms have been defined to clarify concepts which may be unfamiliar to individuals reading this study.

Fidelity – The process of implementing and following a protocol set forth by the designers of Positive Behavior Interventions and Supports as it was written, not taking liberties to change the prescribed program (Freeman et al., 2006, p. 15).

Office Discipline Referrals – Referrals written on behavior incidents significant enough that they must be reported to school administration for adjudication and the issuing of school consequences (Luiselli et al., 2005, p. 186).

Positive Behavior Interventions and Supports – "A proactive plan for teaching appropriate behaviors and preventing behavior problems by using evidence-based practices to develop an orderly and efficient schoolwide environment" (Hoyle, Marshall & Yell, 2011, p. 164).

Standards of Learning Assessments – Standardized assessments designed by Harcourt-Brace Educational Measurement that every public school in the Commonwealth of Virginia must

administer as part of the curriculum. These assessments serve as a major component of accountability for public schools in Virginia (Virginia Department of Education, 2012).

Tier One Interventions – Universal interventions or supports for all students (Mitchell, Stormont, & Gage, 2011, p. 241).

Tier Two Interventions – "Specialized group or targeted systems designed for students considered at risk" (Mitchell et al., 2011, p. 242).

Tier Three Interventions – High levels of personalized, intensive support for the approximately 5% of students who demonstrate severe behavior problems (Mitchell et al., 2011, p. 242).

CHAPTER TWO: REVIEW OF LITERATURE

In the 1950's, the largest problems reported by teachers were talking in class and chewing gum. Today's educators face a myriad of challenges, of which the least would be chewing gum and talking in class. If a survey were conducted today, teachers would report such issues as pregnant students, various levels of violence, bullying, drug-related issues, as well as major disrespect and defiance. All of these factors not only weigh heavily on a child's ability to achieve, but also on a teacher's ability to instruct.

With increased accountability, school administrators are under ever-increasing pressure to make the school day and educational process as efficient as possible. As Sailor, Stowe, Turnbull, and Kleinhammer-Tramill (2007) state, "schools should be held accountable for student learning of social-behavioral skills as well as acquisition of academic skills and for providing a safe environment for teaching and learning" (p. 373). In an attempt to capitalize on every educational minute and dollar, schools are looking to implement programs such as Positive Behavior Interventions and Supports (PBIS). According to Sugai and Lewis (as cited in Cohen, Kincaid, & Childs, 2007), Positive Behavior Interventions and Supports "is an intervention intended to improve the climate of schools using system-wide positive behavioral interventions, including a positively stated purpose, clear expectations backed up by specific rules, and procedures for encouraging adherence to and discouraging violations of the expectations" (p. 203). Programs such as these have a foundation in behavioral theory and resiliency theory (Boulden, 2010, p. 19). They focus on creating climates of high expectations and establishing intervention tiers of targeted support. In an environment of increased accountability through high-stakes testing, "schools have become increasingly interested in identifying strategies to reduce disruptive and violent behaviors and raise pro-social behaviors in students" (Medley,

Little, & Akin-Little, 2008, p. 93). For this reason, many schools have sought to employ programs that focus on Positive Behavior Interventions and Supports (PBIS).

Theoretical Framework

In order for one to fully comprehend the philosophy that drives the Positive Behavior Interventions and Supports programs, one must look at the concept of behaviorism and the basic principles behind behaviorism theories. Behaviorism has its roots in the beginning of the twentieth century. Psychology was in its relative infancy at the time when John B. Watson gave birth to "his viewpoint behaviorism" (Moore, 2011, p. 451). However, while Watson may be credited as the father of the theory of behaviorism, later contributions by B. F. Skinner would further define and refine this philosophy to what is known today as radical behaviorism. According to Moore (2011), "philosophy of science underlying behavior analysis is called radical behaviorism" (p. 456). As cited by Moore (2011), in the year before his death in 1989, Skinner defined radical behaviorism as "the philosophy of science of behavior treated as a subject matter in its own right apart from internal explanations, mental or physiological" (p. 456).

As a program, Positive Behavior Interventions and Supports works off of the principle of tiered interventions, in order to affect behavioral change in individuals. In the school setting, it has always been assumed that children who behave better will, in turn, achieve better academically. The Positive Behavior Interventions and Supports system relies heavily on one of the four major principles of Skinner's radical behaviorism. This is called the analytic concept. The analytic concept relies on what Skinner calls a "reinforcer" (Moore, 2011, p. 457). Moore (2011) explains a reinforcer using the following terminology: "it is a consequence of a response that increases the probability of the response" (p. 456). Positive Behavior Interventions and

Supports works off of the concept that through tiered interventions, an individual can be offered a "reinforcer," in order to entice or encourage that individual to continue to exhibit the desired behavior. In many traditional discipline programs, individuals are offered deterrents, in order to try to prohibit or prevent negative behaviors. With Positive Behavior Interventions and Supports, the exact opposite takes place. Students are rewarded for exhibiting the desired behavior. Supporters of this program argue that positive reinforcement is more effective than negative consequences in generating the desired behavior change.

Behaviorism also plays a factor in the tiered intervention system of Positive Behavior Interventions and Supports. Tiered interventions attempt to impact behavior in the early stages, in order to be proactive with behavior change, meaning that this program tries to intervene and redirect minor negative behaviors before they become major behavioral issues that must be dealt with through more significant consequences. By reinforcing and rewarding positive behaviors early and often, dealing with minor incidents consistently and immediately with positive interventions and redirection, Positive Behavior Interventions and Supports attempts to create a positive behavioral foundation that an individual can use to cope with larger behavioral challenges as they arise. The hope that supporters of this program maintain is that these students' backgrounds and foundations would then prevent them from making poor choices leading to negative consequences. This theoretical foundation of behaviorism and the components that relate to Positive Behavior Interventions and Supports demonstrate how the originators of the program have based their theory on a solid background and on one of psychology's major historical concepts.

In reviewing the literature, many prominent researchers dealing with Positive Behavior Interventions and Supports programs stand out. Dr. George Sugai, of the University of

Connecticut, and co-director of the Office of Special Education Programs' Center on Positive Behavioral Interventions and Supports, is one of the prominent names throughout the literature. In the research that he and others, such as Dr. Rob Horner, Dr. Glenn Dunlap, and Dr. Bob Algozzine have conducted, many themes emerge. According to Dunlap and Fox (2011), "in the last 10 years, researchers became interested in effective, comprehensive models for promoting healthy social-emotional development and preventing persistent challenging behavior within early care and education programs" (p. 337). The research shows that behavior expectations must be clear, interventions must be early, pyramids of interventions for varying levels of support must be established, and positive reinforcement must be provided frequently.

As Eber, Sugai, Smith, and Scott (2002) state, "students who display severe emotional and behavior problems in our schools represent a relatively small proportion of a school's total enrollment; however, they require significant amounts of expertise, time, and resources" (p. 171). With that being said, it is crucial in a world of increased accountability to find ways to effectively provide behavior supports and interventions, in an effort to protect instructional time for all students. Boulden (2010) studied the school-wide Behavior Intervention Support Team program, a school-wide behavior management program, and demonstrated its foundation in the behavioral theory. As Anderson and Kincaid's research has shown, programs such as the Behavior Intervention Support Team and other school-wide Positive Behavior Interventions and Supports (as cited in Boulden, 2010), are "grounded in behavioral theory, which emphasizes the interplay between physiology and environment, and the ability to affect behavior through environmental manipulations" (p. 19).

Marr, Audette, White, Ellis, and Algozzine (2002) discuss the increasing demands of administrators in schools with teachers lacking specialized resources to deal with increasingly

disruptive and violent behaviors. The goal of both teachers and administrators is to create a "school environment that is safe and conducive to learning" (Marr et al., 2002, p. 70). A proactive approach to ensure a safe and conducive learning environment is to collaboratively establish school-wide and classroom expectations along with frequent positive reinforcement. Another key component is to "include data-based strategies for supporting all students along a continuum of need and intensity based on a three-tiered model of prevention" (Freeman, Eber, Anderson, Irvin, Horner, Bounds, & Dunlap, 2006, p. 4).

Literature Review

Characteristics of School-wide Positive Behavior Interventions and Supports.

According to Freiberg and Lamb (2009), in a "traditional model of classroom management, based on behaviorism, discipline is teacher-directed" (p. 99). In this traditional model, teachers typically react by immediately removing a student from the classroom and/or writing an office referral as the first reaction to a discipline issue. In modern programs, such as Positive Behavior Interventions and Supports, teachers implement a progression of tiered interventions to minor classroom incidents, in order to keep the student in the classroom and manage the behavior before it progresses to a level for which even more serious actions are necessary. Teachers also use positive encouragement and reinforcement along with attempts to build personal connections with students, in order to make them feel more comfortable and at ease interacting with instructors and peers. "Students need to know that they have a personal connection with their teacher, principal, or another adult within the school" (Freiberg & Lamb, 2009, p. 102). Schools with Positive Behavior Interventions and Supports in place implement programs such as "Gotcha" reward systems and Check In/Check Out that ensure that students have at least some positive interaction with an adult in the building during the course of every school day.

Considering the emotional issues that many students harbor and in many cases the sheer lack of parental support at home, this Check In/Check Out process becomes important not only for discipline purposes, but also for the emotional well-being of the students involved. This is an important step for students with challenges to learn to build connections with their school and school staff.

When establishing school-wide Positive Behavior Interventions and Supports programs, administration, teachers, students, and parents collaboratively develop school-wide expectations for appropriate behaviors. These programs reflect "an emphasis on prevention, data-based decision making and problem solving, teaching and encouraging prosocial skills to support procedures intended to inhibit problem behaviors, and accurate and sustained implementation of effective practices" (Sugai, 2007, p. 116). According to Freeman et al. (2006), "school staff learn a common language as they begin implementing educational practices and interventions aimed at benefiting students with and without significant disabilities" (p. 5). There is a focus on establishing a three-tiered pyramid of interventions to provide varying levels of support to students with different behavior and social needs. Tier One interventions are preventative measures for all students within the learning community. Tier Two interventions target a smaller group of students who are more at risk for behavior issues. Many times, schools will implement Check In/Check Out systems for these students to assist them with ensuring social success each day. Tier Three interventions are reserved for a "smaller number of students whose needs are more individualized than is included in primary and secondary prevention practices" (Freeman et al., 2006, p. 6).

According to Hoyle, Marshall, and Yell (2011), "Tier 2 interventions are designed to use with small groups of students who need more assistance than given in the Tier 1 universal level"

(p. 165). One of the most popular Tier Two interventions is the Check In/Check Out program. This Tier Two intervention can be adapted to address any number of issues that groups of students may encounter. This also can be used on the elementary, middle, and high school levels. One example of a Check In/Check Out program on the high school level is targeting a group of seniors in danger of not graduating, due to excessive absences. The students most at risk would be identified by the Positive Behavior Interventions and Supports team. Staff members would then be asked to serve as graduation mentors for these students. Once mentors had been identified, students are assigned a daily mentor with whom they have a daily Check In/Check Out procedure to follow. This procedure is consistent among all of the mentors and involves a progress monitoring procedure for each student in each class. This progress is monitored on a daily, weekly, and quarterly basis. This mentor also acts as a resource to help students make up work they had missed during absences and/or receive tutoring or remediation in content missed during their absences. This same Check In/Check Out process could be adapted for discipline issues or other social issues that students may experience and for which they need interventions. This not only provides a data stream for student progress monitoring, but also creates an important human element connection. The student's mentor is yet another positive adult resource for these students that are already having trouble connecting in some manner in the school environment. In many instances, a close bond and a real connection is nurtured between the mentor and mentee. This is important in creating a level of connectedness between the student and the school.

Schools that have effectively implemented Positive Behavior Interventions and Supports programs, such as Excelsior Springs Middle School in Missouri, have reached a level of staff involvement that is broad-based and encompasses the majority of staff members at some level of

the Positive Behavior Interventions and Supports program. Schools that reach this level of implementation distribute responsibilities among several different teams made up of faculty and staff members. This not only distributes the responsibilities of program implementation and monitoring, but also ensures that many, if not all, staff members play an active role in the program. This also allows schools to recruit faculty and staff members and use their natural areas of expertise to aid in the implementation process. A school's math or statistics teacher may head up the data team and be responsible for data collection and distribution. A school counselor may be in charge of the mentor program and help train other staff members in effective mentoring protocols. This is yet another layer of creating buy-in and involvement on the staff level so that staff members feel they are truly a part of the process and have ownership of the program. Excelsior Springs Middle School has teams to support each tier. "The tier one team reviews schoolwide discipline trends and student incentive programs" (Hubbuch & Stucker, 2012, p. 44). Tier One interventions impact every student. Having a strong foundation in Tier One and data collection is essential in creating an effective Positive Behavior Interventions and Supports program within the school. "The tier two team monitors each student's progress with the goal of reducing and eventually eliminating the student's interventions" (Hubbuch & Stucker, 2012, p. 45). It must be made evident to students that their participation in Tier Two interventions is not a permanent outcome. The ultimate goal with Tier Two interventions is to equip students with the tools to self-manage their behaviors. This self-management is part of the maturation and growth process. Once students exhibit this self-management, they can be released from Tier Two interventions, but it is important that they continue to be monitored along the way. According to Hubbuch and Stucker (2012), "the tier three team meets to support students who require intensive individual support" (p. 45). Tier Three interventions are one-on-

one and deal specifically with a student's individual needs. This is the smallest percentage of students, thus representing the top of the pyramid of interventions. In most cases, these Tier Three interventions involve some of the school's professional support staff, such as school counselors, school psychologists, school social workers, and public health nurses. According to Sabatino, Pricher, and Alvarez (2012), "school social workers are also equipped to seek out other resources, such as grants and donations, that can fund programs that require an investment in training and curriculum" (p. 13). These interventions are developed individually based on student data and feedback from teachers and staff. As a part of the Tier Three process, "functional behavior assessments are conducted and individual interventions are implemented and monitored" (Hubbuch & Stucker, 2012, p. 45).

