

THE EFFECTS OF POSITIVE BEHAVIOR INTERVENTION SUPPORTS AND TIER II
INTERVENTIONS ON ACADEMIC ACHIEVEMENT AMONG
ELEMENTARY STUDENTS

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ABSTRACT

This correlational research study examined the effect of behavioral interventions through school-wide positive behavior interventions and supports (PBIS) on elementary student reading and math achievement in one Midwestern suburban elementary school among 71 students in grades first through fifth participating in PBIS Tier II interventions compared to 71 peers not participating in the intervention. Additionally, this study analyzed teacher perceptions of PBIS implementation and experiences with students participating in the Tier II behavior interventions. The research contributes to the literature by examining the effects of individualized interventions on academic achievement for students. The PBIS Tier II intervention of Check-In/Check-Out (CICO) was implemented by the school for students unable to consistently meet school-wide behavior expectations. Data from the Renaissance Learning STAR Reading and Math assessments and progress monitoring of student behaviors were gathered and analyzed. A teacher survey was distributed to building staff

members to understand their perceptions of PBIS Tier II interventions and their experiences with students participating with the intervention. A Pearson correlation and two-sample t-test were used to analyze the possible relationship between the student participation in the PBIS Tier II behavior interventions and their reading and math academic achievement according to the students' scaled score gains on the STAR Reading and Math assessments. Through this study, no statistically significant differences were found between student participation in PBIS Tier II behavior interventions and academic achievement in reading and math. Consequently, these findings are discussed in terms of assisting schools implementing PBIS Tier II interventions to address reading and math academic challenges.

Approval Page

The faculty listed below, appointed by the Dean of the School of Education, will examine a dissertation titled “The Effects of Positive Behavior Intervention Supports and Tier II Interventions on Academic Achievement among Elementary Students,” presented by Geoffrey D. Reno, candidate for the Doctor of Education degree, and certify that in their opinion it is worthy of acceptance.

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Table of Contents

	Page
ABSTRACT	iii
LIST OF TABLES	xi
LIST OF ILLUSTRATIONS	xii
ACKNOWLEDGEMENTS	xiii
Chapter	
1. INTRODUCTION	1
Statement of Problem.....	3
Purpose of the Study	6
Theoretical Framework.....	7
Research Questions	14
Research Hypotheses	14
Variables	15
Definition of Terms.....	15
Overview of Methodology.....	16
Participants.....	17
Instrumentation	18
Validity and Reliability of Measures	19
Data Collection	21
Data Analysis	22
Limitations	24

Ethical Considerations	25
Potential Risks	26
Conclusion	26
2. REVIEW OF LITERATURE	28
Introduction.....	28
School Culture	29
Introduction.....	29
School Culture and Student Behavior.....	30
School Culture and Student Academic Achievement.....	33
School Culture and School Climate.....	35
School Culture and Human Development	37
Race and Ethnicity Influences on School Culture	38
Gender Influences on School Culture.....	39
Social Class Influences on School Culture	40
Conclusion	41
Student Academic Achievement and PBIS.....	42
Introduction.....	42
Academic Achievement and PBIS.....	43
Conclusion	45
School Discipline and Student Equity	46
Introduction.....	46
Theory behind Discipline.....	46

Discipline and Student Equity	49
Conclusion	51
School Wide Positive Behavior Interventions and Supports Framework.....	52
Introduction.....	52
School-Wide PBIS Tiered Interventions	55
Primary Interventions or Tier I	55
Secondary Interventions or Tier II.....	56
Check In/Check Out.....	57
Tertiary Interventions or Tier III.....	58
Conclusion	58
Summary of Review of Literature	59
3. METHODOLOGY	61
Introduction.....	61
Research Design.....	62
Setting	64
Participants.....	67
Instrumentation	68
Variables	75
Data Collection	75
Data Analysis	78
Descriptive Analyses	79
Inferential Analyses	81

Qualitative Analysis.....	83
Conclusion	86
4. RESULTS	87
Description of the Sample	89
Student Sample	90
Building Staff Sample.....	94
Research Questions and Hypotheses Results.....	95
Research Question Two and H1 Statistical Tests and Results.....	95
Research Question Three and H2 Statistical Tests and Results.....	97
Research Question Four Statistical Tests and Results	99
Qualitative Open-Ended Questions Results.....	108
Question 22: Tier II Impact on Student Academic Achievement.....	109
Question 23: Barriers that Hinder Implementation of Tier II.....	110
Question 24: Additional Comments about Tier II Supports	111
Summary	113
Summary of Results	114
Conclusion	115
5. IMPLICATIONS, LIMITATIONS AND FUTURE RESEARCH	119
Discussion and Implications	119
Limitations of the Study.....	126
Recommendations for Future Research	130
Conclusion	133

Appendix

A. PBIS Satisfaction Teacher Survey Instrument.....	136
B. SSIRB Approval.....	139
C. Agreement of Confidentiality.....	140
REFERENCES	141
VITA.....	166

LIST OF TABLES

Table	Page
3.1: Elementary School Site and District Demographic Data.....	66
4.1: Student Sample - Gender	91
4.2: Student Sample – School Year Distribution	91
4.3: Student Sample – Grade Level	92
4.4: Student Sample Demographic Data.....	93
4.5: Student Sample – Gender and Race Comparison	94
4.6: Reading Gains – Correlations	96
4.7: Results of t-test and Descriptive Statistics for Reading Gains	97
4.8: Math Gains – Correlations.....	98
4.9: Results of t-test and Descriptive Statistics for Math Gains	99
4.10: Agree Percentages, Mean Scores, and Std. Deviation for PBIS Staff Satisfaction Survey	100
4.11: PBIS Satisfaction Survey Results – Culture Questions.....	104
4.12: PBIS Satisfaction Survey Results – Discipline Questions.....	105
4.13: PBIS Satisfaction Survey Results – General PBIS Questions.....	106
4.14: PBIS Satisfaction Survey Results – Tier II Behavior Questions.....	107
4.15: PBIS Satisfaction Survey Results – Tier II Academic Questions	108
5.1: T-Test Group Statistics – STAR Reading and Math Fall Scale Score	121

LIST OF ILLUSTRATIONS

Figure	Page
1.1: Continuum of School-Wide Instructional and Positive Behavior Support.....	2
2.1: The Major Sources of Information for Self-Efficacy	35
2.2: Panopticon Plan Shown by Jeremy Bentham	47
2.3: Four PBS Elements.....	54
2.4: Response to Intervention and PBIS Alignment.....	55
3.1: School Example 1 of PBIS Check In/Check Out Student Data Sheet.....	72
3.2: School Example 2 of PBSI Check In/Check Out Student Data Sheet.....	73
3.3: School Example of Daily Behavior Scores.....	74
3.4: Sample Size Calculation Using G-Power	77

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CHAPTER 1

INTRODUCTION

Each day across the country students arrive at school ready to learn, socialize with peers, and find a sense of belonging in the confines of a caring, safe environment. Likewise, each day across the country teachers and administrators arrive at school ready to facilitate learning, socialize with peers and students, and find purpose in impacting the lives of the youth of our world. Within the walls of our schools, administrators and teachers alike deal with instructional pressures, behavioral issues, and the evolving world of learning. As a result of the increased accountability resulting from legislation such as No Child Left Behind (NCLB) Act of 2001 (No Child Left Behind [NCLB], 2002) for student academic achievement and positive behavior, many school districts and administrators are calling upon school-wide prevention behavioral models to promote a positive school climate to reduce discipline problems. A number of these programs systematically manage student behavior by creating school-wide plans that clearly communicate positive behavioral expectations, provide incentives to students who meet those behavioral expectations, and establish a consistent strategy for student intervention and support when behavioral concerns arise (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Sugai & Horner, 2006). School-wide programs are appealing to local school systems because they are believed to nurture an ideal learning environment for all students and encourage the use of additional supports for children with greater socio-emotional and behavioral needs.

One such school-wide prevention plan is Positive Behavioral Interventions and Supports (Horner et al., 2005; Sugai & Horner, 2006; Sugai, Horner, & Gresham, 2002) that

works to enhance the school's capacity to prevent disruptive behavior by creating and sustaining primary (Tier I or school wide/universal), secondary (Tier II or targeted/selective), and tertiary (Tier III or individual/indicated) systems of support.

This three-tiered model (see Figure 1.1), referred to as School-wide Positive Behavioral Interventions and Supports (SW-PBIS), is being widely used by the U.S. Department of Education (Knoff, 2000) and several state educational departments of education.

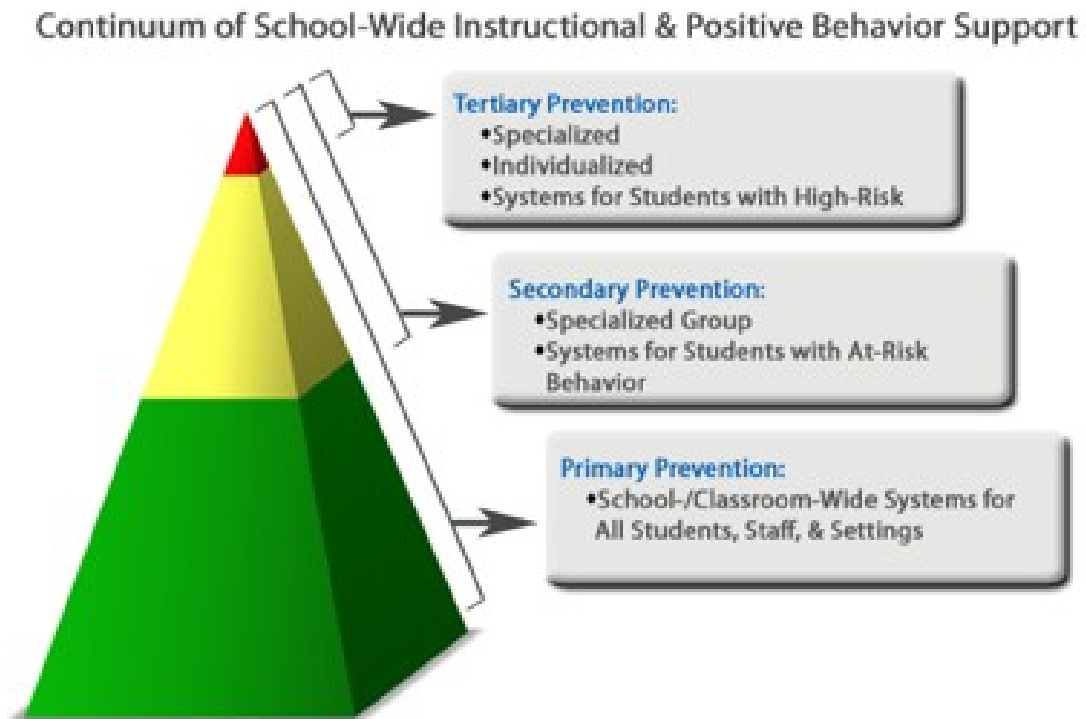


Figure 1.1. Continuum of School-Wide Instructional and Positive Behavior Support (PBIS) by Office of Special Education Programs (OSEP) Technical Assistance Center on PBIS (School-wide PBIS, School section, 2012).