It is essential for all school personnel working in schools with school-wide Positive Behavior Interventions and Supports programs to use common language referencing expectations and supports. According to Dunlop (2013), "PBIS implementation starts with a team that includes teachers, counselors, administrators, bus drivers, lunch workers, and other staff actively engaged with students" (p. 39). This is essential from the standpoint of creating a school-wide climate of consistency with routines, procedures, and language. The most effective Positive Behavior Interventions and Supports schools are able to create buy-in among all faculty and staff members and they use common language and consistent reinforcement to allow students to manage their own behaviors in an effective and desired manner; students thus gain important allies throughout the building at all times of the day. With this type of buy-in and consistency, a student can literally be encompassed by a Positive Behavior Interventions and Supports environment from the moment he steps onto the bus at the bus stop, throughout the academic day, and right up until the time he exits the bus to return home. This, of course, is a best-case,

ideal scenario for Positive Behavior Interventions and Supports. The schools that can realize this type of fidelity experience the greatest benefits from the program.

Dunlop (2013) also mentions one of the most overlooked aspects of Positive Behavior Interventions and Supports programs' implementation: "evidence-based intervention practices vary broadly and can focus on the school, the classroom, individual students, forces outside the classroom, and family engagement" (p. 40). This commonly overlooked aspect is that of outside community and parent engagement in Positive Behavior Interventions and Supports practices. The community can be involved through several different aspects. Some schools have effectively engaged community partnerships with businesses and faith-based organizations to enhance their Positive Behavior Interventions and Supports programs. By gathering support from community businesses, not only can incentive programs find sponsorship and much-needed resources, but also schools can use guest speakers as reinforcement mechanisms within the building. Having an owner or manager from a local business speak at a school's Student of the Month incentive luncheon is very powerful and resonates with students. In many instances, schools have successfully partnered with local churches or faith-based organizations and facilitated student recognition ceremonies, dinners, or luncheons. Local church congregations and organizations within churches, such as a Women's Club or retired members association, are often looking for opportunities to reach out to young people in schools. There are many examples of local churches hosting recognition ceremonies for schools and providing meals and a facility in which to hold the ceremony. This not only provides an opportunity for outreach for the faith-based organization and much-needed resources for the Positive Behavior Interventions and Supports program within the school.

Another often overlooked group is parents and other family members of students. While building, establishing, and maintaining acceptable routines and procedures in a student's school day is vital to the concept of Positive Behavior Interventions and Supports programs, it is even more impactful to the student if the same terminology, routines, and consistency can be carried over from the school environment into the home environment. Instead of helping a student manage behavior for six or seven hours of the school day, a successful bridge or partnership into the home with parents and family members can extend the influence of Positive Behavior Interventions and Supports programs to a student's entire day, both inside and outside the school setting. With this type of consistency and partnership between schools, parents, and family members, students are much more likely to make Positive Behavior Interventions and Supports a part of their everyday life. This also helps eliminate a student receiving mixed messages.

Faculty members must be proactive in their teaching of school-wide and classroom expectations and must provide frequent reinforcement related to these expectations. Rewards systems and other positive reinforcement tools are used to promote appropriate behaviors and interactions. A major component of an effective Positive Behavior Interventions and Supports program is the "active collection and use of data for decision making" (Freeman et al., 2006, p. 6). This data can include a variety of sources, including data related to discipline, achievement, and attendance.

Tools to Measure Effectiveness of Implementation. In order to assess the effectiveness of any program, evaluation tools are necessary. To determine how well school-wide Positive Behavior Interventions and Supports programs are implemented, effective evaluation tools are essential. These tools allow "school personnel to ask and answer necessary questions to ensure that the practice is meeting the school's needs and continues to be implemented with fidelity"

(McIntosh, Bennett, & Price, 2011, p. 49). Evaluation must begin before implementation to assess the school's needs and during implementation to determine fidelity and effectiveness of the program. According to Horner, Sugai, and Lewis-Palmer (as cited in McIntosh et al., 2011), effective evaluation tools require reliable measures, provide meaningful feedback, and present frequent, comprehensible results (p. 49).

McIntosh, Bennett, and Price (2011) sought to determine the effectiveness of School-Wide Positive Behavior Support (SWPBS) systems in 12 of the 49 schools in a British Columbia, Canada, school district. The study examined the fidelity of implementation, the schools' level of poverty, and the effects on school culture and academic achievement.

The most widely used evaluation tool for school-wide Positive Behavior Interventions and Supports is the *School-Wide Evaluation Tool*. The *School-Wide Evaluation Tool* "contains seven subscales: Expectations Defined, Behavioral Expectations Taught, On-Going System for Rewarding Behavioral Expectations, System for Responding to Behavioral Violations, Monitoring and Decision-Making, Management, and District-Level Support" (Cohen, Kincaid, & Childs, 2007, p. 204). This is a valuable tool, but it requires prior training, on-site evaluation, and access to all stakeholders, including students. Of greatest concern is that a school's implementation can be scored at 80% "without having many critical features of" school-wide Positive Behavior Interventions and Supports, "such as lesson plans and an evaluation plan in place" (Cohen et al., 2007, p. 204).

With the increased number of schools implementing Positive Behavior Interventions and Supports programs, it is more difficult for trained personnel to go on-site to evaluate. To assist with allowing school-based teams to assess their own fidelity and effectiveness of implementation, the *School-Wide Benchmarks of Quality* self-assessment scale was developed.

The *School-Wide Benchmarks of Quality* "is a 53-item rating scale that measures the degree of fidelity with which a school is implementing" school-wide Positive Behavior Interventions and Supports (Cohen, Kincaid, & Childs, 2007, p. 204). The results of Cohen, Kincaid, and Childs' (2007) study indicate that this tool "is a reliable, valid, efficient, and useful instrument for measuring the degree of implementation of the primary or universal level of" Positive Behavior Interventions and Supports "application within individual schools" (p. 210). Limitations related to this tool include the chance for rater bias, since this is a self-report tool, and a lack of observation on-site by trained evaluators (Cohen et al., 2007, p. 212).

Clonan, Lopez, Rymarchyk, and Davison (2004) studied two urban elementary schools with students at high risk for violent and other related behaviors. Both schools were in their second year of Positive Behavior Interventions and Supports programs. Office referral data and teacher perceptions of student behavior were studied. One school demonstrated greater success in implementation, which appeared to have been related to fidelity of implementation and faculty and staff (including bus drivers') professional development. Various tools were used to assess effectiveness and fidelity of implementation, including faculty and staff surveys, the Oregon School Safety Survey, the Pro-social Behavior Rating Scale, the Intervention Rating Profile, and the Effective Behavior Support Survey (Clonan et al., 2004, pp. 87-88).

The research, as well as the Positive Behavior Interventions and Supports model itself, emphasizes that the program, by its own design, is data and fact-driven. By virtue of being data-driven, it is extremely important that evaluation be done, not only in an efficient manner, but also in an effective manner. Only through effective evaluation can school administrators truly gauge the usefulness and impact that Positive Behavior Interventions and Supports is having on students. Sabatino, Pricher, and Alvarez (2012) point out that while school administrators are

uniquely qualified and extensively trained in academic interventions, they must sometimes turn their attention toward other instructional support personnel to find useful alternatives when dealing with behavioral interventions (p. 12). Sabatino, et al. (2012) point out that the use of specialized personnel, such as school social workers may be better equipped and more adept at identifying student needs as they pertain to behavioral interventions (p. 12). Another aspect where school social workers can be instrumental is in being able to assist school administration by providing information from students on their Response to Interventions (RTI).

A strategy used in schools when dealing with assessing the effectiveness of Positive Behavior Interventions and Supports programs would be to determine whether the programs are achieving the following outcomes:

- "A body of research demonstrates positive outcomes with the use of the program, including decreases in the likelihood of dropping out of school
- The populations studied include students with learning, emotional, or behavioral disabilities
- Rural and urban schools have had positive results
- A detailed implementation handbook is available
- Although training is recommended, it is not required" (Sabatino, et al., 2012, p. 12).

While in some instances it may be difficult for school administrators to relinquish some control of their behavior intervention programs to non-instructional staff, the fresh approach and unique perspective brought by support staff, such as school social workers, can be extremely beneficial. Sabatino, et al. (2012) point out that "school social workers are trained in research methods and

statistical analyses, making them excellent consumers of scientifically supported interventions" (p. 14).

Without question, school administrators are vital in the implementation of Positive Behavior Interventions and Supports programs. Without a building principal's vision and desire to implement an effective discipline intervention system, Positive Behavior Interventions and Supports would be totally ineffective. To have the greatest impact on individual student behavior and school culture and climate, it is necessary that all stakeholders be on board with the program. In order to assess program success, Sabatino, Pricher, & Alvarez (2012) believe that principals should ask tough questions: Should those implementing the program meet specific requirements or qualifications? What is more important for program success, new knowledge and skills or observation and rehearsal? To ensure intervention components are in place, are experts available? What is needed to ensure the intervention is successful? Are there ever good reasons for not applying interventions? Perhaps the most pertinent question during these challenging economic times is: What financial resources are necessary to have effective implementation and sustained interventions? (p. 14).

School Culture and Climate. Caldarella, Shatzer, Gray, Young, and Young (2011) studied two middle schools (grades six and seven) in the western part of the United States. One middle school had implemented a School-Wide Positive Behavior Supports program for four years, while the other school served as the control, implementing no similar program. The results of the study indicated that school climate improved and discipline violations decreased with the implementation of a School-Wide Positive Behavior Supports program. The results "revealed meaningful improvements in teachers' perceptions of the ability of the school to communicate and cooperate with key stakeholders (e.g., parents, students, community members)

and assist students in the learning process" (Caldarella et al., 2011, p. 8). These factors can have a tremendous impact on improving school climate and culture. A school-wide Positive Behavior Interventions and Supports program "constitutes a pedagogy for social development that can be fully integrated into the culture of schools and embedded in the ongoing teaching-learning process" (Sailor, Stowe, Turnbull, & Kleinhammer-Tramill, 2007, p. 369).

According to Reinke, Herman, and Stormont (2013), "research on classroom-level practices, teacher efficacy, and emotional exhaustion are important areas for exploration within schools implementing" Positive Behavior Interventions and Supports (p. 40). While the primary focus of Positive Behavior Interventions and Supports programs has been student-centered, the teacher morale aspect and the culture-building qualities of the program cannot be overlooked. Many schools choose to start the implementation process by focusing on teacher morale and buy-in. Once teachers experience the impact of Positive Behavior Interventions and Supports programs personally, they tend to become advocates and proponents when it comes to implementing the system within the building. One way that Positive Behavior Interventions and Supports programs benefit teachers is the fact that the program offers them a framework to build classroom management techniques. This first occurs through building-level expectations, routines, and procedures. These reinforce individual classroom expectations, routines, and procedures, and in turn, directly support individual teacher efforts to manage behaviors in their own classrooms. The rewards and recognition systems that are key components of Positive Behavior Interventions and Supports programs can also be extended and implemented with staff. Programs such as Teacher of the Month, Rookie of the Year, Teacher of the Year, and teacher-selected recognitions are powerful tools in creating a cohesive community among the staff and improving staff morale. This positive recognition is consistent with the concepts of Positive

Behavior Interventions and Supports and, in most cases, is just as impactful on teachers as it is on students.

Schools have also used surveys and survey feedback, as well as staff blogs, in order to allow individuals the opportunity to provide "shout outs" for colleagues that they feel have added to the school climate in a positive manner. Staff surveys are an effective tool from the standpoint that Positive Behavior Interventions and Supports is a staff/teacher-driven initiative. Teachers identify areas that need to be addressed. Teachers also prioritize needs from their perspective. It is essential that teachers and staff have opportunities not only to offer their input, but also to realize that their input is valued and used when determining courses of action. This creates buy-in and support for the program on an individual level. By having this buy-in, a room-to-room consistency throughout the entire building can be maintained. Without this type of support and buy-in from faculty and staff, program fidelity cannot be realized. The lack of fidelity has a negative impact on the effectiveness of Positive Behavior Interventions and Supports programs.

The culture of the community from which students originate plays a large role in young people's behavioral expectations as they walk through the school's doors. Some schools are fortunate enough to have communities that share the behavioral expectations that the school has for its student body. Other schools, usually serving children from more socioeconomically challenged backgrounds, do not have the convenience of the benefit of children who arrive at school understanding the acceptable behavior expectations. Many times, this can be attributed to the fact that children of low socioeconomic backgrounds tend to come from single-parent homes more often than children of middle class or more privileged backgrounds. Single-parent and low-income households tend to have more "latchkey children" whose time at home tends to be more self-governed with little to no adult support within the home. Many of these parents tend

to be working multiple jobs or have jobs for which they may work evening shifts which may prevent them from being with the child in the afternoons or evenings. With a deterioration of the family unit in the United States, schools are experiencing more and more students who require parenting, as well as an education. Some psychologists have attributed increases in poor behavior and violence within our society to the deterioration of the family unit.

A unique feature of Positive Behavior Interventions and Supports programs that differentiates it from other behavior modification programs is that Positive Behavior Interventions and Supports programs incorporate opportunities for student involvement and participation in the process. This is not only an element of the program, but also an important part of the culture development within the school building. According to Hubbuch and Stucker (2012), "creating opportunities for students to have their voices heard is an important part of a safe, student-centered culture" (p. 45). Just as Positive Behavior Interventions and Supports programs garner faculty and staff buy-in and support, they also create a sense of student involvement and ownership. It is no secret that students would be much more likely to embrace the program if it meets their needs and interests and they feel that they are a part of its creation. According to Hubbuch and Stucker (2012), "including the student voice is essential to effective problem solving" (p. 45). This is another example of how a Positive Behavior Interventions and Supports program's framework is standardized, but the implementation and details of the program can be customized to meet the specific areas of need of a school, a staff, and a student body.

People, by nature, want to belong to something. In past decades, this need to belong was satiated by the family unit. Individuals were a part of a larger group and could feel as if they were supported and also that they contributed to that group. Today, without the family unit,

young people search for other groups in which to belong. Sometimes these are athletic teams, social cliques, or, in unfortunate situations, gangs or criminal groups. Positive Behavior Interventions and Supports seek to create positive supports by reinforcing positive behavior in large groups. The hope is that the peer pressure will be positive, in order to be involved in reinforcement activities and reward opportunities set by the program. It is important that young people strive to be a part of the group "doing the right thing" rather than to succumb to the influences of those groups engaged in self-destructive and inappropriate behaviors.

Though it is not highlighted directly in elements of research involving Positive Behavior Interventions and Supports, the program has an overlap with community partnerships with schools. Many schools reach out to business and community groups, as well as faith-based organizations, in order to offer positive reinforcement tools for young people who demonstrate the desired behavior inside their school building and, more importantly, inside their academic classrooms. Some ideas used by schools for positive behavior interventions include the ability to accumulate positive points to access student lounge areas or to enjoy positive student reward luncheons or banquets. These lounges, banquets, and luncheons many times are sponsored by and financially supported by community businesses, individuals, and faith-based organizations. Student lounge resources, such as flat screen televisions, electronic gaming systems, and furniture, are often donated by local businesses looking for positive ways to become involved in the educational process. The meals for luncheons and in many instances the venue for these banquets are either prepared by or hosted by local businesses and faith-based organizations. Other opportunities that community support provides include motivational speakers, mentors, and local individuals who can offer firsthand accounts of how they have been successful after being raised in the same neighborhoods and the same schools as current students. These

inspirational figures can discuss personal successes experienced after reaping the benefits of the Positive Behavior Interventions and Supports program.

Almost without variation, the development of a Positive Behavior Interventions and Supports school culture is a vital element in almost every source's guide to effective school change. According to Dunlop (2013), Positive Behavior Interventions and Supports "offers school leaders and staff the opportunity to proactively reduce disciplinary infractions and out-of-school suspensions and, more importantly, to build an overall positive school environment where students feel supported and prepared to learn, no matter what their background or circumstances" (p. 40). This essential element cannot be overlooked and is perhaps the most important factor in long-term school change when implementing Positive Behavior Interventions and Supports. In order to develop a school culture and climate that is conducive to positive interaction with students, it is essential that the administration achieve "buy in" from the school's faculty and staff. It is, after all, part of the Positive Behavior Interventions and Supports model that many of the tiers of intervention are created and/or decided upon as faculty initiatives. The data reveals for schools its needs and the individuals or groups that should be targeted for interventions. It is input from the faculty and staff that determines which interventions are implemented.

With Tier One interventions, staff is crucial from the standpoint that it will be staff members carrying out the intervention policy and making it meaningful and successful for the students. According to Hubbuch and Stucker (2012), "school culture and climate are shaped by the policies and procedures designed to encourage and maintain learner engagement" (p. 44). After all, engaged learners are the ultimate goal of any successful educational system. Who better to determine how to reach students than the faculty and staff that work with them on a daily basis within that school? Teachers are vital to the support systems within schools

(Hubbuch & Stucker, 2012, p. 44). Creating a school culture that enables students to feel safe and invested in their education will produce more engaged learners that take personal pride in their school and in their own success. Giving students opportunities for ownership within the Positive Behavior Interventions and Supports process is also an important aspect in affecting change. Hubbuch and Stucker (2012) explain that "creating opportunities for students to have their voices heard is an important part of a safe, student-centered culture" (p. 45). Implementing policies and giving opportunities for students and staff to feel ownership is part of the process of building a culture of collaborative decision making that makes schools better places for staff and student learning.

Creating an effective school climate is an important element of Positive Behavior Interventions and Supports. This is supported in the research in multiple instances. According to Schuta, Mauricio, and Comerford (2012), "principals have to do it the right way, and that involves several elements:

- A vision of what they want to accomplish
- Support from their leaders
- Cooperation from their staff members
- A solid PBIS approach that includes evidence-based strategies, in-depth professional development, and ongoing support" (p. 34).

While this process is initiated and led by the building principal, it still remains very much a teacher-led initiative when it comes to the implementation and design phases of the program. As mentioned earlier, in the most effective Positive Behavior Interventions and Supports schools, there is also a student-initiated and led phase of the program. While it is the implementation team, comprised of teachers, that handles the bulk of the design, elements such as incentive

programs and recognition programs can be turned over to student groups and teams, in order to make them feel a sense of ownership in the process and ensure that they are truly stakeholders in the Positive Behavior Interventions and Supports program. Another aspect in which schools can involve students is in the design of slogans and videos that can be shown during morning announcements or posted around the building to reinforce desired expectations, procedures, routines, and behaviors. When all of these elements are combined, a school has been effective at creating value for every stakeholder group in the process. According to Schuta, Mauricio, and Comerford (2012), "the culture begins to change from hierarchical to collegial, and everyone begins to trust one another and work together to make changes happen" (p. 35).

Student Discipline. Many classroom teachers report discipline violations, such as disruption, minor defiance, and disrespect. "Although many of these behaviors may seem 'mild' when compared to discipline problems that occur in media headlines (e.g., weapons in schools, school shootings), they occur far more often and have a negative effect on the learning of other students and on the classroom culture" (Anderson & Spaulding, 2007, p. 27). The reality facing schools today is that while major incidents tend to happen more frequently than they did in past generations, schools have implemented such practices as crisis teams and crisis planning, in order to cope with and prepare for such events. In the scope of an entire school instructional calendar, these major crises or incidents tend to occupy a much less significant amount of time if one were to compare them to the cumulative time spent by classroom teachers and administrators dealing with what are relatively minor issues. Through Positive Behavior Interventions and Supports programs, these behaviors could be avoided or minimized to a degree that they have negligible effect on time-on-task activities within the classroom. This goes back to the philosophy of paying attention to the small issues so that the large issues will take care of

themselves. If schools are more efficient managing small issues and moving forward with academic tasks, they will not lose significant amounts of instructional time. As a result, they may actually experience a recovery in instructional time. An example of managing small behavior, in order to regain instructional time is Positive Behavior Interventions and Supports programs addressing students that are excessively tardy to class. If a staff were to identify this as being an area that needed attention within the school, the Positive Behavior Interventions and Supports team would look at an intervention that would address students being late to class. The team would then track the results of that intervention by gathering data to see if the intervention was effective. If it was not effective, the team would reassess the approach. If the intervention was effective, the team could then track the data and keep the staff informed as to the impact the intervention had on the reduction of the number of tardies to class. This should translate to increased student academic achievement.

Wieder (2012) discussed the effects that a reward system had on student discipline and attendance at a middle school (p. 27). The school implemented a Positive Behavior Interventions and Supports program several years ago and in 2010 and 2011 students were able to earn different incentives for exhibiting positive and desired behaviors within the classroom and throughout the school day. This is a key element in Positive Behavior Interventions and Supports programs, in that it promotes the desired behaviors through a school-wide recognition and rewards system. This reinforces procedures and routines that the school wishes students to exhibit. Rather than focusing the school's efforts on punitive or negative reinforcement when an undesirable behavior is exhibited, Positive Behavior Interventions and Supports programs emphasize rewarding students for behaving in acceptable and desired manners. Some of the rewards systems utilized in Wieder's school were earning prizes and special dress days. The

system that the school used to promote the behavior was issuing "cat cash" (Wieder, 2012, p. 28). Students were issued cat cash when staff members witnessed them exhibiting desired behaviors or doing something positive for another student or teacher. Once students accumulated a certain amount of cat cash, they could redeem it for various privileges. This is just one example of a reward and recognition system. Other schools use incentives such as Roar Bucks, Pride Points, and Bear Tickets. Some middle schools even go as far as to teach a lesson in simple economics to their students, using these incentive systems. While Wieder did not mention it, some schools even call the accumulation of these incentives behavior equity. Students learn how to build equity through their positive behavior and how to capitalize on their equity, in order to participate in an incentive of their choice. Through these types of incentive programs, Wieder (2012) mentions that the school experienced "a slight decrease in the percent of student office referrals and a slight increase in attendance" (p. 28).

Luiselli, Putnam, Handler, and Feinberg (2005) studied an urban elementary school in the Midwestern United States that had implemented Positive Behavior Interventions and Supports. The number and types of office referrals and suspensions and the results on standardized tests were examined. The school's program focused on a school-wide effort with support from administration support, preventative measures, and positive reinforcements. The study's results indicated a decrease in the number of office referrals and an improvement in academic achievement. Office referral numbers increased during the first three months of implementation, but decreased during the last two months of that year and again decreased during years two and three of implementation (Luiselli et al., 2005, p. 189).

Scott, White, Algozzine, and Algozzine (2009) conducted a study on the Positive Unified Behavior Support (PUBS) program. They wanted to see whether teachers who had been trained

to use the Positive Unified Behavior Support system would more frequently and more effectively reinforce appropriate behaviors. They also desired to see if the Positive Unified Behavior Support trained teachers would experience fewer discipline problems within their classrooms. According to Scott et al. (2009), "teachers in treatment schools provided reinforcement approximately twice as often as their peers in control schools and they corrected their students less than students in the control classrooms" (p. 45).

Positive Behavior Interventions and Supports have proven to be successful not only because it is a data-driven, fact-based program, but also because it changes a school culture and student behavior by teaching students how to better cope with all situations, from minor incidents to major crises. Positive Behavior Interventions and Supports programs achieve this by reinforcing desired behaviors and rewarding students for acceptable behavior outcomes. While students are still disciplined and given consequences for inappropriate behaviors, they receive less attention for unacceptable and undesired behaviors and attention is focused on rewarding appropriate responses to situations. A major focus of Positive Behavior Interventions and Supports is the Response to Intervention strategy. Student Action Teams focus on how to educate students and equip them with the skills necessary to behave in an appropriate manner, rather than focus on punitive measures for inappropriate actions. Schuta, Mauricio, and Comerford (2012) give examples of how schools in Buffalo, New York, have used Positive Behavior Interventions and Supports programs to improve the overall school culture, but more importantly to help children manage their own behavior. Schuta, et al. (2012) state that "a Positive Behavior Support approach to behavior management begins by asking, how can we change the system setting or structure to help Johnny stop talking out in class and learn the skills he needs to be academically and socially successful? Rather than, what can I do to Johnny to

make him stop talking out in class?" (p. 33). This change in philosophy among instructional staff is a key factor in realizing the maximum potential for positive impact that Positive Behavior Interventions and Supports can have on academic achievement, and in affecting real change in student behaviors. By making students more comfortable, allowing them to have more positive interactions with staff, and feel more connected with their school, these Buffalo, New York, schools have been able to realize changes among students, such as increased daily attendance and reduction in discipline. The school itself and the faculty report higher feelings of respect, responsibility, and collegiality among staff (Schuta, et al., 2012, p. 33).

Student Achievement. Lassen, Steele, and Sailor (2006) studied an urban middle school over a three-year implementation period of Positive Behavior Interventions and Supports. They examined data on office referrals, suspensions, standardized test scores, and fidelity of implementation of the program. They found that the number of office referrals and suspensions significantly decreased, while the scores on reading and math standardized assessments increased. As Lassen, Steele, and Sailor (2006) state, "schools function more effectively, academically and behaviorally, when students are in class" (p. 709). For this reason, there was an increase in reading and math standardized test scores over a three-year period.

Positive Behavior Interventions and Supports' concept of proactive behavior management is not unique. Other similar programs exist, such as Consistency Management and Cooperative Discipline. This program "emphasizes preventing discipline problems before they begin, improving school and classroom climate as well as student behavior, and effectively managing instructional time, resulting in greater student achievement" (Freiberg, Huzinec, & Templeton, 2009, p. 64). It has been used with success in urban settings in school systems in the United States. In an archival, post-hoc, quasi-experimental study of 350 students from fourteen

urban elementary schools implementing Consistency Management and Cooperative Discipline compared to 350 students from control schools not implementing the program, greater academic achievement was evident. The students in the schools implementing Consistency Management and Cooperative Discipline were ranked on average in the 67th percentile for mathematics and the 64th percentile for reading. The students in the control schools not implementing the program ranked on average in the 50th percentile in mathematics and the 50th percentile in reading (Freiberg, Huzinec, & Templeton, 2009, p. 63).