It is estimated that SWPBIS is currently implemented in more than 9,000 schools across the United States (Sugai & Horner, 2009), in at least 44 states in the United States. Despite the growing use and acceptance of SWPBIS and other whole-school interventions, there have been few correlational design studies evaluating the effects of the secondary, or Tier II, interventions upon the academic achievement of students in the elementary level. This study used a correlational research design to determine the effects of SWPBIS on the reading and math achievement of 1st through 5th grade students in an elementary school located in a Midwestern suburban metropolitan public school district.

Statement of Problem

Culture is not imposed on a social setting; instead it develops through the course of social interactions (Morgan, 1986). Bryk, Lee, and Holland (1993) found that establishment of community, or the culture, was a key factor in developing a belief of excellence in schools. Many schools across the country struggle with the establishment and development of a positive school culture as depicted through the failure of meeting Adequate Yearly Progress (AYP) as established by the federal government. Adequate Yearly Progress can be defined as the measure by which schools, districts, and states are held accountable for student performance under Title I of the No Child Left Behind Act of 2001 (NCLB, 2002), the current version of the Elementary and Secondary Education Act. Under NCLB, AYP is used to determine if schools are successfully educating their students. The law requires states to use a single accountability system for public schools to determine whether all students, as well as individual subgroups of students, are making progress toward meeting state academic

content standards. The original intent of the law was to have all students reaching proficient levels in reading and math by 2014 as measured by performance on state tests (NCLB, 2002). In 2011, in order to move forward with state and local reforms designed to improve academic achievement and increase the quality of instruction for all students in a way not originally established by the NCLB, a state educational agency (SEA) may request flexibility through waivers of ten provisions of the Elementary and Secondary Education Act of 1965 (ESEA) and their associated regulatory, administrative, and reporting requirements. These requests for flexibility would be in exchange for “rigorous and comprehensive state-developed plans” (Duncan, 2011) to improve educational outcomes for all students, close achievement gaps, increase equity and improve quality of instructions. In order to meet the flexibility, the SEA must meet four principles as established by the U.S. Department of Education; (1) college and career readiness expectations for all students, (2) state developed differentiated recognition, accountability, and support, (3) support of effective instruction and leadership, and (4) the reduction of duplication and unnecessary burdensome reporting requirements that have little or no impact on students outcomes (United States Department of Education, 2012).

Beyond the ability to request waivers, schools continue to work to meet the expectations as defined by NCLB (NCLB, 2002). Progress on the established standards is tested yearly in grades 3 through 8 and in one grade in high school. The results are then compared to prior years, and, based on state-determined AYP standards, used to conclude if the school has made adequate progress towards the proficiency goal (NCLB, 2002). The pressure and high expectations with NCLB can negatively affect the working culture of a

school. However, when a school has established a positive culture, teachers are less likely to be absent and more likely to be satisfied with their work (Wilkins, 2008). Additionally, students are less likely to drop out or experience behavior problems (Roby, 2011).

McLaughlin and Talbert (2001) agreed and extended that concept to include the idea of a culture focused on learning that motivates staff and students, making note of the power of a workplace that is interrelated, concentrating on the interaction of the staff and students.

Additionally, there is less likelihood of behavioral incidents and issues (Bryk, Lee, & Holland, 1993). Schools are faced with a challenge of creating a culture that is welcoming and comforting to both diverse students and faculty members.

Although U.S. schools could be perceived as one of the safest places for children, demands for safer schools have recently greatly increased because of more attention on acts of school violence, playground and cyber “bullies,” and student harassment (Ericksen, 2013). However, concerns about discipline and problem behavior in schools are not new. Over the past 20 years, fighting, violence, vandalism, truancy, lack of discipline, and drug use have been among the top concerns of the general public and teachers (Sugai & Horner, 2002). However, recently there is obvious public concern regarding student safety with school violence and gun-control debates. Thus management and control of problem behaviors has created increased attention from schools, families, and the community. Most school conduct codes and discipline handbooks detail consequence processes designed to teach students that they violated a school rule, and that their choice of behavior will not be accepted. If this undesired rule-breaking behavior continues, there is increased monitoring to catch any further occurrences of the problem behavior followed by more threats of consequences and

punishment for that individual. As a result, when this occurs it is more likely that the undesired behavior will continue to increase as well (Mayer, 1995). Many schools have established reactive measures to deal with such incidents, including zero tolerance policies, security officers, metal detectors, surveillance cameras, school uniform policies, and using detentions, in-school and out-of-school suspensions, and expulsions.

School-wide discipline has a history of focusing mainly on reacting to specific student misbehavior by implementing punishment-based strategies including reprimands, loss of privileges, office referrals, suspensions, and expulsions (Lewis, Sugai, & Colvin, 1998). Along with the punishment-based strategies, there is a consistent over-representation of students of color and male students receiving punishments when compared to their peers in forms of detention, suspension, and expulsion (Leone et al., 2003). This will be discussed further in the review of literature as it deserves further explanation as to what interventions and professional development for teachers and school staff members could be established in order to prevent such actions.

Purpose of Study

The purpose of this correlational study is to analyze the relationship between the elementary students participating Tier II behavioral interventions in a school-wide PBIS school and their growth in reading and math achievement throughout their participation. Additionally, this study will assist in understanding if there is a positive, neutral, or negative change in the reading and mathematic academic achievement of elementary students according to academic growth over the course of the year on the STAR Reading and Math assessments using the scaled score (SS) from each assessment. The SS is valuable in

comparing student performance over time and in identifying student performance in relation to a vertical scale and all criteria and norms associated with that scale. Due to the fact that the same range is used for all students, scaled scores are also useful for comparing student performance across grade levels. STAR Math and Reading Enterprise scaled scores range from 0–1400 (Renaissance Learning, 2014). As an additional component of data collection, the perception of the elementary staff members in regards to the possible correlation between PBIS Tier II interventions and academic achievement were collected through a Likert survey providing more support in this analysis. It is important to consider the staff perception because staff members are responsible for recommending students for the PBIS Tier II interventions and are responsible for student academic achievement.

While there are a number of studies that discuss the establishment and implementation of the school-wide positive behavior interventions and supports (PBIS) framework (Horner, et al., 2004; Irvin, et al., 2006; Irvin, Tobin, Sprague, Sugai, & Vincent, 2004; Safran, 2006; Colvin & Fernandez, 2000; McIntosh, Campbell, Carter, & Dickey, 2009) few studies examine the relationship between the school-wide behavior plan, specifically Tier II interventions, and academic achievement. By focusing on the essential life-skills of reading and math and the need of behavioral education, this study will fill the needed gap of understanding.

Theoretical Framework

Eisenhart (1991) describes a theoretical framework as “a structure that guides research by relying on a formal theory...constructed by using an established, coherent explanation of certain phenomena and relationships” (p. 205). Maxwell (2005) argues that a

theoretical framework is the organization of assumptions, concepts, beliefs, expectations and theories that support one's study (p. 33). My personal experience with PBIS at the school level has defined my beliefs about the role of the behavior supports on student success and failure. These beliefs along with the social cognitive theory will be used to understand the impact such a behavior program has on students' academic success.

The theoretical framework upholding this study consists of school culture, student academic achievement, student discipline and social equity, and the social cognitive theory.

School culture. School culture could be one of the most complex and important concepts in education. A school's environment is led by norms, values, beliefs, rituals, symbols, ceremonies, and stories that in turn all collectively define and contribute to the school's culture (Meier, 2012). Additionally, written and unwritten expectations develop over time influencing the vision, mission, and behavior of the stakeholders within the school (Peterson & Deal, 2002). Patterson, Purkey, and Parker (1986) believed that school cultures are created by the stakeholders and therefore manipulated by them. The prior work of Schein (1985) suggests that "the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously, and that define in a basic 'taken-for-granted' fashion an organization's view of itself and its environment" (p. 6). This definition speaks the centered belief and practice behind a school's culture. Although the elementary public school experience may look similar across this country, each school has a culture of its own. It also has its own mindset in relation to what occurs in its external environment. Thus, culture is unique in different situations according to Beare, Caldwell, and Millikan (1989).

Further analysis of school culture is critical when examining the PBIS framework due

to the fact that school culture impacts student behavior, student academic success, and the interaction of the culture with its climate (Lewis & Sugai, 1999). Through research and experience, I believe a school's culture impacts the academic success of its students and that culture is created and built around one belief or practice, such as PBIS. Furthermore, I question if this PBIS culture is authentic and effective in nature.

Student academic achievement. With the attempt to prepare all students to be “college and career ready” according to the Common Core State Standards Initiative (2011), there is an increased importance placed on accountability for students' reading and math achievement. Beyond the Common Core State Standards, districts, schools, administrators, and teachers are frequently required to validate and account for reading and math achievement in order to meet the requirements of No Child Left Behind Act of 2001 (NCLB, 2002). Administrators are forced to make decisions on programs that will best serve students (Gapp, Zalud, & Pietrzak, 2009). Hence, it is crucial for stakeholders to collect evidence that the programs they implement create benefits for all students.

While there are a variety of means to measure student academic achievement, this study will focus on the Renaissance Learning STAR Reading and Math assessments. Educators know that these assessments do not necessarily assist with achievement as much as they provide the data to better understand the student growth over the course of the year. Throughout the country, instructional practices are delivered in a variety of ways, whether balanced reading instruction with explicit instruction paired with independent student practice (Peterson & Taylor, 2012) or a constructivist approach to mathematics where students use investigation to discover math concepts independently (Grady, Watkins, &

Montalvo, 2012). In this school district, instructional practices are focused around the workshop model that consists of authentic learning experiences where students are at the center of their learning (Keene & Zimmerman, 2007)

As seen in the current educational setting, the primary indicator that schools use to determine their students' success is their students' performance on standardized achievement tests. While there are many options for collecting this data and many factors that play into the student academic scores on these standardized tests, research suggests student problem behavior is one important factor (Morrison & D'Incau, 1997; Scott, Nelson, & Liaupsin, 2001). Due to the fact that negative behavior has the tendency to create loss of instructional time and negatively impacts learning, interventions (like PBIS) that sustain instructional time by keeping students in class should positively affect student academic achievement.