While these similar programs exist, Positive Behavior Interventions and Supports is used more frequently than others and has even been adopted by entire state educational organizations for use throughout the public schools they serve. The structure and design of Positive Behavior Interventions and Supports programs combined with the emphasis on data make it an attractive option for schools, as well as school divisions. The built-in mechanisms for measuring effectiveness and fidelity are also important elements in making the program desirable. It is teacher-driven and relies heavily on data evaluation to guide the implementation process. These are all qualities that make the program efficient and flexible. It is extremely adaptable and can meet the needs of almost any school environment. Positive Behavior Interventions and Supports and its data-driven behavior outcomes seem to attract great interest from individual schools and from entire state departments of education. No matter the title of the program, schools with consistent expectations, tiers of intervention, and a focus on positive school climates tend to experience greater academic achievement.

Summary

As school administrators struggle with increased accountability, decreased financial resources, and increasingly challenging school populations, traditional methods for classroom

management simply no longer meet the needs of many schools. Just as the years of research have improved instructional delivery methodology and techniques to make them more targeted, effective, and efficient, the same can be observed with student discipline practices. Schools and school divisions are also looking to improve instructional methodology, in order to prepare students for success on high-stakes standardized tests. Many school divisions have also made concerted efforts to increase the rigor and relevance of their instructional delivery, in order to better prepare students to be competitive in a twenty-first century environment. With this increased rigor and relevance, many school divisions are choosing to implement the Project Based Learning approach to instruction. Project Based Learning requires that teachers provide students with much more freedom than is traditionally experienced in the classroom. In order to manage this increased freedom, Positive Behavior Interventions and Supports programs become even more necessary, in order to provide students with acceptable routines and procedures, as well as internal coping skills. Students respond to instructional methods differently. The same can be said for discipline methods.

Positive Behavior Interventions and Supports systems use data to implement targeted, tiered intervention strategies in a proactive manner, in an attempt to manage these behaviors before they become major disruptions in the classroom and educational setting. According to Dunlop (2013), "the framework relies on the use of the data to inform initial decisions about the selection, implementation, and ongoing progress monitoring of the evidence-based practices" (p. 39). This is one aspect that makes Positive Behavior Interventions and Supports programs attractive to schools and school divisions. Through constant data monitoring, schools can successfully target areas of need with specific interventions. This allows schools to customize their Positive Behavior Interventions and Supports program to meet the specific needs of that

particular school. Positive Behavior Interventions and Supports programs provide a common structure and framework, but they are not a one-size-fits-all solution. The framework and structure can be customized using the variety of interventions and consistent techniques provided through Positive Behavior Interventions and Supports. This adaptability makes the program not only efficient, but also effective across a broad spectrum of school environments.

Relying heavily on modeling positive behaviors, rewarding those positive behaviors, and operating in a consistent school-wide manner, students have clear expectations that do not change from day-to-day or classroom-to-classroom. This consistent positive reinforcement allows students to better cope with the pressures of peer influences and allows students to make positive behavior decisions more consistently.

While there is an abundance of research that clearly shows that Positive Behavior Interventions and Supports programs have a positive impact on behavior and the reduction in the number of office referrals and more serious behavior infractions and consequences, less research has been conducted to show if this reduction in behavior and consequences correlates to an increase in student academic achievement. This would seem to be a logical relationship, but can it be supported through research data and scientific study?

This study seeks to determine if a significant increase in student achievement is realized in middle schools that have implemented Positive Behavior Interventions and Supports programs. It is important in today's educational world because students in diverse schools with high numbers of lower socioeconomic students often score lower on high-stakes tests due to behavior distractions (Thomas, Bierman, Thompson, & Powers, 2008, p. 519). While creating a safe and orderly school environment is a significant goal for school administrators, the ultimate overall goal is to make significant gains in student achievement. According to Reinke, Herman,

and Stormont (2013), "teachers who spend more time teaching have students who learn more. By definition, students who are engaged in instruction (e.g., listening to the teacher, writing, answering a question) are not displaying disruptive or off-task behaviors (e.g., getting out of seat, talking when inappropriate)" (p. 41). With national education programs, such as No Child Left Behind, setting achievement goals at 100% by 2014, discipline is a factor, but achievement is of utmost importance. In order to accurately measure the worthiness of Positive Behavior Interventions and Supports programs, a correlation must be established between improved discipline and increased achievement. Only then will schools understand if Positive Behavior Interventions and Supports is worth the finances and time invested.

CHAPTER THREE: METHODOLOGY

Introduction

This study is important in today's educational world because students in diverse schools with high numbers of lower socioeconomic students often score lower on high-stakes tests due to behavior distractions (Thomas, Bierman, Thompson, & Powers, 2008, p. 519). For this reason, it is essential to research ways to reduce incidents of classroom disruptions and violent behaviors. With Positive Behavior Interventions and Supports (PBIS) programs in place, the hope would be that discipline violations would decrease and students would become more accountable, responsible citizens. Along with this decreased discipline, an increase in time-on-task and an improvement in the instructional environment should maximize students' abilities to realize success academically. This would manifest itself through increased achievement and higher scores on high-stakes standardized tests, such as the Virginia Standards of Learning assessments. For the purposes of this study, an ex-post facto causal comparative model will be utilized for this study.

Research Design

This study utilized a causal comparative design using ex post facto data. Since two schools were selected based on demographics and existence or non-existence of a school-wide PBIS program, there was no opportunity for random assignment. Virginia Standards of Learning reading assessment results for grade eight were examined for the first year of PBIS implementation to assess whether there was an increase in scores due to school-wide expectations for behavior success. In order to reduce the threat to internal validity which is associated with possible pre-existing group differences, a *t* test was utilized using a post-test only design.

Teachers in the experimental group schools had all had Positive Behavior Interventions and Supports training through professional development opportunities offered by the school division's Office of Behavior Supports. The Office of Behavior Supports trained individuals to serve as implementation committees within each school. These committees then trained staff and implemented the program within their home schools. The school division's Office of Behavior Supports provides continued professional development, as well as program resources, as schools move through higher tiers of the process, in order to meet the needs of students within their buildings. These tiers are specific in nature to meet the needs of unique circumstances within each school. The experimental school had Positive Behavior Interventions and Supports programs, expectations, and discipline models in place and implemented with their student body. The control school did not have any form of Positive Behavior Interventions and Supports training or implementation afforded to their faculty or student body.

Participants

Participants were students from two middle schools in a large, suburban county school system of over 60,000 students. The county is located in Central Virginia. The total study population included approximately 280 students that had been exposed to Positive Behavior Interventions and Supports and approximately 282 students that had not been exposed to such a program. These students ranged in age from twelve to fifteen. Participants included all individuals taking the reading assessment in grade eight.

Both schools were demographically similar, in terms of racial composition and socioeconomic levels. The experimental middle school began implementation of a school-wide Positive Behavior Interventions and Supports program during the 2010-2011 school year, while

the control middle school did not implement such a program during that year. Non-equivalent groups were used, since it was not possible to randomly assign participants for this study.

Participant groups. The experimental group consisted of students taking the English reading Standards of Learning assessment as eighth graders in the 2010-2011 school year in a school implementing Positive Behavior Interventions and Supports programs. The control group consisted of students in eighth grade in the 2010-2011 school year in a school that did not utilize the Positive Behavior Interventions and Supports program as part of the school's disciplinary practices.

Experimental group teacher training. The school that comprised the experimental group had received consistent training in Positive Behavior Interventions and Supports provided by the school division's Positive Behavior Supports Coordinator. This training was provided to school-selected committees known as Effective School-wide Discipline groups. All participants in the group received the same training, which was consistent with the state's Positive Behavior Interventions and Supports standards. The Effective School-wide Discipline committees for each participating school then returned to their home school, provided professional development for remaining faculty and staff members, and assisted with implementation of the Positive Behavior Interventions and Supports programs. These groups also served as the Effective School-wide Discipline implementation committees until the school had put into action sufficient infrastructures to ensure that the program could maintain itself with a level of fidelity and effectiveness to benefit the school.

Setting

The setting for this study was two middle schools located in a southwest suburb of a large, urban city in Central Virginia. The following demographic information was accessed using the school division's database. Both schools were within one county school system consisting of twelve middle schools. The county's population encompasses all three class ranges: high, middle, and lower class. The two schools chosen for this study draw from lower and middle class populations within the county. These schools draw from similar socioeconomic populations and with few exceptions have relatively compatible school demographics. The two schools in the study are not only similar in student demographic make-up, but also in student body size. They are the two smallest middle schools in the county and both are located in the central portion of the county. For the purposes of this study, these schools will be referred to by their pseudonyms. Middle School A (MSA) is the control school, while Middle School B (MSB) is the experimental school.

Middle School A. Middle School A has a student population of 857. MSA has a racial composition broken down into the following percentages: Asian 1%, Black 29.79%, Hispanic 14.89%, Native American 0.47%, and White 52.96%. As stated earlier, this school draws from school attendance zones of similar socioeconomic composition. The county uses the term "disadvantaged" to socioeconomically categorize students who receive free and/or reduced lunch. Middle School A has an average disadvantaged population of 50%.

Middle School B. Middle School B has a student population of 864. MSB has a racial composition broken down into the following percentages: Asian 2%, Black 46.25%, Hispanic 10.97%, Native American 0.24%, and White 33.97%. Middle School B has an average disadvantaged population of 51%.

Instrumentation

The instrument used in this study was the Commonwealth of Virginia's Standards of Learning English Reading test. This test is administered to all sixth, seventh, and eighth grade students in Virginia to assess their level of knowledge and ability in the area of reading; however, for the purposes of this study, only the eighth grade assessment results will be examined. These assessments are administered yearly under strict guidelines from the Virginia Department of Education to which every public school must adhere. The guidelines are specific to the testing window and test conditions and require that each school report any testing irregularities that occur during the testing process.

These tests were designed by Harcourt-Brace Educational Measurement specifically for the Commonwealth of Virginia and aligned directly to the state's Standards of Learning. These assessments have been utilized in Virginia since 1998. These tests consist of multiple choice items and writing prompts. "The Standards of Learning Assessments are criterion-referenced tests" (Walk, 2005, p. 37). They have a standard error of measurement of 15 scale score points (Virginia Department of Education, 2012). This indicates that a student with a raw score of 30 and a scaled score of 403 would potentially score between 388 to 418 if retaking the test with the same level of knowledge.

Measures of reliability and validity are key factors in any test instruments. In order to quantify the reliability of the Virginia Standards of Learning assessments, the Virginia Board of Education uses the *Cronbach's Coefficient Alpha* statistic. According to the Virginia Department of Education (2010), "a basic estimate of internal consistency reliability is *Cronbach's Coefficient Alpha* statistic" (p. 33). This "ranges in value from 0.0 to 1.0, where higher values indicate a greater proportion of observed score variance is true score variance"

(Virginia Department of Education, 2010, p. 33). The *Cronbach's Coefficient Alpha* for the Virginia Standards of Learning eighth grade Reading assessment range from 0.87 to 0.88 (Virginia Department of Education, 2010, p. 80). According to the Virginia Department of Education, "The most important criterion for establishing the validity of any assessment is whether the test truly measures what it is supposed to measure" (as cited in Walk, 2005, p. 36). The Virginia Department of Education established test validity by using a statistical correlation with other national tests. According to the Virginia Department of Education (2010), "In the content areas and grade levels where there were reasonable matches of content, school pass rates on the SOL tests were previously statistically correlated with national percentile ranks on the *Stanford 9* and/or pass rates on the LPT" (p. 39). In comparison, the SOL English: Reading/Literature and Research and the *Stanford 9* Reading tests had a school-level rank order correlation of .80 to .81 (Virginia Department of Education, 2010, p. 39). These two statistics indicate that the Virginia Standards of Learning Reading assessment is considered high in validity and reliability. These tests are accepted as the primary assessment for student ability and knowledge. The state's Standards of Learning test scores are also used to gauge school and teacher performance as it relates to instructional success.

Procedures

After seeking internal review board (IRB) approval and permission from Chesterfield County Public Schools, the researcher proceeded with the process of gathering Virginia Department of Education Standards of Learning assessment results using school system databases, as well as Virginia School Report Card information. The researcher determined the year of implementation of Positive Behavior Interventions and Supports for each school by using data from the Chesterfield County Office of Behavior Supports. Results from grade eight

Virginia Standards of Learning assessments in Reading were researched for the first year of implementation. Non-PBIS schools' test results for the same year were examined. The researcher looked for trends in data to determine if assessment results increased as a result of Positive Behavior Interventions and Supports implementation.

Data Analysis

A *t* test for independent means was used to analyze the data. Gall, Gall, and Borg (2007) state that "use of the *t* test in causal-comparative research depends on three assumptions" (p. 315). These three assumptions are that scores form an interval, populations are normally distributed, and that variances are equal (Gall, Gall, & Borg, 2007, p. 315). Gall, Gall, and Borg (2007) also state that "the *t* distribution is used to determine the level of statistical significance of an observed difference between sample means" (p. 139). Using a *t* distribution, the null hypothesis was rejected if $p < .05$. Standards of Learning assessment results for Reading were examined. Descriptive statistics, including mean, median, mode, and standard deviation were determined. All data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 19.

CHAPTER FOUR: FINDINGS

This study's intent was to examine middle school English Reading Standards of Learning assessment scores and determine what, if any, impact Positive Behavior Interventions and Supports (PBIS) programs have on student achievement. This study looked at two middle schools in a large suburban county school system, one of which implemented Positive Behavior Interventions and Supports, while the other school did not implement such a program. These two schools were chosen based on similarity of school populations, demographics, socioeconomic status of school clientele, and size. Since both schools are from the same school system, they received relatively similar supports and resources other than the Positive Behavior Interventions and Supports program.

The purpose of this causal comparative study was to determine if Positive Behavior Interventions and Supports programs have a positive impact on student achievement at the middle school level, specifically related to achievement on eighth grade English Reading Standards of Learning assessments. The study compared the independent variable, Positive Behavior Interventions and Supports programs, to the dependent variable, student achievement, for eighth grade students on the English Reading Standards of Learning assessment in one middle school implementing Positive Behavior Interventions and Supports and one middle school not implementing such a program. The independent variable of interest, Positive Behavior Interventions and Supports, is "a proactive plan for teaching appropriate behaviors and preventing behavior problems by using evidence-based practices to develop an orderly and efficient schoolwide environment" (Hoyle, Marshall & Yell, 2011, p. 164). The dependent variable of interest, student achievement, will be generally defined as scores on the eighth grade Virginia English Reading Standards of Learning assessment.

The instrument selected to determine level of academic achievement was the eighth grade Virginia Standards of Learning English Reading assessment. Though this study focuses only on eighth grade students, the test is administered to all middle school students in grades six, seven, and eight. These assessments are administered yearly under consistent state guidelines from the Virginia Department of Education that every Virginia public school must follow. The windows for administration of the test are determined by the state, and all schools must complete testing during the prescribed timeframe. All schools must be consistent with administration practices. Any deviation from the prescribed guidelines must be reported to the state as testing irregularities. These tests have been administered in the Commonwealth of Virginia since 1998. The tests are designed by Harcourt-Brace Educational Measurement specifically for the Commonwealth of Virginia and are not only aligned directly to the state's Standards of Learning, but also have a high level of reliability and validity.

Both schools involved in this study administered the assessment during the same state-prescribed testing window. Students in Middle School B, the experimental school, completed this assessment after being exposed to a Positive Behavior Interventions and Supports program for nine months. Students in Middle School A, the control school, completed this assessment without exposure to any such program. The eighth grade Virginia English Reading Standards of Learning test was chosen for this study because reading is tested yearly beginning in grade three in the Commonwealth of Virginia. By grade eight, students are more accustomed to the rigor and testing process of Standards of Learning Reading assessments. Also, since eighth grade students have had two prior years of middle school experience, they are more acclimated to behavior expectations at the middle school level. Reading was also chosen because it is a fundamental skill necessary for success in all academic core content areas.

Demographics

The two middle schools chosen for this study were similar in size, demographics, and socioeconomic composition. The two schools were similar in these areas in total school population, grades six through eight, as well as in the target population of the eighth grade. Table 1 shows the demographics of Middle Schools A and B.

Table 1

Demographic Characteristics of the Students of Middle School A and Middle School B

Aspect	Middle School A	Middle School B
Total Enrollment	857	864
Eighth Grade Enrollment	313	310
Eighth Graders Tested	281	271
Overall Male Enrollment	397	402
Overall Female Enrollment	460	462
Eighth Grade Males Tested	130	126
Eighth Grade Females Tested	151	145
Overall Minority Enrollment	403	570
Overall White Enrollment	454	294
Eighth Grade Minority Tested	133	176
Eighth Grade White Tested	148	95
Disadvantaged Population	429	441

Due to several factors, the eighth grade enrollment in both schools is slightly higher than the number of students in the eighth grade that were tested on the eighth grade English Reading

Standards of Learning assessment. Some of these factors include absenteeism, out of school suspension, students that are English Language Learners and have testing exemptions, and students with disabilities that complete alternate portfolio assessments, such as the Virginia Grade Level Alternative and the Virginia Alternative Assessment Program. Because these students participate in other assessment methods or are exempt from the required testing, the total eighth grade enrollment and the number of eighth graders tested differ.

Setting and Context

The two schools used for the purposes of this study are middle schools in the same large, suburban Central Virginia county. Both schools are relatively close geographically and both of their attendance zones border an urban school zone. Both schools experience some transiency issues that are relative to their close proximity to the neighboring city.

Both middle schools have a large percentage of faculty members with advanced degrees. Middle School A has 50% of the faculty with a master's degree and 1% of the faculty has achieved a doctoral degree. Middle School B has 45% of its faculty possessing a master's degree and 3% with a doctoral degree. The student-teacher ratio at Middle School A is 18.5 to 1, while the ratio at Middle School B is 19.2 to 1. The median family income in the attendance zone for Middle School A is $53,555. The median family income in the attendance zone for Middle School B is $65,762.

Middle School B implemented a Positive Behavior Interventions and Supports program at the beginning of the 2010-2011 school year. The implementation was facilitated by a school-based implementation team and training was conducted by the school division coordinator for Positive Behavior Interventions and Supports. Middle School A did not receive any such training, nor did they implement a program such as Positive Behavior Interventions and Supports

prior to or during the 2010-2011 school year. Both schools carried out the grade eight Virginia English Reading Standards of Learning assessment according to the guidelines set forth by the Commonwealth of Virginia's Department of Education. These tests were administered during the same May 2011 testing window.

General Overall Results

For the purposes of this study, the eighth grade Virginia English Reading Standards of Learning assessment was used as the instrument to determine academic achievement. Raw scores for each student that completed the eighth grade Virginia English Reading Standards of Learning assessment from the control school and the experimental school were obtained from the participating school division's Department of Research and Evaluation. This study utilized three research questions. These questions sought to determine if Positive Behavior Interventions and Supports impacted student achievement in a statistically significant manner based on overall student results, as well as gender and race for the control school and the experimental school. The descriptive statistics mean, median, mode, standard deviation, and standard error mean for the overall scores of Middle School A and Middle School B are listed in Table 2.

Table 2

Descriptive Statistics for Eighth Grade English Reading Assessment Overall Scores from Middle School A and Middle School B

Descriptive Statistic	Middle School A	Middle School B
Sample Size	281.00	271.00
Mean	479.35	476.50
Median	479.00	474.00
Mode	504.00	494.00

Standard Deviation	60.258	57.593
Standard Error Mean	3.595	3.499

Since the study not only focused on overall student results, but also on gender comparisons, the results for both males and females were examined. Table 3 provides the descriptive statistics for research question number two, which sought to determine the impact on student achievement for males and females for Middle School A and Middle School B.

Table 3

Descriptive Statistics for Eighth Grade English Reading Assessment Scores for Males and Females from Middle School A and Middle School B

Descriptive Statistic	Middle School A		Middle School B	
	Males	Females	Males	Females
Sample Size	130.00	151.00	126.00	145.00
Mean	466.44	490.46	469.19	482.85
Median	479.00	490.00	464.00	474.00
Mode	479.00	504.00	494.00	474.00
Standard Deviation	62.65	55.98	55.57	58.75
Standard Error Mean	5.49	4.56	4.95	4.88

Research question number three for this study sought to determine if there was a statistically significant difference in achievement on the eighth grade Virginia English Reading Standards of Learning assessment scores for Caucasian students and minority students at Middle School A and Middle School B. Table 4 provides the descriptive statistics for research question

number three, which sought to determine impact on student achievement for Caucasian and minority students in Middle School A and Middle School B.

Table 4

Descriptive Statistics for Eighth Grade English Reading Assessment Scores for Caucasian and Minority Students from Middle School A and Middle School B

Descriptive Statistic	Middle School A		Middle School B	
	Caucasian	Minority	Caucasian	Minority
Sample Size	148.00	133.00	95.00	176.00
Mean	478.89	479.86	500.07	463.77
Median	479.00	479.00	494.00	458.00
Mode	504.00	520.00	556.0 0	494.00
Standard Deviation	63.00	57.29	55.54	54.79
Standard Error Mean	5.18	4.97	5.70	4.13

The descriptive statistics outlined in the above tables were used to run independent sample *t* tests to determine if there was a statistically significant difference in the scores between the control group and the experimental group. The details of the results for each research question, as well as the related research hypothesis for each, are examined in the next section.

Results for Null Hypotheses

Null Hypothesis One, H_0. There is no statistically significant difference in student achievement on eighth grade Virginia Standards of Learning Reading assessments in schools that employ Positive Behavior Interventions and Supports programs versus schools that do not employ PBIS programs.

The independent sample *t* test using the significance level of .05 was based on the assumption that the sample scores were normally distributed. The statistical values listed in Table 5 were used to carry out the independent sample *t* test and determine the difference between Middle School A and Middle School B.

Table 5

Means, Standard Deviations, and t-tests (Overall 8th Grade Student Achievement)

Group	n	M	SD	t	p<
Middle School A (8th graders)	281	479.35	60.258		
				.567	.571
Middle School B (8th graders)	271	476.50	57.593		

The results from the statistical analysis failed to reject the null hypothesis one. By virtue of the failure to reject, null hypothesis one was accepted. Based on the English Reading Virginia Standards of Learning assessment scores from the first year of Positive Behavior Interventions and Supports implementation, Middle School B did not demonstrate a statistically significant difference in student achievement as compared to Middle School A.

Null Hypothesis Two, H_0. There is no statistically significant difference in student achievement between male students in schools that employ Positive Behavior Interventions and Supports programs and male students in schools that do not employ Positive Behavior Interventions and Supports programs, nor is there a statistically significant difference in student achievement between female students in schools that employ Positive Behavior Interventions and Supports programs and female students in schools that do not employ Positive Behavior Interventions and Supports programs on eighth grade Virginia Standards of Learning Reading assessments.

The independent sample *t* test using the significance level of .05 was based on the assumption that the sample scores were normally distributed. The statistical values listed in Table 6 were used to carry out the independent sample *t* test to determine the difference between male students at Middle School A and Middle School B.

Table 6

Means, Standard Deviations, and t-tests (Male Student Achievement)

Group	n	M	SD	t	p<
Middle School A (male 8th graders)	130	466.44	62.65		
				-.371	.711
Middle School B (male 8th graders)	126	469.19	55.57		

The statistical values listed in Table 7 were used to carry out the independent sample *t* test to determine the difference between female students at Middle School A and Middle School B.

Table 7

Means, Standard Deviations, and t-tests (Female Student Achievement)

Group	n	M	SD	t	p<
Middle School A (female 8th graders)	151	490.46	55.98		
				1.141	.255
Middle School B (female 8th graders)	145	482.85	58.75		

The results from the statistical analysis failed to reject the null hypothesis two. Based on the English Reading Virginia Standards of Learning assessment scores from the first year of Positive Behavior Interventions and Supports implementation, Middle School B did not realize a

statistically significant difference in student achievement for males or females as compared to males or females at Middle School A.

Null Hypothesis Three, H_o. There is no statistically significant difference in student achievement between minority students in schools that employ Positive Behavior Interventions and Supports programs and minority students in schools that do not employ Positive Behavior Interventions and Supports programs, nor is there a statistically significant difference in student achievement between Caucasian students in schools that employ Positive Behavior Interventions and Supports programs and Caucasian students in schools that do not employ Positive Behavior Interventions and Supports programs on eighth grade Virginia Standards of Learning Reading.

The independent sample *t* test using the significance level of .05 was based on the assumption that the sample scores were normally distributed. The statistical values listed in Table 8 were used to carry out the independent sample *t* test to determine the difference between minority students at Middle School A and Middle School B.

Table 8

Means, Standard Deviations, and t-tests (Minority Student Achievement)

Group	n	M	SD	t	p<
Middle School A (minority 8th graders)	133	479.86	57.29		
				2.507	.013
Middle School B (minority 8th graders)	176	463.77	54.79		

The statistical values listed in Table 9 were used to carry out the independent sample *t* test to determine the difference between non-minority students at Middle School A and Middle School B.

Table 9

Means, Standard Deviations, and t-tests (Non-minority Student Achievement)

Group	n	M	SD	t	p<
Middle School A (non-minority 8th graders)	148	478.89	63.00		
				-2.677	.008
Middle School B (non-minority 8th graders)	95	500.07	55.54		

The results from the statistical analysis rejected the null hypothesis three. Based on the Virginia English Reading Standards of Learning assessment scores from the first year of Positive Behavior Interventions and Supports implementation, Middle School B did demonstrate a statistically significant difference in student achievement for minority students when compared to minority students from Middle School A. Middle School B also demonstrated a statistically significant difference in non-minority students' scores, when compared to non-minority students at Middle School A.

Summary

The results from the statistical analysis for research questions one, two, and three have been outlined in the previous section. Research question number one sought to determine whether there was a statistically significant difference between the overall Virginia English Reading Standards of Learning assessment scores for eighth grade students in Middle School B, which had implemented a Positive Behavior Interventions and Supports program during the 2010-2011 school year, compared to Middle School A, which had not implemented such a program during the 2010-2011 school year. The study conducted a statistical analysis using an independent sample *t* test. Using the *t* test scores, the study revealed that there was no statistically significant difference between eighth grade Reading Standards of Learning

assessment scores at the control school (Middle School A) compared to those at the experimental school (Middle School B) during the 2010-2011 school year. By virtue of these results, the study failed to reject null hypothesis one.

Research question number two examined whether there was a statistically significant difference between the Virginia English Reading Standards of Learning assessment scores for eighth grade male students at Middle School A and Middle School B, as well as eighth grade female students at Middle School A and Middle School B during the 2010-2011 school year. The study conducted a statistical analysis using an independent sample *t* test. Using the *t* test scores, the study revealed that there was no statistically significant difference between eighth grade Reading Standards of Learning assessment scores for male students at the control school (Middle School A) compared to those at the experimental school (Middle School B) during the 2010-2011 school year. The outcome of the statistical analysis was the same for female students at Middle School A and Middle School B during the 2010-2011 school year. Using these results, the study failed to reject null hypothesis two.