Student discipline and social equity. As many educators are aware, students' problem behaviors are a critical issue that continually affects the safe school environment in the United States. Both policymakers and school stakeholders have made continuous efforts to prevent and reduce students' problem behaviors. However, student problem behaviors are still widespread in U.S. schools (Han & Akiba, 2011). In a national survey conducted during the 2005-2006 school year, it was determined that a majority of schools (86%) experienced more than one violent incident in schools and that nearly 2.2 million incidents happened in this period (Dinkes, Cataldi, & Lin-Kelly, 2007). Another national survey completed during the 2005-2006 school year determined that more than half of public schools (52%) had at least one incident of threat or physical attack and that serious violent behaviors occurred at the rate of 31 incidents per 1,000 students (Nolle, Guerino, & Dinkes, 2007). As suspected,

these problem behaviors are major obstacles to student learning and school safety (Dinkes et al, 2007).

Understanding that students' negative behaviors have the possibility to adversely affect student learning allows educators the opportunity to determine the most effective means for discipline. As research has shown, however, discipline actions often are more reactive than proactive in nature (Lewis et al., 1998). In fact, many U.S. schools most frequently punish the students who have the greatest academic, social, economic, and emotional needs (Johnson, Boyden, & Pittz, 2001). In most schools and districts, an examination of which students are most likely to be suspended, expelled, or removed from the classroom for punishment, reveals that students of color, especially African Americans and Latinos, males, and low achievers are generally immensely overrepresented (Meier, Stewart, & England, 1989). Through further research, schools' disciplinary practices shows that an unequal number of the students who receive the most severe punishments are students with learning disabilities, students in foster care or under some form of protective custody, and students who are homeless or on free or reduced-price lunch (Skiba, 2000).

Research shows that disciplinary practices in schools often resemble the strategies used to punish adults in our society (Noguera, 2003). Most often, schools implement some form of exclusion or isolation to control the student behavior. Punishing a child who has broken a rule with a reprimand or a placing him/her in the back of the room or in the hallway are common disciplinary practices for minor offences. As for more serious violations, such as fighting, rebelliousness, cutting class, removal from the classroom or school through suspension or expulsion serves as the most commonly used forms of punishment by schools

throughout the United States (Noguera, 2003). More recently, behavior that violates the law, such as drug use and assault, leads to law enforcement intervening and additional school sanctions. Noguera (2003) argues that educators are consistent with our societal responses, in assuming, that by removing our misbehaving students from the equation, our classrooms and schools will be safer and more productive. Furthermore, Noguera (2003) shares that through his findings:

Not surprisingly, those most frequently targeted for punishment in school often look—in terms of race, gender, and socioeconomic status—a lot like smaller versions of the adults who are most likely to be targeted for incarceration in society (p. 343).

As to be expected, our social institutions provided with the task of preparing and socializing young people for adult roles commonly reflect many of the characteristics of the society in which they are located. Because of this, African American and Latino students are disproportionately identified as eligible for special education services and underrepresented in programs for the gifted and talented (National Research Council, 2002). Dropout rates, low levels of academic skills, and school failure are higher on average for students of color than other students. Furthermore, African American students are two to three times as likely to be suspended or expelled as other students (Skiba, Michael, Nardo, & Peterson, 2000). All of these factors and disadvantages create a scenario where it is more likely that students of color drop out of school (Gregory, 1995) and increases their susceptibility to initial or continued involvement with the court and correction systems (Leone et al., 2003).

Social cognitive theory. Each day our students enter our buildings and classrooms with varied experiences that provide educators the challenge of meeting the needs of each child. Furthermore, the experiences these students hold in their lives can have an effect on

their behavior during the school day. As Albert Bandura (2001) shared in the social cognitive theory, an individual's attitudes and behaviors are influenced not necessarily by objective reality but how the person perceives one's experiences. Additionally, a school's environment is likely to impact students' academic learning and school experiences through these experience-created perceptions.

Bandura's social cognitive theory leads to the discussion of Bandura's theory around self-efficacy. Bandura (1977) theorized that the beliefs that people hold about their capabilities and the outcomes of their efforts greatly influence their behavior and self-efficacy. This helps in determining the choices people make, the effort they put forth, how they handle difficulties, and their emotional readiness for life. "Educators have long recognized that students' beliefs about their academic capabilities play an essential role in their motivation to achieve, but self-conceptions regarding academic performance initially proved difficult to measure in a scientifically valid way" (Zimmerman, 2000, p. 82).

According to Bandura (1997), students with high self-efficacy participate more readily, work harder, persevere longer, and have fewer opposing emotional reactions when they face difficulties than do those who doubt their abilities. Encouragement from trusted parents, teachers, and peers could increase the confidence of a student's academic competencies. Behavior interventions, such as the SWPBIS framework, can positively develop a school's culture and assist with the academic success of the students by impacting the students' self-efficacy.

Research Questions

For this study, data will be collected and analyzed in order to answer the following research questions:

Research Question 1: What are the demographic characteristics, including race, gender, socioeconomic status (SES), individualized education program (IEP) status, and limited English proficiency (LEP) status, of the students participating in the PBIS Tier II behavioral intervention program in a Midwestern suburban metropolitan public elementary school?

Research Question 2: What is the relationship between student participation in PBIS Tier II behavioral interventions and reading academic achievement?

Research Question 3: What is the relationship between student participation in PBIS Tier II behavioral interventions and mathematical academic achievement?

Research Question 4: What are teachers' perceptions of the implementation of PBIS Tier II interventions on the academic achievement of elementary students?

Research Hypotheses

In regards to the research questions that this study will address, the researcher has scripted two research hypotheses as follows:

Research Hypothesis 1 (H₁): Students participating in the PBIS Tier II behavioral interventions will make more significant* reading achievement gains when compared against their peers within their school.

Research Hypothesis 2 (H₂): Students participating in the PBIS Tier II behavioral interventions will make more significant* mathematical

achievement gains when compared against their peers within their school.

*Changes will be considered significant at $P < .05$

Variables

The dependent variable in this study is the student reading and mathematics achievement scores over the course of the student's participation within the Tier II intervention supports. Students will be assessed using the STAR Reading and Math Assessments, which are completed on four occasions over the course of each school year—August, November, February, and April. The August and April scores will be used for the purposes of this study. The independent variable is the student participation within the PBIS Tier II intervention supports within the elementary school. With the correlational research design, this study attempted to determine the potential impact on student academic achievement in reading and mathematics when a student participates in PBIS Tier II behavior interventions.

Definition of Terms

Student Achievement:	As measured by the STAR Reading and Math Assessments.
Categories of Achievement:	As defined by the scaled score (SS) within the STAR Reading and Math Assessments.
Behavioral Interventions:	Targeted supports utilized by educational staff to assistance students unable to respond to school-wide expectations.

Secondary Prevention (Tier II):	More intensive interventions for students with chronic problem behaviors.
Response to Intervention (RtI):	A framework for improving schools across all content areas through the identification of students at risk academically or behaviorally, providing evidence-based interventions, and progress monitoring to assure achievement.
STAR Reading Assessment:	An adaptive, computerized reading assessment given to elementary students that provides detailed, actionable data for student reading levels.
STAR Math Assessment:	An adaptive, computerized math assessment given to elementary students that provides detailed, actionable data for student math levels.

Overview of Methodology

This is a correlational study that implemented a Pearson correlation and two-sample t-test. Correlational studies are conducted in order to determine if a significant relationship exists between two or more variables (Runyon, Coleman, & Pittenger, 2000). Specifically, a Pearson correlation measures the degree and the direction of the linear relationship between two variables (Gravetter & Wallnau, 2013). A two-sample t-test is used to determine if two population means are equal (Snedecor & Cochran, 1989). While a correlational research design does not allow the researcher to infer causation, certain statistical measures may be used which allow particular amounts of variance to be accounted for among variables. The

use of the Pearson correlation is one means in which to achieve this purpose. Through this analysis process, the Pearson's r for each correlation is used which allows the independent variable to be examined against the dependent variable. This result is then squared, and referred to as R (r-square). The R-value indicates how much variance a given independent variable accounts for, within the dependent variable (Gall, Gall, & Borg, 2007). This is particularly beneficial in this study, as it should be able to show how much variance a student's participation in PBIS Tier II behavior interventions contributes to student achievement in reading and mathematics.

Beyond the academic achievement analysis, this study will evaluate staff member perceptions of student academic success of students involved in PBIS Tier II behavior interventions. This is critical to the study because, as educators are aware, one assessment does not account for all parts of the student's academic portfolio. Staff can provide a differing view not present in pure assessment scores. The perceptions will be collected through a Likert-type scale survey for the staff members. A Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions (Bowling, 1997). It is assumed that the strength or intensity of the experience is linear or on a continuum from strongly agree to strongly disagree. Additionally, it is assumed that attitudes can be measured (Burns & Grove, 1997). The Likert-scale is a five to seven point scale which is used to allow an individual to express how much they agree or disagree with a particular statement (Bowling, 1997).

Participants. Participants in this study were selected using criterion sampling, as the students are the students within the school site who have participated in PBIS Tier II

behavior interventions over the two year school year period of 2011-2012 and 2012-2013. Criterion sampling involves selecting a sample that meets some predetermined criterion of importance (Patton, 2001, p. 238). A researcher is able to set the criteria and pick all cases that meet the said criteria. The criterion-based sample to be evaluated in this study is first through fifth grade students attending a Midwestern metropolitan public elementary school who participated in PBIS Tier II interventions in the school years of 2011-2012 and/or 2012-2013. Academically, due to the format and requirements of the STAR Reading and Math Assessment, kindergarten students do not complete this assessment and as a result will not be included in the sample for this study. During these established school years, 77 students in grades first through fifth have received the supports of PBIS Tier II interventions.

An additional method of selecting a sample was used in order to compare the possible relationship between PBIS Tier II behavior interventions and academic achievement, random sampling. The random sampling was completed using the school's student population that did not participate in the PBIS Tier II interventions. A random sample requires that each individual of the population has an equal opportunity of being selected (Gravetter & Wallnau, 2013). For this sample, the researcher identified the student population from the 2011-2012 and 2012-2013 and randomly determined an equal number of students for each year by appropriate grade levels as found in the PBIS Tier II sample. This process produced a number of 77 students in the comparison group allowing for the final sample of N=154 students.

As part of the criterion sampling for the purposes of the staff perception survey, the school's staff was asked to complete the survey. The criterion was based around

employment in the building and interaction with students participating in PBIS Tier II behavior interventions. This sample included both certified and classified staff within the selected site for the study.

Instrumentation. Three measures were used in this study. One is the Renaissance Learning STAR Reading and Math assessment. This assessment is a computerized adaptive assessment where students answer 25 multiple-choice questions beginning with grade-level material and then the program adjusts to the answers provided by the student. It either inputs a more or less challenging question depending upon a correct or incorrect answer. The second measure used was the collection of the behavior data for the PBIS Tier II CICO data sheets. On this sheet, the student's day is divided into hourly increments and an expectation is placed on the classroom teacher and student to discuss the student's overall behavior each hour. The behavior classifications are determined through the school wide expectations and school's focus for desired behavior. Goals are set on an individual basis to meet the needs of the each student. The third measure was a Likert-type scale survey (See Appendix A) completed by staff members at the school site to analyze the staff perception of student involvement in PBIS Tier II behavior interventions and their academic achievement. This survey consisted of 24 questions of which 21 were placed on a five-point scale with a range including strongly agree, agree, not sure, disagree, and strongly disagree. Additionally, the survey included 3 open-ended questions allowing the staff to share thoughts regarding interaction with PBIS Tier II support.

Validity and Reliability of Measures. Renaissance Learning (2014) provided three reliability tests for the STAR Reading assessment with high reliability ranging from 0.82 to

0.91. The tests included were a test of internal consistency, the split-half reliability test, and the alternate form test. For the validity of the STAR Reading assessment, Renaissance Learning provided the within-grade average concurrent validity coefficients for grades 1-6 with an overall average of 0.74. The predictive coefficients ranged from 0.69 to 0.74 in grades 1-6. Overall, these correlation coefficients reflect very well on the validity of the STAR Reading test as a tool for placement in reading (Renaissance Learning, 2014).

For the STAR Math assessment, research completed during the development of assessment confirmed that the test is reliable, valid, and correlates highly with state standardized math tests. The STAR Math assessment was normed using a nationally representative sample of students in 42 states across the U.S. The reliability was established with two reliability studies: test-retest and an internal consistency reliability test. The grade-level reliability estimates from both studies are exceedingly high, ranging from 0.78 to 0.88 with most estimates greater than 0.84 (Renaissance Learning, 2014). To determine validity, an additional study compared students' scores on STAR Math to their scores on other standardized tests such as the California Achievement Test and the Iowa Test of Basic Skills. This comparison produced a high correlation between STAR Math scores and scores on other tests with most above 0.70. This demonstrates the validity of STAR Math for measuring student math achievement and the assessment's prediction ability for student performance on other such tests (Renaissance Learning, 2014).

When considering the validity and reliability of PBIS Tier II Check In/Check Out (CICO) data collection, it is critical to understand that the school site mandates PBIS expectation training for all staff members which increases the validity and reliability of PBIS

as it becomes less subjective and fewer opportunities for teachers to act on biases towards students (Sugai & Horner, 2009).

With the final measure, 5-point Likert-type scale survey (See Appendix A), a pilot study of this survey instrument will be conducted in order to determine validity and reliability. The PBIS Leadership Team from this school was used to pilot the survey. The team is composed of four grade level teachers, the physical education teacher, the school counselor, and the school principal. Answering the survey items in the pilot study assisted in determining if participants have adequate understanding to express opinions about the topic. The PBIS Leadership Team assisted in determining the content validity of the instrument to make sure the survey measured the content it claims. The questions used in this study aligned with the PBIS School-wide Evaluation Tool (SET) that is used to assess and evaluate the important features of school-wide effective behavior support across each academic school year (Sugai, Lewis-Palmer, Todd, & Horner, 2005).

Data Collection. In this study, all students in grades one through five attending the school site are required to complete the STAR Assessments three times over the course of the each year. STAR Reading and Math assessment data will be collected for each of the students who participated in the Tier II intervention over the course of the last three school years. This data was accessed through the district's Director of Research, Evaluation, and Assessment and the district's Matrix data online warehouse. These assessments are computer based and were completed by the students to determine their reading and math scale scores.

The PBIS Tier II CICO data was gathered from the school's PBIS coordinator who is

responsible for compiling the daily student data and inputting the information into Microsoft Office Word and Excel documents to create spreadsheets for further school analysis.

Additionally, this student data will provide the participants' gender, race, SES, IEP, and LEP for further knowledge as well as to address the first research question. The students' names were not included as to protect the student population. All of the behavior data collection was completed through data mining as compared to using human participants. Additionally, the school district used an online data (Matrix) collection program for behavior incidents. Having access to this program also provided statistical information for the students.

By employing a teacher perception survey, quantitative and qualitative data was collected in terms of PBIS Tier II behavior intervention implementations and student academic achievement growth. The means and standard deviations of each survey item were calculated for the total sample as they relate to each research question. As for the open-ended questions, the researcher completed a detailed analysis of the teacher perceptions of PBIS Tier II interventions based on each survey item. This survey data was collected during a staff meeting in which the researcher explained the background and purpose of the study. All surveys were anonymously collected so as to protect the teacher population.

Data Analysis. This correlational research design is to determine relationship between an independent variable and a dependent variable. The independent variable is defined as the variable that is manipulated by the researcher usually consisting of the two or more treatment conditions and is manipulated prior to observing the dependent variable (Gravetter & Wallnua, 2013). The dependent variable is “the variable that is observed to assess the effect of the treatment” (Gravetter & Wallnua, p. 16, 2013). Multiple data sources

collected for this research study include: STAR Reading, STAR Math, student demographic and socioeconomic data, daily CICO data, and staff perception survey.

In order to address the first research question, the researcher used descriptive statistics analysis to establish the means, modes, and standard deviation of the students meeting the criterion of the sampling. This descriptive analysis collected and assisted in describing student information based on race, gender, and SES. This information was analyzed using the IBM SPSS (IBM Corporation, 2012).

Furthermore, the study's goal is to understand the nature of the relationship between the independent and dependent variables. A two-sample t-test was used to determine whether there was a significant change in the reading and/or mathematical achievement of students participating in PBIS Tier II CICO during 2011-2012 and/or 2012-2013 as compared to students during the same time frame who do not receive PBIS Tier II behavior interventions at the school level. Within this study, the researcher analyzed the scaled score observing the positive or negative change over the course of the year. To determine the significant change, this study used a Pearson correlational concentrating on the STAR Reading and Math scaled score gains by the student sample. Furthermore, a two-sample t-test was used to compare whether the two groups of individuals had different values, or in other words, it compares means for two groups of cases to determine whether there is a significant difference (IBM Corporation, 2012). A t-test's statistical significance indicates whether or not the difference between two groups' averages most likely reflects a real difference in the population from which the groups were sampled (IBM Corporation, 2012).

In regards to the behavior assessment, the researcher evaluated the data through the guidelines of the PBIS framework as discussed with the CICO content. As a final analysis component, the researcher analyzed the staff perception survey by creating descriptive statistics that will report the means and standard deviations for the each survey item calculated for the total sample as they relate to the research questions.

Limitations

Approaching this study through the correlational design has implications within itself. First and foremost, as with any correlational study, the research can suggest a relationship between two variables, however, they cannot prove one variable causes a change in another variable. In other words, correlation should not be considered as causation. There is the presence of a number of other variables that may serve as a cause for the relationship that the researcher does not have control of the purpose of the study (McLeod, 2008). Furthermore, correlational studies do not allow the researcher to make statements beyond the data that is collected. It is difficult to make inferences in regards to the data (McLeod, 2008).

When considering limitations in this correlational design study, it is possible that while the study sample was quite diverse, the fact remains that the study was limited in terms of its generalizability to the total population of students participating in PBIS Tier II behavior interventions and their academic achievement. School settings and cultures are diverse within one district as well as across the country and it can be difficult to control this setting.

Another potential limitation in this study was the possible subjectivity of PBIS Tier II CICO process. While the school site has implemented this program for five years, staff members and teachers are providing individualized feedback to each student, which

obviously varies from student to student. Additionally, staff members and teachers recommend students to participate in PBIS Tier II interventions, which had the possibility of being a subjective process dependent on students and staff members involved. However, the researcher was confident that this school setting meets the needs of the students because it had met the expectations of the state PBIS organization for outstanding implementation.

A final potential limitation in this study may have been a lack of full teacher disclosure on the survey instrument. While there may be little that the researcher was able to do to prevent that from happening, the researcher was a staff member in this district, which could affect teachers' responses. By administering a paper copy of the survey to teachers and staff members, the researcher was able to explain the purpose of the research and ensure teachers that their responses were kept confidential.

Ethical Considerations

There is one main ethical consideration in this research; the personal nature of the student behavior and academic achievement scores. While this research measured these aspects in one school, conducting the research and disseminating research results was done in a manner that protected the individual study participants as well as the school where data was gathered. For this study, the research concentrated on the overall growth of the participant PBIS Tier II behavior intervention group. All student names were eliminated from the data substituting with a randomly assigned number. This eliminated the identifiable reporting of individualized student scores. In this manner, no data appeared within the finished study that could identify a student within this educational setting.

According to section J of the University of Missouri – Kansas City’s Social Science Institutional Review Board application, this study also represents no significant possibility of financial gain for the PI, my faculty advisor, or myself. This eliminates any suggestion of impropriety in the representation of data as discovered during the course of this study.

Potential Risks. There were no known or anticipated physical or psychological risks to participants in this study. The risk of loss of confidentiality is expected to be minimal in this study. Study participants were not identified in any published materials in a manner that would cause them or their organization to be personally identified. While every effort was made to keep confidential all of the information completed and shared by participants, it cannot be absolutely guaranteed. Staff members from the University of Missouri-Kansas City Institutional Review Board (a committee that reviews and approves research studies), Research Protections Program, and Federal regulatory agencies may look at records related to this study for quality improvement and regulatory functions. In addition, the principal investigator and their dissertation committee may access data at any time.

Conclusion

Positive Behavior Interventions and Supports (PBIS) focuses on creating consistent, predictable, positive and safe environments for all children (Fox, Dunlap, & Powell 2002). This statement reflects on how the concept of a school-wide behavior program works to create a desired culture within a school setting. Schools strive to create a culture that is safe as well as provides academic success, which can be a struggle. As Watson (2001) suggests, educators must be advised that if the school culture is not conducive to learning, student achievement could decline. This research study investigated the possible correlation between

student academic achievement and student participation in a PBIS Tier II behavior intervention. Within the framework of PBIS, students within the Tier II interventions are those students who are unable to meet the school-wide expectations. As Bandura (1997) proposes, students who believe in themselves work harder, persist longer, and have fewer negative emotional reactions when they face difficulties.

The remaining chapters in this dissertation are dedicated to three comprehensive purposes. First, a closer look is taken in chapter two at what current research and literature has to say about the theories of academics and behavior introduced in chapter one. Chapter two is divided into three main sections; school culture, student academic achievement, and literature around PBIS. Secondly, the method for investigating the relationship between the participation in the PBIS Tier II behavioral intervention and student academic achievement along with staff perceptions of these interventions are outlined in greater detail in chapter three. Finally, in chapters four and five, the researcher discusses the study results along with their implications.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

Positive Behavior Interventions and Support (PBIS) is a proactive prevention program that provides assessment driven, comprehensive support that focuses on redesigning environments to reduce problem behaviors and to increase adaptive, pro-social behaviors (Horner, Sugai, Lewis-Palmer, & Todd, 2001). There is a strong research base to support the use of PBIS in elementary, middle and high school educational environments and its adaptation to preschool settings shows promise (Fox, Dunlap, & Powell 2002; Stormont, Lewis, & Beckner 2005). Previous research indicated that implementation of school-wide PBIS is associated with a reduction in office discipline referrals (Taylor-Greene et al. 1997) and suspensions (Horner et al., 2005), and improvements in academic performance (Nelson, Martella, & Marchand- Martella, 2002).