Research question number three examined whether there was a statistically significant difference between the Virginia English Reading Standards of Learning assessment scores for eighth grade minority students at Middle School A and Middle School B, as well as eighth grade Caucasian students at Middle School A and Middle School B during the 2010-2011 school year. The study conducted a statistical analysis using an independent sample *t* test. Using the *t* test scores, the study revealed that there was a statistically significant difference between eighth grade Reading Standards of Learning assessment scores for minority students at the control school (Middle School A) compared to those at the experimental school (Middle School B) during the 2010-2011 school year. The outcome of the statistical analysis was the same for

Caucasian students at Middle School A and Middle School B during the 2010-2011 school year. Using these results, the study rejected null hypothesis three.

The study utilized an independent sample *t* test to retain null hypotheses one and two and reject null hypothesis three. Looking at the significance levels, there are significant differences between minority students and Caucasian students in the two schools included in the study. The mean difference is calculated by taking the mean score of the experimental group and subtracting it from the control group. In this case, the minority students in the control group have a higher mean score than the minority students in the experimental condition (the mean for the control was 479.86 and the mean for the experimental was 463.77); therefore, minority students had a statistically significant difference. However, the students in the control group performed better than the minority students in the experimental group. When examining the scores for Caucasian students, the Caucasian students in the experimental group scored better than the Caucasian students in the control group (the mean for the control was 478.89 and the mean for the experimental was 500.07). Chapter Five will examine the implications of the statistical analysis that has been presented in this chapter. Chapter Five will also discuss the limitations of this study and possible recommendations for future research.

CHAPTER FIVE: DISCUSSION

Introduction

This chapter will be divided into four categories. These categories consist of a summary of the findings, a discussion of the findings and implications, an outline of the study limitations and recommendations for future research, and a conclusion. A major issue for current educators is how to deal with student discipline with new regulations of accountability placed on schools by the federal government. With intrusions, such as programs like No Child Left Behind, educators are forced to find ways to educate all children, even those with the most challenging personalities and discipline records. According to Dunlop (2013), in schools that utilize the Positive Behavior Interventions and Supports pyramid of interventions,

> no one gets left out or left behind in the PBIS framework; the focus rests on improving student outcomes along a behavior and academic continuum. It offers school leaders and staff the opportunity to proactively reduce disciplinary infractions and out-of-school suspensions and, more importantly, to build an overall positive school environment where students feel supported and prepared to learn, no matter what their background or circumstances. (p. 40)

As school boards and school administrators struggle to increase student academic performance while coping with dwindling budgets and rising accountability, many have sought programs that will keep students focused and on-task, impact their behavior in a positive way, and manifest these behavior changes in improved student academic achievement. There is a great deal of research that supports Positive Behavior Interventions and Supports programs' impact on student behavior outcomes. This study's goal was to attempt to determine if there is an academic improvement component realized in schools that utilized Positive Behavior

Interventions and Supports programs. As Dunlop (2013) stated, Positive Behavior Interventions and Supports is "defined as a framework for enhancing adoption and implementation of a continuum of evidence-based interventions to achieve academically and behaviorally important outcomes for all students. Through this framework, PBIS seeks to improve school climate, reduce discipline issues, and support academic achievement" (p. 38).

Discussion of Findings and Implications

This study used a quantitative causal comparative design, in order to investigate the impact that Positive Behavior Interventions and Supports programs would have on student achievement. There have been numerous studies conducted on the effects that Positive Behavior Interventions and Supports programs have on discipline; however, there is a gap in the research when it comes to studies that examine the effect that Positive Behavior Interventions and Supports programs have on student academic achievement. This study's goal was to determine if Positive Behavior Interventions and Supports programs are beneficial to implement in schools seeking to not only improve discipline, but also to have a positive impact on student achievement, specifically on improving standardized test scores. This study looked specifically at Positive Behavior Interventions and Supports programs' impact on the eighth grade Virginia English Reading Standards of Learning assessment scores in a suburban middle school that had implemented a Positive Behavior Interventions and Supports program during the 2010-2011 school year. It compared the results to a suburban middle school in the same school district with similar size and demographics that had not implemented a Positive Behavior Interventions and Supports program.

When considering the effectiveness of Positive Behavior Interventions and Supports programs, one must consider the effectiveness of the individuals that make up the Positive

Behavior Interventions and Supports Implementation Team. In some circumstances, schools seek out solutions for their issues. In these circumstances, schools may choose to implement Positive Behavior Interventions and Supports programs. Research shows that staff buy-in is a key component in the success of implementation of Positive Behavior Interventions and Supports programs. In schools that choose to implement Positive Behavior Interventions and Supports, buy-in tends to be relatively high. In Middle School B for this study, it was determined by the school system that this school would be one of several to pilot and implement a Positive Behavior Interventions and Supports program. In a situation where implementation is not a staff decision, buy-in relies heavily on the effectiveness with which the implementation team can promote the program to faculty and staff members.

Two major factors to be considered for this particular study are related to the effectiveness of the implementation team and the level of faculty and staff buy-in. Both of these factors are of significance, since the school was mandated to implement Positive Behavior Interventions and Supports. The program was not actively chosen by the school's faculty and staff. Andreou and McIntosh (as cited in McIntosh, Mercer, Hume, Frank, Turri, & Matthews, 2013) state that "staff commitment facilitates integration of the practice into the staff culture of the school and the belief that he practice belongs to the staff as a whole and not solely to administrators" (p. 294). The second factor of faculty and staff buy-in is significant from the standpoint of school-wide fidelity of implementation of the Positive Behavior Interventions and Supports program. Positive Behavior Interventions and Supports programs are not highly effective if there is not school-wide consistency of implementation of expectations, as well as consistent distribution of rewards and consequences.

There are two factors that may have affected the findings of this study. One factor is that the experimental school, Middle School B, may have had highly effective remediation programs in place that greatly benefited Caucasian students' style of learning. These same programs may have had some impact in a negative manner on the scores of minority students. A second factor that could have impacted the outcome of this study is other academic initiatives that were either in place at Middle School A or Middle School B that impacted eighth grade Virginia English Reading Standards of Learning assessment scores. Highly effective academic interventions at the control school, Middle School A, could have also impacted the results of the study.

When determining the effectiveness of Positive Behavior Interventions and Supports programs, an important factor is the fidelity of implementation of the program. According to McIntosh, Mercer, Hume, Frank, Turri, and Matthews (2013), "When effective practices are implemented with fidelity of implementation, they are more likely to lead to positive student outcomes. Hence, effectiveness depends on both the quality of the practice itself and the quality of implementation" (p. 295). Many schools use instruments, such as the School-wide Evaluation Tool (Sugai, Lewis-Palmer, Todd, & Horner, 2001) to assess fidelity of implementation of Positive Behavior Interventions and Supports programs. According to Horner, Todd, Lewis-Palmer, and Irvin (2004), "The SET consists of 28 items organized into seven subscales that represent the seven key features of school-wide" Positive Behavior Interventions and Supports programs (p. 5). It is not possible to determine the level of fidelity with which the Positive Behavior Interventions and Supports program was implemented at Middle School B during the 2010-2011 school year, because the faculty and staff members did not complete a self-evaluation tool, such as the SET.

A final factor that may have impacted the outcome of this study is the fact that research shows that it generally takes three to five years of implementation of any program before complete benefits are realized. This study examined eighth grade Virginia English Reading Standards of Learning assessment results after only the first year of implementation. Due to this factor, Tier Two and Tier Three interventions had not been developed and implemented on a wide scale in Middle School B.

The findings are interesting from the standpoint that there were no statistically significant differences in achievement in the control and experimental schools when looking at overall eighth grade scores and when looking at scores from a gender perspective of male and female scores. The analysis determined that there was a statistically significant difference in the scores from a racial perspective. Non-minority students at the experimental school scored statistically significantly higher than those at the control school. The most interesting results from the analysis was the fact that minority students in the control school scored statistically significantly higher than those in the experimental school. These results may be due to the fact that Positive Behavior Interventions and Supports programs have an impact on student behavior, culture, and attendance, but they do not necessarily impact effective instructional practices. After the implementation of Positive Behavior Interventions and Supports, students may have better classroom behavior, but the interventions did not improve the instructional practices of the teacher. Behavior may have improved, but the instruction may have remained unchanged.

Limitations

When considering the limitations that apply to this study, several specific limiting factors are evident. One of these limitations is that the study only examined eighth grade Virginia

English Reading Standards of Learning assessment scores. It would be difficult to determine if the study's results would always be the same for all other standardized assessment results.

Another limitation of this study is the fact that the two schools involved had similar, diverse student populations making their demographics very specific. Both of these schools had large minority populations with significant numbers of multiple minority groups represented. Both schools also had a significant number of students with what would be considered economically-challenged backgrounds.

A third limitation is the fact that this study only investigated one year, which was the first year, of implementation of a Positive Behavior Interventions and Supports program. This is significant from the standpoint that many programs require three to five years of implementation before full benefits are realized. Under Positive Behavior Interventions and Supports, tiers of intervention increase and become more effective over time; therefore, data from one year may not reflect the full impact Positive Behavior Interventions and Supports has on school culture and student populations.

A fourth limitation of this study is the fact that the study was conducted solely using data from two participating middle schools. For this reason, the results may not be generalized to elementary and high school levels. Positive Behavior Interventions and Supports is used in elementary, middle, and high schools, but this study limited its data collection to the participating middle school level only.

As mentioned in earlier sections, a fifth limiting factor is the fidelity of implementation of a Positive Behavior Interventions and Supports program. The schools involved in this study did not use an instrument to determine fidelity of implementation; therefore, it is difficult to gauge the level of fidelity of the Positive Behavior Interventions and Supports program in

Middle School B. Positive Behavior Interventions and Supports programs have proven to be highly effective at altering student behavior when they have been implemented with high levels of fidelity; therefore, Middle School B's level of fidelity of implementation is a limiting factor.

Another limitation for this study is teacher effectiveness. The level of instructional skill possessed by the eighth grade English instructors at the two participating middle schools could have had a significant impact on student test results. If the eighth grade English Professional Learning Community at one school was stronger instructionally than the other school, this could have significantly impacted the results on the eighth grade Virginia English Reading Standards of Learning assessment.

Limitation number seven is students' level of proficiency and motivation. If the students in one school or the other had a higher level of proficiency and/or motivation prior to their eighth grade year, this could have significantly impacted the study's results in a positive or negative manner. Some groups of students respond more effectively to certain styles of teaching and may have a stronger natural skill set in that area of study. A factor such as student attendance could also affect outcomes.

Limitation number eight is the fact that the overall Caucasian population in the experimental school was 160 students fewer than the overall Caucasian population at the control school. In light of the fact that the findings indicated that there was a statistically significant difference in academic achievement at the experimental school, this difference in population may have been a factor in the results.

A final limitation deals with the amount and effectiveness of professional development the faculty and staff received concerning Positive Behavior Interventions and Supports programs and tiers of interventions. The Positive Behavior Interventions and Supports Implementation

Team's effectiveness of creating teacher buy-in and building teacher knowledge about the benefits and strategies used in Positive Behavior Interventions and Supports could have significantly impacted the effectiveness of the Positive Behavior Interventions and Supports program at Middle School B. If the professional development was not carried out in a comprehensive and effective manner, this could have a direct impact on program results.

Implications

The results of this study have implications for all levels of educators from classroom teacher to superintendent. As schools seek the most academically effective programs, as well as the most cost-efficient programs, in order to improve instruction and target academic improvement for specific gap groups, this study's findings may offer a resource when considering Positive Behavior Interventions and Supports programs, not only for behavioral interventions, but also for academic interventions. Educators are always looking for that "magic bullet" that is easy to implement, is highly effective, and has positive impacts on teacher effectiveness, as well as student performance. As the popularity of Positive Behavior Interventions and Supports programs grows across the educational landscape, the results of this study offer some insight as to whether Positive Behavior Interventions and Supports programs are the most effective initiative to implement when seeking to improve student performance on the middle school level.

The results of this study indicate that Positive Behavior Interventions and Supports programs impact Caucasian students' academic achievement in a positive manner. The results also indicate that there is no benefit to minority students' academic achievement with the implementation of Positive Behavior Interventions and Supports. These programs seem to have no effect on academic achievement when comparing males and females, as well as when

comparing results from the overall school populations. This is important information from the standpoint of in which schools educational leaders may choose to implement Positive Behavior Interventions and Supports to realize an improvement in academic achievement. Using the results of this study, educational leaders may choose to implement Positive Behavior Interventions and Supports in middle schools where academic improvement is needed with a predominantly Caucasian population. These results indicate that Positive Behavior Interventions and Supports are not effective in producing academic achievement in minority students at the middle school level.

Recommendations

Recommendations for future research based on the results of this study and recommendations for schools implementing Positive Behavior Interventions and Supports programs will be included in this section. One recommendation for future studies is to conduct research that would investigate the effects of Positive Behavior Interventions and Supports on specific minority student groups across several different schools. The results of this study showed that minority students' assessment scores in the experimental school were significantly different than the minority students' scores in the control school. This statistical difference showed that the minority students' scores were lower at the experimental than at the control school. This may also lead to a second recommendation for future study that investigates the specific impact Positive Behavior Interventions and Supports programs have on Caucasian students' academic achievement. This study would be recommended, since Caucasian students' scores in the experimental school were higher on a statistically significant level than those of the Caucasian students at the control school.