PBIS focuses on creating consistent, predictable, positive and safe environments for all children. At the classroom level, key features of PBIS include: (a) careful planning of the physical environment, schedule, and materials; (b) teaching students about routines and expectations; and (c) acknowledging children for engaging in appropriate behavior (Fox et al. 2002). Furthermore, PBIS is not a formal curriculum but a two to three year process of leadership team training intended to establish school capacity for adoption and implementation of effective and preventive behavioral interventions; high implementation integrity; continuous use of data for decision making; established professional development and coaching to establish predictably safe, consistent, and positive social interactions at the

school-wide level (Horner, Sugai, & Anderson 2010). PBIS emphasizes familiar classroom and educational procedures, such as operational definition of behavioral expectations, active instruction, consistent positive reinforcement, a continuum of consequences that minimize reinforcement of problem behavior, and data use within ongoing problem solving (Sugai & Horner, 1999).

This review of literature will assist in defining school culture and the process for establishing and maintaining it as a safe and caring environment with high expectations for all students. Additionally, it will also discuss the aspects of student achievement and the many factors that come into consideration and affect our students. Furthermore, there will be discussion on the impacts and differing processes of school discipline and its effects on all students, specifically understanding overrepresentation of students of color in behavioral referrals, gender differences, and socioeconomic status differences (SES). An important section in the review of literature will be to understand the PBIS framework. With these topics in mind, the review of literature will be divided into five sections: school culture, student achievement and PBIS, school discipline and student equity, PBIS framework, and a conclusion.

School Culture

Introduction. School culture is one of the most complex and important concepts in education. In relation to school improvement and student achievement, it could be one of the most neglected. Schein (1985) considers the basic essence of an organization's culture to be, "the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously, and that define in a basic 'taken-for-granted'

fashion an organization's view of itself and its environment" (p. 6). These are the heart and soul of school culture, and what makes it difficult to grasp and change. Culture describes how things are and act as a screen or lens through which the world is viewed. In essence, it defines reality for those within a social organization, gives them support and identity and creates a framework for occupational learning. Each school has a different reality or mindset of school life, often captured in the simple phrase "the way we do things around here" (Deal & Kennedy, 1983, p. 140). It also has its own mindset in relation to what occurs in the external environment. Thus, culture is unique in different situations according to Beare, Caldwell, and Millikan (1989). School culture can be described in many ways and found in a number of scholarly books and articles; however, Leslie Goldring (2002) depicted it properly saying that:

Underneath the operating network of our roles as teachers, classified staff and administration lies a deeper, less visible structure called culture. Culture is a part of every group of people who gather together, whether in work groups, neighborhoods, schools or large corporations. Culture's power lies in the ability to dictate everything about a group, from what it discusses to the beliefs group members hold in common and values the group teaches. Culture is a visible and usable tool in schools, where relationships tend to hold more power than official roles and titles. (p. 32)

The analysis of school culture is critical when examining the School-Wide Positive Behavior Interventions and Support (SWPBIS) framework because school culture impacts student behavior, student academic success, and the interaction of the culture with its climate (Lewis & Sugai, 1999).

School Culture and Student Behavior. School culture can define the behavior of the students within the environment. According to Foucault (1990), "Power is everywhere; not because it embraces everything, but because it comes from everywhere" (p. 93). In this

analysis, "power and knowledge are joined together" and coexist because knowledge characterizes the values of those who are powerful enough to create and circulate them (p. 100). Foucault (1980) stated that the content of language, rather than the structure of language, is critical to discourse. Accordingly, discourse is the way the words or statements operate. Additionally, he declared that each society has its regime of truth, its "general politics" of truth or the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which it is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true (Foucault, 1980, p. 131).

With this in mind, many school conduct codes and discipline handbooks detail consequence processes designed to "teach" students that they have violated a school rule, and that their choice of behaviors will not be tolerated. When occurrences of rule-violating behavior increase in frequency and intensity, monitoring and surveillance are intensified to "catch" future occurrences of problem behavior, then rules and sanctions for problem behavior are restated and reemphasized. Previous studies suggested common "get tough" strategies such as loss of privileges, office referrals, detentions, retentions, suspensions, and expulsions as ineffective and were often counterproductive to reduce discipline problems and improve academics (Anderson, & Kincaid, 2005; Colvin, Kameenui, & Sugai, 1993; Sprague et al., 2001; Sugai & Horner, 2002; Sugai & Horner, 2008). Schools often used a reactive approach, applying a consequence after an incident happened, instead of employing preventative measures (Anderson & Kincaid, 2005; Colvin et al., 1993; Sugai & Horner,

2002).

Disruptive behaviors interfere with teacher instruction, student learning, and the school environment as a whole consuming a significant amount of school staff time and energy (Putnam, Luiselli, Handler, & Jefferson, 2003). Examples of student disruptive behaviors are repeated verbal and physical acts to peers and adults, repeated interruptions, incessant talking, angry outbursts, and walking around or leaving the classroom (Ayllon & Roberts, 1974; Seidman, 2005). These early signs of delinquent and anti-social behavior are linked to school failure, and in some cases, dropping out of school (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004).

To assist in changing the direction of school environments, decreasing disruptive behaviors while increasing responsible behavior and strengthening academics, educators must look towards the development and implementation of school-wide discipline programs realizing previous punitive measures such as punishment, office referrals, detentions, and suspensions have not worked (Bohanon, Fenning, Eber, & Flannery, 2007; Putnam et al., 2003; Sugia & Horner, 2008). Strategies and programs for school-wide discipline need to be proactive, preventative, clearly implemented, practiced and enforced with fidelity, and easily maintained (Guardino & Fullerton, 2010). The entire system by which the school operates must be restructured in order to accommodate for the SWPBIS framework. All policies, structures, and routines must be reorganized to more accurately reflect and emphasize the goals of SWPBIS. The environment also needs to be changed along with student and adult interaction and an overall change in the appreciation that is shown towards appropriate student behavior. The proactive aspect of SWPBIS requires factors within the school

environment that contribute to the development of disruptive behavior to be changed so that they encourage pro-social behavior instead.

School Culture and Student Academic Achievement. Culture refers to a set of common values, attitudes, beliefs, and norms found within a group or organization of individuals. As with any work environment, every staff member in the school setting is affected positively or negatively by the culture in which they work (Adamy & Heinecke, 2005). It could be said that the same is true and apparent for students as well. Watson (2001) warned us that if the culture is not conducive to learning then student achievement could decline. Schools operate in response to the established culture whether it is positive or negative. In 2004, three-fourths of the teachers surveyed believed classroom disruptions were the main reason educators had difficulty teaching students and students had difficulty learning (Guardino & Fullerton, 2010). Traditions are part of culture, but much of the day-to-day routine, whether in policy and procedure or acknowledged in unwritten expectations, guides everyone at the school. Districts, schools, and teachers struggled to find programs, strategies, and interventions that could change the course of a student's behavior while increasing academic achievement (Bohanon et al., 2007; Putnam et al., 2003).

Schools commonly seek a culture that supports good work and high student achievement (Brown, 2004; Goldring, 2002). In a paper written for the Denver Commission on Secondary School Reform, Brown (2004) noted the following ingredients for a productive school culture:

- An inspiring vision and challenging mission
- A curriculum and modes of learning clearly linked to the vision and mission
- A focus on student and teacher learning and quality work
- Close, supportive teacher-student, teacher-teacher and student-student

relationships

- Leadership that encourages and protects trust
- Data-driven decision-making
- Solid parental support (p. 4)

There is a strong correlation between certain aspects of a school's culture and how well students perform academically (Waters, Marzano, & McNulty, 2004). Bandura (2001) indicates in the social cognitive theory that what influences an individual's attitudes and behaviors is not necessarily objective reality but how the person perceives one's experiences. Consequently, school environment is likely to impact students' academic learning and school experiences through their perceptions, which are important targets for school improvement initiatives and student interventions. Lortie (1975) noted that teachers and students have more opportunities for succeeding in cultures focusing on productivity, performance, and improvement.

A further analysis of Bandura's social cognitive theory leads to the discussion of Bandura's self-efficacy. Bandura (1977) theorized that the beliefs that people hold about their capabilities and about the outcomes of their efforts greatly influence their behavior and self-efficacy help to determine the choices people make, the effort they put forth, how they handle difficulties, and their emotional readiness for life. Bandura (1986, 1997) hypothesized that self-efficacy beliefs are created and developed as students interpret information from four sources (see Figure 2.1), including verbal and social persuasions that students receive from others. Encouragement from trusted parents, teachers, and peers can increase the confidence of a student's academic competencies. Behavior interventions, such as the SWPBIS framework, can positively develop a school's culture and assist with the academic success of the students by impacting the students' self-efficacy.

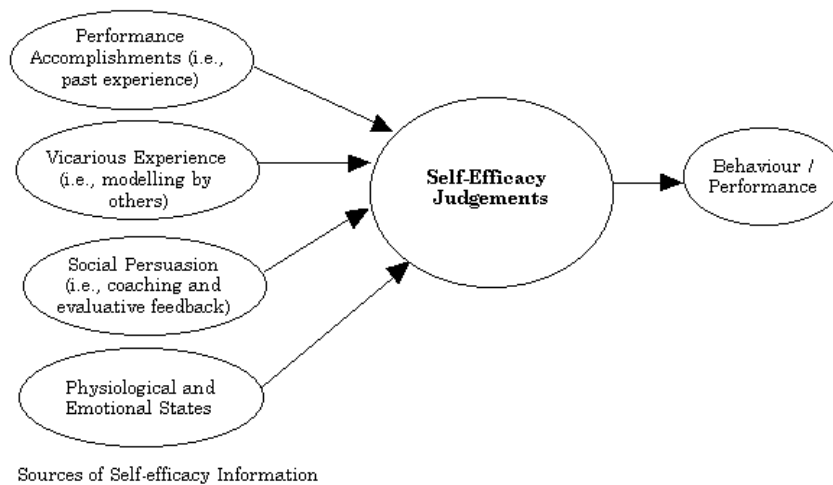


Figure 2.1. The Major Sources of Information for Self-Efficacy by Staples, Hlland & Higgins (1998).