Other recommendations for future studies include studying if Positive Behavior Interventions and Supports programs have an impact on student achievement over a longer period of time. This study used data from the first year of implementation of a Positive Behavior Interventions and Supports program. Future studies that look at Positive Behavior Interventions and Supports programs' impact on student achievement over a three- or five-year period could be beneficial. Future studies that look at student academic achievement through a three-year period, such as following a particular class through sixth, seventh, and eighth grades in a school using Positive Behavior Interventions and Supports, while tracking academic progress during that three-year period is recommended.

This study examined student achievement using the eighth grade Virginia English Reading Standards of Learning assessment results. Future studies that look at student achievement in different academic content areas is recommended. This would allow researchers to determine if Positive Behavior Interventions and Supports programs have a greater impact in certain content areas over others, or if its impacts are standard across all content areas.

A fifth recommendation for future research is to investigate the impact of Positive Behavior Interventions and Supports programs in other levels of education. A study that looked at the impact of Positive Behavior Interventions and Supports programs on academic achievement at the elementary or high school levels may aid educators in evaluating the best use of these types of intervention-based programs. This study only looked at students in the eighth grade of two middle schools; therefore, its results cannot be generalized to high school or elementary level students.

A sixth recommendation for future research is to look at schools that implement academic interventions using Positive Behavior Interventions and Supports programs, while

implementing behavioral interventions. These types of schools may realize more impact on academic achievement than schools that only use behavioral interventions when implementing Positive Behavior Interventions and Supports programs.

Recommendations for schools that are implementing Positive Behavior Interventions and Supports programs begin with schools using data and feedback instruments in order to evaluate major aspects of Positive Behavior Interventions and Supports implementation. The first recommendation is to gauge faculty attitudes and feelings toward Positive Behavior Interventions and Supports programs in the first stages of implementation. This is a critical measure, in order to determine the best methods of implementation to ensure that staff members not only understand Positive Behavior Interventions and Supports, but also value and support the program. Without significant buy-in from faculty and staff, the effectiveness of Positive Behavior Interventions and Supports is greatly compromised. Faculty surveys and questionnaires are an important part of this process. Faculty implementation teams that solicit staff input are essential during these early implementation phases.

A second recommendation is for school faculty and staff to establish common core values and a set of school-wide expectations that apply to every student. These values and expectations are the foundation on which Positive Behavior Interventions and Supports builds its Tier One interventions. This is an essential building block in setting a strong program foundation for implementation.

A third recommendation for implementation is to use an instrument that quantifies the level of fidelity with which faculty and staff are carrying out Positive Behavior Interventions and Supports throughout the process. This should be an ongoing evaluation that regularly monitors the level of fidelity of implementation as new intervention and strategies are introduced.

A fourth recommendation is frequent and regular monitoring of data to evaluate the effectiveness of strategies and interventions. Positive Behavior Interventions and Supports by its own definition is a data-driven process. The process is built upon the success of interventions. If the data indicates that a particular intervention or strategy is not effective, this intervention should be immediately evaluated, changed, or eliminated, in order to ensure the program's continued success.

Establishing universal classroom routines and procedures that are followed in every classroom throughout the building is a fifth recommendation. This is an important step in building universal expectations and consistency in student behaviors and practices across the entire building. This allows students to know the expectations from classroom to classroom throughout the entire school day.

A sixth recommendation is to incorporate strong student recognition programs that regularly celebrate and recognize student success and recognize students for demonstrating school-wide expectations. This step is essential in reinforcing core values and school-wide expectations and allows for positive reinforcement of desired student behaviors and expectations.

A seventh recommendation for implementation is to establish a strong teacher recognition program that routinely and frequently recognizes staff and faculty members that support and demonstrate the school's core values and the reinforcement of those values and expectations within the classroom and throughout the school building. Establishing and building upon consistency is an essential factor in the success of Positive Behavior Interventions and Supports programs. This also builds staff support for the implemented program.

Some may consider student and staff recognition and celebrations nonessential in the process of implementing and establishing a successful Positive Behavior Interventions and

Supports program. This is an often overlooked and underutilized aspect of the process. A key component of successful Positive Behavior Interventions and Supports programs and one of the most powerful aspects is the changing of school culture, or in some instances, the establishing of a positive school culture. Recognitions and celebrations are a key element in this process.

A final recommendation for implementation of Positive Behavior Interventions and Supports programs is to ensure that faculty and staff members, as well as administrators, create opportunities to teach school-wide expectations to students. Often, faculty and administrators set expectations, but seldom do they take the time to teach and reinforce these expectations on a regular basis. Continual reinforcement and modeling of expectations is a crucial component for success.

Conclusion

Educators today must operate facing difficult challenges. Teachers and school leaders must find effective ways to educate every child. In an environment that is not only litigious and political, but also fickle and at times hostile, today's educators must find ways to overcome obstacles and guide every child to academic success. While schools are held more and more accountable for student outcomes, they also face dwindling resources and very little financial stability. Education is not immune to the increasing federal government encroachment on what have historically been local governments' responsibilities. Of those local governments' responsibilities being encroached upon, education is one of the largest.

In order to meet the expectations of local constituents and regulations mandated by the federal government, school systems have been forced to seek programs and initiatives that increase student achievement, but do not unreasonably strain shrinking school division budgets. School systems across the nation are faced with an increase in challenging behaviors and a

decrease in academic achievement. Many studies show that the United States continues to lose ground to other industrialized nations when it comes to student achievement. According to Leal (2012), "the 2011 Trends in Mathematical and Science Study shows that U.S. fourth- and eighth-graders continue to lag behind students in countries like South Korea, Singapore, Japan, and Taiwan" (para. 16). To combat these issues, a multitude of school systems and the majority of state boards of education have adopted some form of Positive Behavior Interventions and Supports programs.

Positive Behavior Interventions and Supports programs are data-driven programs based on pyramids of tiered interventions. These programs are structured around three levels of tiered interventions. The first level, Tier One interventions, is effective in reaching roughly seventy percent of schools' student populations. The second level, Tier Two interventions, is more targeted to address specific behavior issues. This level of intervention tends to reach the next ten to twenty percent of students that may need a more intensive small group intervention, in order to correct their conduct and classroom behavior. The third and most intensive level is Tier Three interventions. These interventions are more one-on-one focused and individualized for that last ten percent of individuals that do not respond effectively to Tier One and Tier Two interventions.

McCulloch (2014) described Positive Behavior Interventions and Supports as being similar to how people seek healthcare interventions. In most instances, large numbers of individuals experience a cold. Through rest and hydration, they are able to cope with and overcome this minor illness. A smaller percentage of individuals that fall ill with a cold do not respond well to rest and hydration, and the cold progresses into a respiratory infection. These individuals require the equivalent of a Tier Two intervention, which would be a doctor's visit and antibiotic prescription. An even smaller percentage of individuals do not respond to the Tier

Two doctor's visit and antibiotic, and their upper respiratory infection progresses into pneumonia. These individuals require the equivalent of a Tier Three intervention, which is much more individualized and intensive. They could require hospitalization and an individualized health plan.

There are two major features that make Positive Behavior Interventions and Supports programs very attractive to schools and school divisions. The first attractive factor is that the implementation of Positive Behavior Interventions and Supports can be done with relatively low cost to the school or school division. The cost of training local facilitators that can go back and train individuals within a school is the only major expense associated with implementation of Positive Behavior Interventions and Supports. The second major attractive feature is that Positive Behavior Interventions and Supports can be individualized, in order to meet specific needs of schools. While the overall framework and philosophy of the program may apply to an entire school division, the specific expectations and interventions adopted by individual schools may look very different.

This study was intended to assist school leaders in being able to identify whether a Positive Behavior Interventions and Supports program would be the most impactful and effective program to implement in their school divisions or individual schools, in order to not only target school behavior, but also impact academic achievement. This study also examined whether Positive Behavior Interventions and Supports programs impacted overall student populations at the middle school level, and how it impacted different ethnic groups and genders. The results of the study failed to show a significant difference in the academic performance of eighth grade students on the Virginia English Reading Standards of Learning assessment in a school that implemented Positive Behavior Interventions and Supports over a school that did not implement

such a program. The study's examination of male and female academic performance on the eighth grade Virginia English Reading Standards of Learning assessment also failed to show any statistically significant difference. The study's results when looking at the academic performance of Caucasian and minority students on the eighth grade Virginia English Reading Standards of Learning assessment did show a statistically significant difference. Caucasian students in the experimental school, Middle School B, scored statistically significantly higher than those in the control group, Middle School A. Minority students in Middle School B, the experimental school, scored statistically significantly lower than minority students in Middle School A, the control group.

While this is one study that examined the effects of Positive Behavior Interventions and Supports after the first year of implementation, the results of the study may help school leaders determine whether a Positive Behavior Interventions and Supports program is the best course of action to meet the needs of middle school students in their school division. The study's results also raise questions that could be examined in future studies. Future studies may wish to focus research on middle school implementation over a three- to five-year period. Future research may investigate Positive Behavior Interventions and Supports impacts on achievement over multiple grade levels or at the elementary or high school levels. Future research may also look at Positive Behavior Interventions and Supports programs that have been established for a longer period of time and incorporate academic interventions, as well as behavior interventions.

As schools implement more rigorous instructional techniques, in order to keep pace with increased expectations, programs like Positive Behavior Interventions and Supports become more important. Instructional practices such as Project Based Learning and Rigor and Relevance Quadrant-Based Learning require teachers to assume a role of facilitator and students are

challenged to self-manage and work in small groups and/or independently. In order for these types of initiatives to be successful, classroom expectations and students' ability to manage their own behaviors becomes more important. Schools that can use programs such as Positive Behavior Interventions and Supports will be able to equip students with the necessary tools to self-manage behaviors and effectively adhere to school-wide expectations.

School leaders are faced with an ever-growing myriad of challenges. In an effort to assist educational professionals in making the most informed decisions, this study examined a different aspect of the impact of Positive Behavior Interventions and Supports programs. A great deal of research supports the fact that Positive Behavior Interventions and Supports programs, when implemented effectively, do improve student behaviors, reduce classroom disruptions, positively impact school culture, and reduce the number of discipline referrals in schools. While it has been established that Positive Behavior Interventions and Supports programs impact student behaviors, there is a gap in the research showing whether or not these programs impact student achievement. The results of this study may provide school leaders with better insight into the effects that Positive Behavior Interventions and Supports programs have on student achievement.

References

Anderson, C. M. & Spaulding, S. A. (2007, Winter). Using positive behavior supports to design effective classrooms. *PBS in the Classroom*, 27-31.

Boulden, W. T. (2010). The behavior intervention support team (BIST) program: Underlying theories. *Reclaiming Children & Youth, 19*(1), 17-21.

Caldarella, P., Shatzer, R., Gray, K., Young, K. R., & Young, E. (2011). The effects of school-wide positive behavior support on middle school climate and student outcomes. *Research in Middle Level Education Online, 35*(4), 1-14. Retrieved from http://www.luonline.edu

Clonan, S. M., Lopez, G., Rymarchyk, G., & Davison, S. (2004). School-wide positive behavior support: Implementation and evaluation at two urban elementary schools. *Persistently Safe Schools: The National Conference of the Hamilton Fish Institute on School and Community Violence*, 85-101.

Cohen, R., Kincaid, D., & Childs, K. E. (2007). Measuring school-wide positive behavior support implementation: Development and validation of the benchmarks of quality. *Journal of Positive Behavior Interventions, 9*(4), 203-213.

Dunlap, G. & Fox, L. (2011). Function-based interventions for children with challenging behavior. *Journal of Early Intervention, 33*(4), 333-343. doi:10.1177/1053815111429971

Dunlop, T. (2013). Why it works: You just can't 'PBIS' someone. *The Education Digest, 79*(4), 38-40. Retrieved from http://search.proquest.com/docview/1464619030

Eber, L., Sugai, G., Smith, C., & Scott, T. (2002). Wraparound and positive behavior supports and interventions in the schools. *Journal of Emotional and Behavior Disorders, 10*(3), 171.

Freeman, R., Eber, L., Anderson, C., Irvin, L., Horner, R., Bounds, M., & Dunlap, G. (2006). Building inclusive school cultures using school-wide positive behavior support: Designing effective individual support systems for students with significant disabilities. *Research and Practice for Persons with Severe Disabilities, 31*(1), 4-17.

Freiberg, H. J., Huzinec, C. A., & Templeton, S. M. (2009). Classroom management – A pathway to student achievement: A study of fourteen inner-city elementary schools. *The Elementary School Journal, 110*(1), 63-80.

Freiberg, H. J. & Lamb, S. M. (2009). Dimensions of a person-centered classroom management. *Theory into Practice, 48*, 99-105.

Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction*. Boston: Allyn and Bacon.

Horner, R. H., Todd, A. W., Lewis-Palmer, T., Irvin, L. K., et. al, (2004). The school-wide evaluation tool (SET): A research instrument for assessing school-wide positive behavior support. *Journal of Positive Behavior Interventions, 6*(1), 3-12. Retrieved from http://search.proquest.com/docview/

Hoyle, C. G., Marshall, K. J., & Yell, M. L. (2011). Positive behavior supports: Tier 2 interventions in middle schools. *Preventing school failure, 55*(3), 164-170.