School Culture and School Climate. Theorists can described school or organizational culture and climate as overlapping concepts (Miner, 1995). School climate is defined as the character and quality of life within a school that is shaped by its organizational structure, physical environment, instructional practices, interpersonal relationships, and overarching values, objectives, and customs (Cohen, McCabe, Michelli, & Pickeral, 2009). Understanding and examining school climate seems crucial, given the significant amount of research suggesting that positive school climate is associated with various student outcomes. Hoy, Tarter, and Kottkamp (1991) offered the difference between climate and culture as school or organizational climate being described from a psychological perspective and school culture described from an anthropological perspective. The differences between school culture and climate are highlighted in organizational studies. Often the climate is analyzed as

the behavior, and culture is depicted as including the values and norms of the school or organization (Hoy, 1990; Heck & Marcoulides, 1996). Lunenburg and Ornstein (2004) described organizational climate as the entire environmental quality within a school and believe that the attention of effectiveness within schools and their cultures has placed more interest on the importance of a school's climate. Schein (1985,1996) supported the relationship between culture and climate when he mentioned that norms, values, rituals and climate are all portions of culture. Through their research, McDougall and Beattie further supported the relationship of culture and climate (1998).

Although it can be difficult to disseminate between culture, or the shared norms, and climate, the shared perceptions, it is nevertheless real (Hoy & Feldman, 1999). Hoy and Feldman (1999) believed that the difference is meaningful and crucial because shared perceptions of behavior are more easily measured than shared values. They described climate as having fewer constructs than culture meaning that it is more descriptive and less symbolic, and concluded that climate presents fewer problems in terms of observed measurements.

Freiberg and Stein (1999) described a school climate as the heart and soul of the school and the spirit of the school that allows teachers and students to engage with and make the school a part of their lives. This transformed concentration on the importance of school climate was further reinforced by a meta-analysis study performed by Wang, Haertel, and Walberg (1997), which found that school culture and climate were among the top influences in affecting improved student achievement. Their study also found that state and local policies, school organization, and student demographics exerted the least influence on

student learning.

In recent years, the emphasis on climate has shifted from a management orientation to a focus on student learning (Sergiovanni, 2001). The reform efforts of the last 30 years have failed to improve student achievement in schools because they failed to adequately address the importance of the culture and climate of schools (DuFour & Eaker, 1998). The first major purpose of a school is to create and provide a culture that is hospitable to human learning (Barth, 2001). Structural changes made to improve schools without addressing the culture and organizational health of schools has predictably not been successful (Sarason, 1996). Fullan (2001) sees the importance of school culture when leaders realize change is needed at the workplace. He refers to this as "reculturing" (p.44). This focus on change reflects moral purpose through collaborative work cultures in which differences of opinion are respected. Fullan suggests that knowing there are things that need to be improved should be viewed as a learning opportunity, and that the school culture can provide openness for change efforts. School culture and climate, while difficult to disseminate, rely on one another to be create an effective learning environment for students.

School Culture and Human Development. Barth (2001) suggests that the first major purpose of the school setting is to create and ensure a culture that encourages human learning. The documented achievement gap (National Center for Education Statistics, 2009) between mainstream and marginalized groups of students demonstrates how school culture affects school learning. Educators recognize that “the gap is not an inevitable fact of nature” (Greene & Abt-Perkins, 2003) and that the overarching educational policies are a significant basis for achievement differences (Cochran-Smith, 2004; House, 1999). Power relations

exist in the classroom, and teachers' actions toward students are influenced by teachers' perceptions regarding multiple socio-cultural factors (Collins, 2003; Ferguson, 1998).

Race and ethnicity influences on school culture. McKown and Weinstein (2008) found significant correlations between lower student achievement and teacher biases based on student ethnicity, particularly African American and Hispanic students. Ladner and Hammons' (2001) data show that "districts with more white teachers have a greater rate of minority enrollment in special education, particularly for African-American students" (p. 104). Furthermore, Weinstein, Gregory, and Strambler (2004) report that biased teacher perceptions of diverse students could be a consequence of a predominantly Caucasian teaching staff that acts on common stereotypes. Additionally, Lynn, Bacon, Totten, Bridges, and Jennings (2010) mentioned that many African American teachers also assign negative assumptions to African American males, a perception that could likely influence the students' low achievement rate. This research identifies that a teacher, from any cultural group, can act on negative assumptions about students. These studies demonstrate that race continues to play a role in American schooling.

Additionally, in a study conducted by Farkas, Grobe, Sheehan, and Shuan (1990), the research team examined the informal academic standards by which teachers reward the general skills, habits, and styles of students of color. Farkas et al. (1990) found student work habits as observed by teachers had a powerful effect upon the grades they received in the classroom. Demonstrating that teacher judgments of student non-cognitive characteristics, such as homework, class participation, effort, and organization, are powerful determinants of course grades. Furthermore, the researcher shared that Asian student course grades were a

full letter grade higher than their peer Caucasian students. However, after controlling for cognitive and non-cognitive variables, this number declined by 80 percent demonstrating again although the Asian students outperformed their non-Asian peers on cognitive assessments, the non-cognitive performance as determined by their teachers' judgments of work habits contributed at a greater amount for this social group. Farkas et al. (1990) shares that "any individual or group possessing strong basic skill performance as well as a reputation for good citizenship can achieve unusually high course grades" (p. 140).

Gender influences on school culture. Beyond teacher perceptions surrounding race, the assumptions behind gender can conversely affect the school's culture of human learning. Gender bias and early gender socialization have been common arguments used to explain many academic and behavioral differences between boys and girls. Rousso & Wehmeyer (2001) suggest that teachers hold gender biases and expectations based on differential socialization patterns and sex role stereotyping. In addition, boys are more likely to have higher levels of activity and exhibit behaviors that do not fit the classroom culture or norms, and as such are more likely to be referred to special education or behavior programs (Maccoby & Jacklin, 1978).

Carl (2012) presented a discussion on gender and its role in the classroom. Through his analysis, he shared how teachers interact differently with boys and girls and how this may or may not affect those children is a diverse conversation. Carl (2012) mentions "it appears that in general teachers do not view gender differences in ability in children unless those children are performing poorly" (p. 29). Additionally, teachers respond more positively to students from the same or similar background as themselves (Carl, 2012). This can greatly

influence student academic production. Dee (2005) shares that if a student perceives that a teacher has an interest in her or him, that student is more likely to be successful. On the contrary, Simpson and Erickson (1983) found that teachers praised as well as criticized male students more than female students, and criticized black males more than any other group. Within Farkas et al. (1990), it was found through the analysis of teacher judgments of student work habits that males score higher on coursework mastery despite teacher judgments regarding their inferior work habits and greater disruptiveness. Furthermore, the socially constructed view of gender differences and bias aligns with Wehmeyer & Schwartz's (2001) question of whether there is an over-representation of males in special education or if there is an under-representation of females. Gender roles are a critical component when evaluating a school's culture and human learning.

Social class influences on school culture. Diane Reay (2006) has written that social class is “everywhere and nowhere, denied yet continually enacted” (p. 290). Another influence on academic success and a building's culture are the perceptions revolving around a student's social class. Schools attempt to offer opportunity for students and often within the same setting reproduce existing social classes (Anyon, 1997; Bowen & Bok, 1998; Domhoff, 1983). The social class of America's students is a critical factor in their ability to achieve the desired academic success. Research demonstrates a number of connections between teachers' expectations of students from various social classes and students' academic achievement or success. Kozol (1991) emphasized the many effects of social class upon academic outcomes as well as the personal well-being of the students. The inequality is present in schools nearly twenty years later. Furthermore, Banks and Banks (1993)

suggested that:

...Social class backgrounds affect where students go to school and what happens to them once they are there. As a result, lower-class students are less likely to be exposed to less valued curricula, are taught less of whatever curricula they do study and are expected to do less work in the classroom and outside of it. Hence, they learn less and are less well prepared for the next level of education. (p. 82)

Anyon (1980) found that:

School experience...differed qualitatively by social class. These differences may not only contribute to the development in the children in each social class of certain types of economically significant relationships and not others, but would thereby help to reproduce this system of relations in society. (p. 225)

For some students, schools are a setting where class differences may be noticed for the first time. It is in these settings of differences that some students create a realization of their own class status and come to deal with its meaning in their own lives, as was illustrated by working-class woman in Ostrove and Cole's (2003) work:

What I remember most about school was that if you were poor you got no respect and no encouragement. I mean if you didn't have cute ringlets, an ironed new uniform, starched shirts, and a mother and father who gave money to the church, you weren't a teacher's pet and that meant you weren't encouraged. (p. 677)

It is critical to realize the behaviors demonstrated by educational staff make a difference in not only the lives of the students, but also the school's culture.

Conclusion. In conclusion, school culture can be one of the most complex and important concepts in education. In relation to school improvement and student achievement, it could be one of the most neglected. Schein (1985) considers the basic essence of an organization's culture to be, "the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously, and that define in a basic 'taken-for-granted' fashion an organization's view of itself and its environment" (p. 6).

When establishing a school's culture, it is critical to examine its effect upon the school's climate, the student academic success, teacher perceptions of students, and student behavior. As the preceding research demonstrates, all three are greatly impacted by and greatly impact the school's culture.

Student Academic Achievement and PBIS

Introduction. Based on our current educational reform culture of accountability, the federal government has established mandated expectations and benchmarks through legislation like No Child Left Behind Act of 2001 (NCLB, 2002) and educational contests like Race to the Top (Johnson & Stevens, 2012) that originally concentrated on student academic achievement primarily through student standardized assessment scores. While standardized assessments provide a measurable, quantitative number, there is debate as to whether it provides the entire scope of the academic achievement of schools and, more specifically, the students (Guisbond & Neill, 2004). As a result of this debate, the U.S. government has provided the ability of relief or to request flexibility for states not meeting the specific requirements of NCLB (NCLB, 2012).

To continue to improve the United States educational system and prepare all students to be "college and career ready" according to the Common Core State Standards Initiative (2011), there is a recent increased importance placed on accountability for students' reading and math achievement. As a result, school administrators are forced to make decisions on programs that will best serve students (Gapp, Zalud, & Pietrzak, 2009). As a result, it is critical for administrators to collect evidence that the academic programs they implement create benefits for all students. While there are many options for collecting this data and

many factors that play into the student academic scores on the standardized tests, research suggests student problem behavior is one important factor (Morrison & D’Incau, 1997; Scott, Nelson, & Liaupsin, 2001). Due to the fact that negative behavior has the tendency to create loss of instructional time and negatively impacts learning, interventions (like PBIS) that sustain instructional time by keeping students in class should positively affect student academic achievement.

Academic Achievement and PBIS. While there is a lack of research when examining the relationship between PBIS Tier II intervention supports and academic success, there is available research on the correlation between the school-wide PBIS structure and academic success. Most of the research on PBIS and student academic achievement discusses the relationship between PBIS and improved scores in Reading and Math as well as the relationship between PBIS and increased instructional time. In a review of research, Putnam, Horner, and Algozzine (2006) found a number of studies that denoted a relationship between academic performance and undesired behavior from the elementary school level to the high school level. In 2005, McIntosh researched how reading skills correlate with disciplinary problems in schools. According to his research, each student enters school with varying reading skills and at different level. As a result, if they experience negative achievement in reading instruction, they are more likely to exhibit problem behaviors. As academic skills become harder, students will often misbehave as a way to escape or avoid these tasks (McIntosh, 2005). Tobin and Sugai (1999) also found correlations between students’ academic success and their behavior, particularly middle and high school students. A student’s academic failure in high school was correlated with the number of suspensions

he or she had in ninth grade. This research also provided a correlation between specific types of office discipline referral (ODR) behaviors, such as fighting or threats of violence, and sixth graders' grade point averages (Tobin & Sugai, 1999). This research provides an understanding and supports the possibility of a correlation between academic achievement and PBIS.

Instructional time is a much sought after commodity in education. "Time is fundamental to good teaching" (Heafner & Fitchett, 2012, p. 191). In 2006, Putnam, Horner, and Algozzine demonstrated in their research that the amount of time spent on instruction is greatly connected to student achievement. Within their research, they suggested that PBIS has the ability to decrease problem behavior in schools, thus increasing the amount of instruction time (Putnam, Handler & O'Leary-Zonarich, 2003; Scott & Barrett, 2004). Within other research studies aligned with PBIS and increased student achievement, Luiselli, Putnam, and Sunderland (2002) found that after a middle school implemented PBIS, school attendance increased and students' maintained higher report card grades over the course of four years. These studies demonstrate the effectiveness and correlation between the implementation of PBIS and students' academic achievement. Horner, Sugai, Eber, and Lewandowski (2004) completed a comparative study of Illinois schools that did and did not implement PBIS. It was found that the schools with PBIS had 62% of third graders meet the state's Reading Achievement Standard. On the other hand, the schools not implementing PBIS had 47% of third graders meeting the state standard on Reading Achievement. Furthermore, in 2005, Luiselli, Putnam, Handler, and Feinberg found that the students in schools implementing PBIS increased standardized tests scores in math by 25% and in

reading by 18%. Putnam, Horner, and Algozzine (2006) conducted a comparative study within an Oregon school district using PBIS finding that standardized test scores improved when compared to districts that did not implement PBIS. A final study conducted in Maryland by Parr, Kidder, and Barrett (2007) demonstrated that schools implementing PBIS gained instructional minutes and showed significant gains on reading and math state achievement tests. The studies presented show a variety of schools and locations supporting the possible correlation between academic success and implementation of PBIS.

While there are studies present that support a correlation between academic achievement and PBIS, there are studies that provide a disconnection between the two variables. Postles (2011) completed dissertation work indicating that when comparing Maryland middle schools with and without PBIS there were no significant results in student achievement in reading or math assessment scores. In a similar study, Jamison (2010) stated that while PBIS positively impacted student behavior, it had no significant effect on an elementary school students' reading or math performance on state tests. Both of these studies were found through dissertation research and while they may not be as thorough as research published at the national level, it is critical to depict the differences in how PBIS is related to student achievement in all settings.

Conclusion. Through this literature review of the student academic achievement in reading and math, studies have demonstrated a high correlation between PBIS and student achievement scores. Nevertheless, it could also be said that the increased student achievement could be accredited to a number of other factors, such changes to curriculum or faculty and administration or individualized assessment issues. Furthermore, establishing

clearly defined expectations for students to follow is advantageous, but it could be argued that PBIS alone does not cause students to achieve higher academic scores.

School Discipline and Student Equity

Introduction. John Dewey (1916) believed the public school system was developed to replicate the “needs of existing community life...improving the life we have in common so that the future shall be better than the past” (p. 225). While it could be argued that this is still the purpose of the educational system, it could also be discussed that the opposite is occurring and students are not receiving the support that they deserve or need (Noguera, 2013). Discipline and equality go hand in hand when considering the current state of education. Educators and politicians continue to work to prevent and reduce problem behaviors within schools (Han & Akiba, 2011), yet negative student behaviors are widespread, critical issues that continually affect the safe school environment in the United States (Han & Akiba, 2011). For this review of literature, focus will be placed on differing views of the theory behind discipline as well as the equity present within the discipline practices among the school setting.

Theory behind Discipline. Discipline within the school system has many forms. In *Discipline and Punishment* (1977), Foucault described discipline in a variety of settings, including hospitals, prisons, and schools. Foucault stated that discipline procedures were a means of coercion that began through observations. Individuals with power could observe their subjects and manipulate their behavior through certain methods. In his work, Foucault (1977) suggests these observations are possible through his belief of panopticon. The panopticon was a design used in prisons where there was a central tower to make it possible

to see all the inmates no matter their location (see Figure 2.2). Having the ability to observe at all times provides power and control to those in charge. The unfortunate problem with this approach and design is that it is used throughout many of our schools in the building designs. According to Foucault (1977), observation of students by teachers and administrators was just as much a part of school as academic instruction. If a student does not behave correctly or goes against the established expectations by those in power, he is then and should be punished. However, in many current disciplinary programs, the goal is to correct or reform negative behavior through re-teaching of the expected behavior (Gutting, 2012).

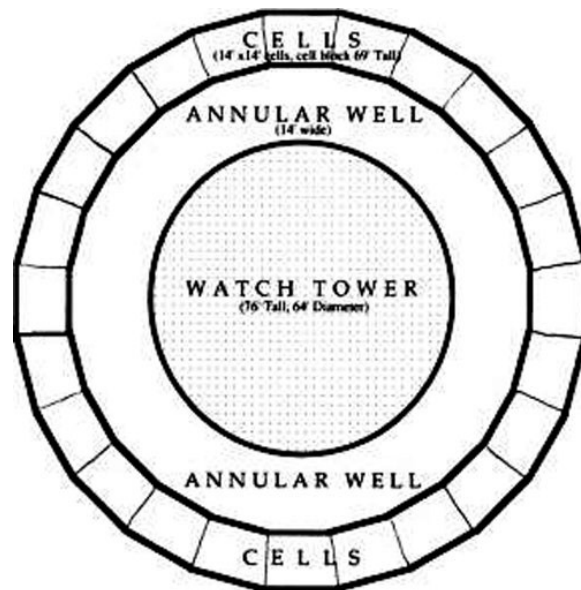


Figure 2.2. Panopticon plan shown by Jeremy Bentham (1791) original drawings. Retrieved from Leopold Lambert in *The Funambulist – Bodies, Space & Politics*.

B.F. Skinner's theories on discipline, and more specifically, operant conditioning,

have established the manner in which teachers discipline their children for years. While his initial theories did not focus on the classroom setting and child behavior, they have contributed to the techniques and methods used in the classroom since the 1960s (Charles & Senter, 2004). Charles and Senter (2004) shared the impact that Skinner had on discipline through four means: behavior modification, constant reinforcement, intermittent reinforcement and reinforcing stimuli. Behavior modification is the use of reinforcement to create the desired behavior of a student (Ganly, 2010). Constant reinforcement according to Charles and Senter (2004) is the belief that behavior is shaped by what immediately happens after an individual acts, which supports the ideas behind PBIS and the use of positive reinforcement. Intermittent reinforcement is used after expectations have been established and the reinforcement is needed much less (Charles & Senter, 2004). When considering the reinforcing stimuli, there is much connection between Skinner's theories and PBIS, in that positive stimuli assist in creating an environment where students are behaving in a desired way (Charles & Senter, 2004; Horner, Sugai, & Anderson, 2010). Furthermore, Skinner (1986) identified that reinforcement has both a pleasing and strengthening effect on behavior. However, "when we feel pleased, we are not necessarily feeling a greater inclination to behave in the same way" (Skinner, 1986, p. 569). Skinner made contributions to understanding discipline and more specifically behavior response.

Discipline is a broad concept designed to provide for good behavior or to correct poor behavior. An effective discipline program operates in concert with an effective classroom management system. Good discipline programs prevent most problems by attending to student physical, intellectual, social and emotional needs. Effective discipline techniques

focus on improving a student's self-image and sense of responsibility through encouragement and kind words rather than rebukes and reprimands. Teachers can send messages that students are valuable and capable even when students make inappropriate choices (Shalaway, 1989; Purkey & Strahan, 2002).

Furthermore, a few more theories behind discipline that assist in understanding the theories of discipline in the classroom. Danielson (2002) defines discipline policies as the "rules regarding student conduct, both within classroom and in the school as a whole" (p. 53). Jones (1987) shares that classroom discipline is the business of enforcing classroom standards and building patterns of cooperation in order to maximize learning and minimize disruptions. It is also critical to understand that studies investigating antisocial behavior have regularly illustrated that low academic performance is related to behavioral problems (Maguin & Loeber, 1996). All of the prior theories impact the classroom each day in regards to behavior and response to it.

Discipline and Student Equity. Student equity can be best described by the Organization of Economic Cooperation and Development (OECD) as the issue of fairness of student achievement being based upon ability and application, and not on factors like gender, socio-economic status or ethnicity. Additionally, equity should show that all individuals have a right to basic literacy and numeracy (OECD, 2012). In this study, the first portion of this definition is most critical for the application of PBIS in the elementary setting. "Students' background has an impact on their academic achievement – those whose parents have a low level of education, who have low socio-economic status, or come from an immigrant background, as well as boys, have a higher risk of low performance at age 15" (OECD, 2012,

p.72).

While schools, in nature, strive to create a setting that is consistent to John Dewey's (1916) beliefs, there is a struggle with consistent discipline that is equitable in nature for all students. As research shows, many schools in the U.S. most often punish the students who have the greatest academic, social, economic, and emotional needs (Johnson, Boyden, & Pittz, 2001). In fact, when analyzing the students to be most likely suspended, expelled or removed from the classroom are the students of color, males, and students who are considered low achievers in the classroom (Meier, Stewart, & England, 1989). The school environment used in this study was chosen not only for its implementation of PBIS, but also because of its large representation of students of color as compared to other schools in the district. Furthermore, when examining literature on educational equity, Skiba (2000) found that schools' disciplinary practices show that the students who receive the most severe punishments are commonly students with learning disabilities, students living outside of the care of their primary home or parents, and those students on students on free or reduced-price lunch. Additionally, "Regrettably, students of color are receiving different and harsher disciplinary punishments than whites for the same or similar infractions, and they are disproportionately impacted by zero-tolerance policies--a fact that only serves to exacerbate already deeply entrenched disparities in many communities" (Perez, U.S. Department of Justice, 2006).