Hubbuch, C. & Stucker, K. (2012, November). Middle level WEB: Beyond zero tolerance. *Principal Leadership, 13*(3), 44-46.

Lane, K. L., Wehby, J. H., Robertson, E. J., & Rogers, L. A. (2007). How do different types of high school students respond to school-wide positive behavior support programs? Characteristics and responsiveness of teacher-identified students. *Journal of Emotional and Behavioral Disorders, 15*(1), 3-20.

Lassen, S. R., Steele, M. M., & Sailor, W. (2006). The relationship of school-wide positive behavior support to academic achievement in an urban middle school. *Psychology in the Schools, 43*(6), 701-712. doi: 10.1002/pits.20177

Leal, F. (2012, December 12). U.S. students still lagging. *Orange County Register*. Retrieved from http://search.proquest.com/docview/1237354942?accountid=12085

Luiselli, J. K., Putnam, R. F., Handler, M. W., & Feinberg, A. B. (2005). Whole-school positive behaviour support: Effects on student discipline problems and academic performance. *Educational Psychology*, *25*(2-3), 183-198.

Marr, M. B., Audette, B., White, R., Ellis, E. & Algozzine, B. (2002). School-wide discipline and classroom ecology. *Special Services in the Schools, 18*(1-2), 55-73.

McCulloch, K. (2014, January). *PBIS tier 1*. Professional development session presented at Training and Technical Assistance Center/VDOE, Chesterfield, Virginia.

McIntosh, K., Bennett, J. L., & Price, K. (2011). Evaluation of social and academic effects of school-wide positive behavior support in a Canadian school district. *Exceptionality Education International, 21*(1), 46-60.

McIntosh, K., Mercer, S. H., Hume, A. E., Frank, J. L., Turri, M. G., & Mathews, S. (2013). Factors related to sustained implementation of school-wide positive behavior support. *Exceptional Children, 79*(3), 293-311. Retrieved from http://search.proquest.com/docview/

Medley, N., Little, S., & Akin-Little, A. (2008). Comparing individual behavior plans from schools with and without school-wide positive behavior support: A preliminary study. *Journal of Behavioral Education, 17,* 93-110. doi: 10.1007/s10864-007-9053-y

Mitchell, B. S., Stormont, M., & Gage, N. A. (2011). Tier two interventions implemented within the context of a tiered prevention framework. *Behavioral Disorders, 36*(4), 241-261. Retrieved from http://search.proquest.com/docview/894273232?accountid=12085

Moore, J. (2011). Behaviorism. *The Psychological Record, 61*, 449-464.

Reinke, W. M., Herman, K. C., & Stormont, M. (2013). Classroom-level positive behavior supports in schools implementing SW-PBIS: Identifying areas for enhancement. *Journal of Positive Behavior Interventions,15*(1), 39-50.

Sabatino, C. A., Pricher, P., & Alvarez, M. (2012, November). A sample of evidence-based behavior interventions. *Principal Leadership, 13*(3), 12-14.

Sailor, W., Stowe, M. J., Turnbull, H. R., & Kleinhammer-Tramill, P. J. (2007, November/December). A case for adding a social-behavioral standard to standards-based education with school-wide positive behavior support as its basis. *Remedial and Special Education, 28*(6), 366-376.

Schuta, T., Mauricio, D., & Comerford, S. (2012, November). Significant steps forward. *Principal Leadership, 13*(3), 32-35.

Scott, J. S., White, R., Algozzine, B., & Algozzine, K. (2009). Effects of positive unified behavior support on instruction. *International Journal on School Disaffection, 6*(2), 41-48.

Sugai, G. (2007). Promoting behavioral competence in schools: A commentary on exemplary practices. *Psychology in the Schools, 44*(1), 113-118.

Sugai, G., Lewis-Palmer, T., Todd, A., & Horner, R. H. (2001). *School-wide evaluation tool.* Eugene: University of Oregon.

Sullivan, A.L., Long, L., & Kucera, M. (2011, December). A survey of school psychologists' preparation, participation, and perceptions related to positive behavior interventions and supports. *Psychology in the Schools, 48*(10), 971-985.

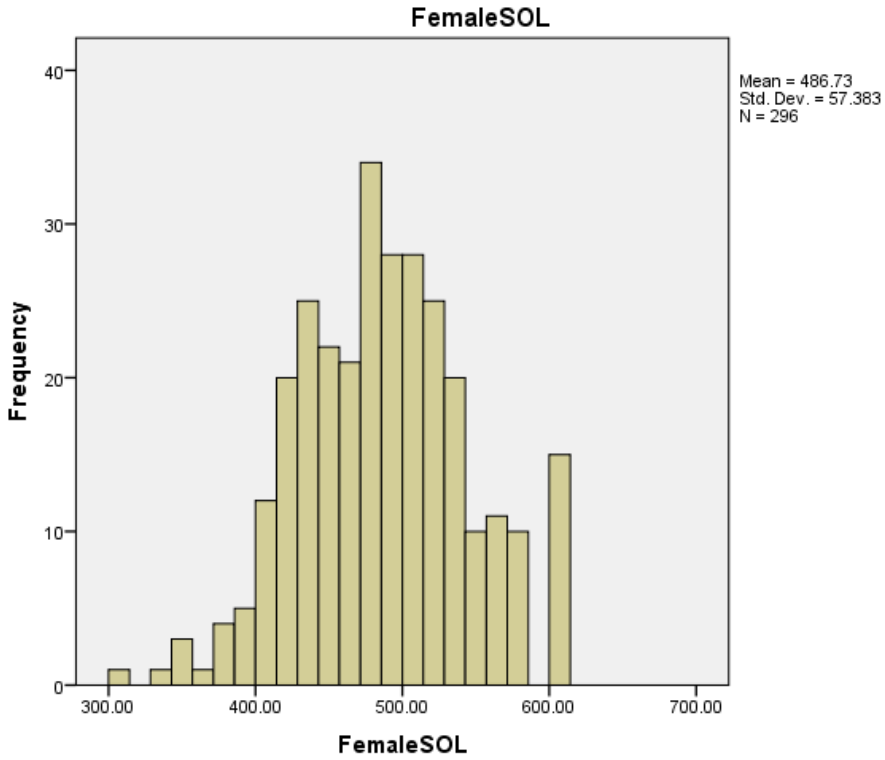
Thomas, D., Bierman, K., Thompson, C., & Powers, C. (2008). Double jeopardy: Child and school characteristics that predict aggressive-disruptive behavior in first grade. *School Psychology Review, 37*(4), 516-532.

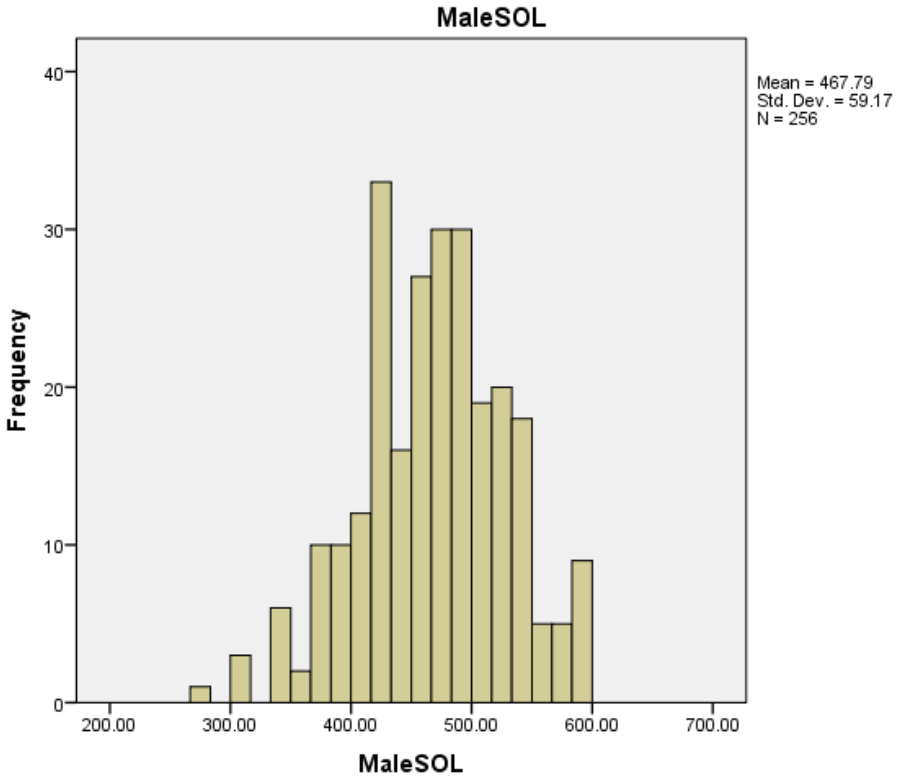
Virginia Department of Education (2012). SOL scoring: Standard error of measurement. Retrieved from http://www.doe.virginia.gov/testing/scoring/standard_error_measurement/index.shtml

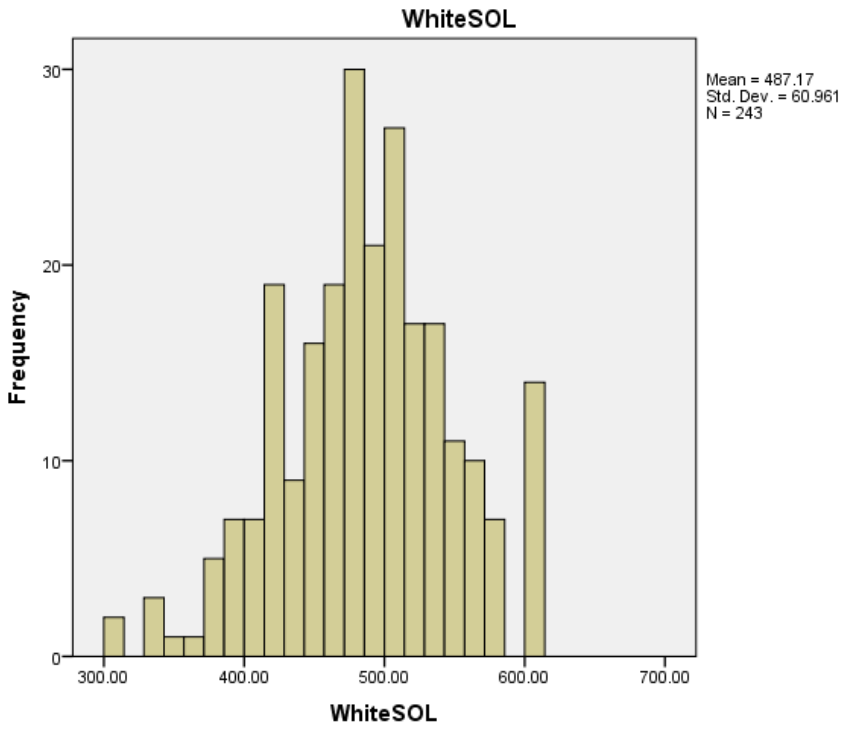
Walk, R. A. (2005). *Evaluating the predictive validity of the speed DIAL version of the DIAL-3, developmental indicators for the assessment of learning* (Doctoral dissertation). Retrieved from Electronic Theses and Dissertations database.

Wieder, L. (2012). Recognizing the positive with PBIS. *Middle Ground, 16*(2), 27-28. Retrieved from http://search.proquest.com/docview/1282881956?accountid=12085

Appendix A Bar Graphs



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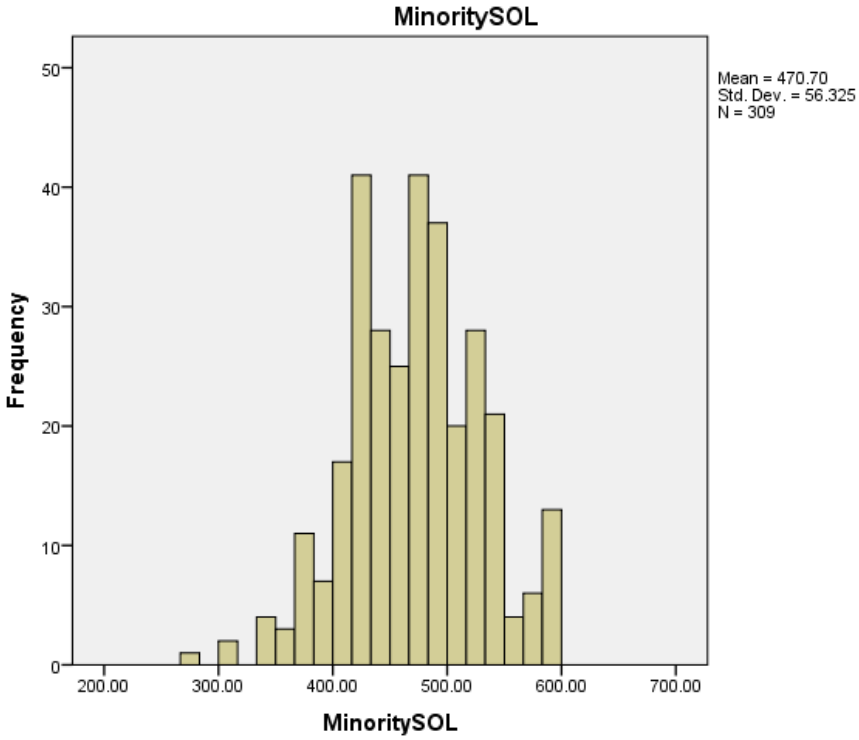
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50
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500.00
600.00
700.00
MinoritySOL