Pedro Noguera (2003) has found through his research that the disciplinary practices in schools frequently look like the means used to punish adults in our society. Noguera (2003) argues further that educators are consistent with our societal responses, in that, we assume

that by removing our misbehaving students from the equation, our classrooms and schools will be safer and more productive. While this may work in the short term, this practice can be least effective for students who are not receiving the benefits of educational practices (Noguera, 2003). If the students continue to find and experience negative responses at school, Noguera (2003) found that they are more likely to continue to step away from education realizing that it may not provide them with what they need socially or academically. Brookover and Erickson (1969) explained that this could lead to a label of defiant and difficult to maintain. Johnson (1995) mentioned that this leads to the student living up to this belief and begin to live life in this way. The circle then continues, in that, the student consistently acts out and is disciplined for the behavior just as we observe with adults in our society (Noguera, 2003).

Noguera (2003), just as Perez (2006), shares that through his research punishment in schools often aligns with what is observed within our adult society and can be based around race, gender and socioeconomic status. Due to this alignment, there is also a correlation between the academics and behavior portion of the school system. Students of color, particularly, African American and Latino students, are overrepresented as academically eligible for special education services and underrepresented in programs for the gifted and talented (National Research Council, 2002). This can lead to higher dropout rates, lower levels of academic skills, and higher school failure on average for students of color youth when compared to other students (Skiba, Michael, Nardo, & Peterson, 2000).

Conclusion. Through this review of literature on school discipline and student equity, the theories behind discipline often align with the response to a behavior as well as the desire

to form or maintain a certain behavior. Additionally, studies demonstrate a connection between the race, gender and socioeconomic status of a student and the likelihood of receiving punishment. Student equity is a goal of schools, however, it can be argued that this is not happening consistently throughout the country. This leads to what Noguera (2003) refers to as a prison-like environment found in our schools. Through this study and its methodology, the research may be able to support these generalizations found in the literature review.

School Wide Positive Behavior Interventions and Support Framework

Introduction. PBIS consists of three tiers of interventions. School-wide, all students receive basic preventive support, and moving up the tiers results in increasingly intensive interventions that align with the level of support needed by the students. The three tiers within PBIS are primary prevention (often referred to as universal supports or Tier I), secondary prevention (targeted interventions or Tier II), and tertiary prevention (intensive supports or Tier III). Each tier consists of specific practices and systems features used to guide implementation (Sailor et al., 2006). This proactive, preventive approach contrasts with a reactive approach where student behavior problems are addressed only after they have occurred. The school- wide PBIS model utilizes universal positive preventive support strategies that provide systematic training of expected social behaviors and reinforcement of those behaviors to all students in the school. Approximately 80% to 90% of students are projected to respond successfully to the school- wide component of PBIS. A second group of students (about 5- 10%) who engage in problem behaviors beyond acceptable levels, even in the presence of school- wide PBIS, are provided secondary supports that include efficient

group- based interventions with increased structure and contingent feedback, for example, Behavior Education Programs and Check In Check Out (CICO) procedures. A third and even smaller number of students (1 - 5%) who enter schools with significant skills deficits that do not respond to school- wide or secondary interventions, will need more intensive individualized interventions in order to succeed in school. The main objective of the three- tiered PBIS model is to establish a positive school climate for all students and create systems to foster durable changes in the behavior of higher- needs students (Horner et al, 2005; Sugai & Horner, 2002, 2006).

Aligning with its foundation on behavior science, the beliefs of SWPBIS stress that unwanted behavior could be traced to unintentional behavior interactions between peers and between students and teachers (Sugai et al., 2000). Thus, if these unintentional, unwanted interactions are eliminated, or at least reduced, it is believed that there will be a reduction of problem behaviors. An emphasis must be placed on environmental redesign in any SWPBIS program for it to be truly successful (Knoster, Anderson, Carr, Dunlap, & Horner, 2003). The program is sure to fail if the school environment does not “support the effective, efficient, and sustained use” of SWPBIS practices (Sugai & Horner, 2002, p. 67). Since teaching is seen as the central tool to use in changing behavior, the curriculum should even be redesigned to reflect the goals of SWPBIS in that it teaches students new and pro-social behaviors (Sugai et al., 2000). SWPBIS is based directly on behavioral theory, applied behavior analysis specifically (Anderson & Freeman, 2000; Anderson & Kincaid, 2005; Carr et al., 2002), which emphasizes the lawfulness of behavior, interplay between physiology and environment, and ability to affect behavior through environmental manipulations (Alberto &

Troutman, 2005; Cooper, Heron & Heward, 1987; Wolery, Baile, & Sugai, 1988).

SWPBIS school environments hope to improve the lifestyles of students in general. The program strives not only to affect the academic aspect of a child's life but also the personal, health, social, family, recreational, and work aspects (Sugai et al., 2000). The idea is that if students can act in a socially acceptable manner, it will establish them as better able to succeed in all aspects of their lives. In fact, any proactive discipline model views school discipline not simply as the final answer. Discipline within schools must be seen as influential in the success of students, yet it must not become the primary teaching goal of the school (Colvin et al., 1993).

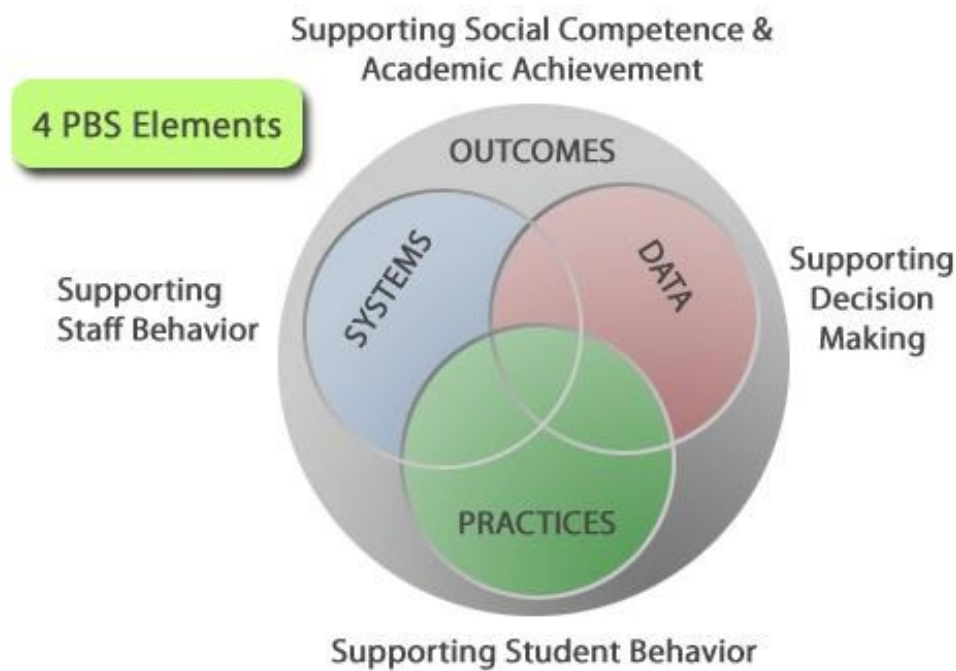


Figure 2.3. Four PBS Elements by OSEP Technical Assistance Center on PBIS (2012).

School-wide PBIS tiered interventions. School-wide PBIS consists of three tiers of interventions. All students receive basic preventive support, and moving up the tiers results in increasingly intensive interventions that match the level of support to the needs of students. The three tiers within school-wide PBIS are primary prevention (often referred to as universal supports or Tier I), secondary prevention (targeted interventions or Tier II), and tertiary prevention (intensive supports or Tier III). Each tier consists of specific practices and systems features used to guide implementation.

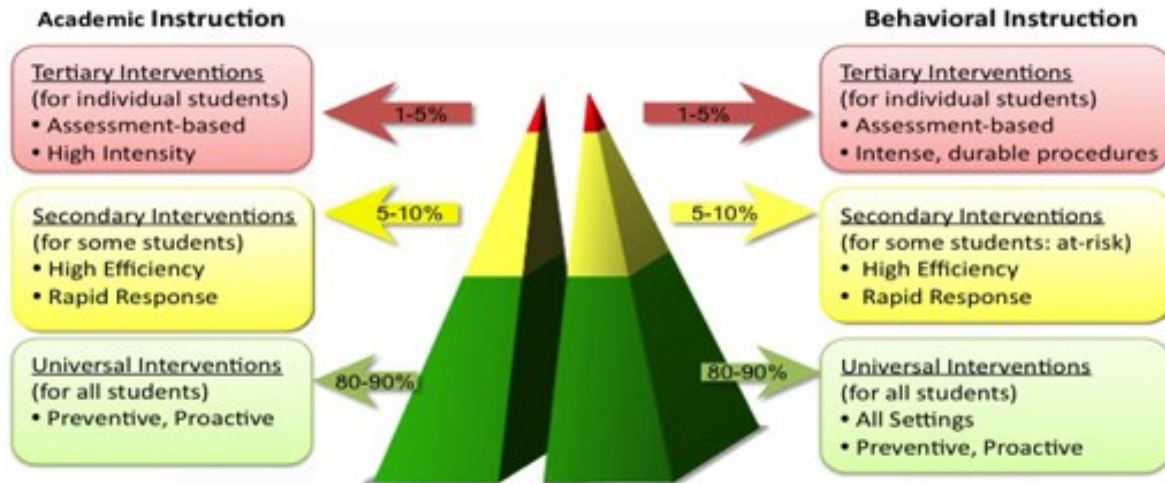


Figure 2.4. Response to Intervention (RtI) and PBIS alignment by OSEP Technical Assistance Center on PBIS (2012).

Primary intervention or tier I. Primary prevention is implemented across the entire school for all students (Horner & Sugai, 2000; Sugai et al., 2010). One of the core intervention features is the clearly stated school wide behavioral expectations that are taught

using direct instructional procedures. In addition, all students receive consistent positive reinforcement for meeting school-wide expectations. Data about problem behavior are collected, summarized, and used for regular decision making by teams. Systems features at this level of support include team organization, data use to guide implementation, and incorporation of school-wide PBIS training and orientation as part of annual staff development (Hagan-Burke et al., 2005). Primary prevention is implemented across the entire school, and all adults in the school participate in its delivery. This includes not just teachers and administrators but also playground supervisors, custodial staff, cafeteria workers, and bus drivers (Horner & Sugai, 2000).

Secondary intervention or tier II. Secondary intervention is designed for students who are not responding to the primary level of support or are at-risk (Hagan-Burke et al., 2005). It is found that this is approximately 15% of students within the building who receive this level of intervention (Sugai et al., 2010). Secondary prevention practices are defined as intervention strategies made up of behavior change strategies that are similarly implemented amongst all students receiving the intervention. Examples of frequently implemented secondary interventions are check and connect, CICO, first step to success, think time and social skills groups (McIntosh, Campbell, Carter, & Dickey, 2009). Other means of interventions include using schedules to increase daily structure and providing closer supervision (Cheney, Flower, & Templeton, 2008). In Tier II, data collection occurs more often so that interventions can be adjusted quickly if a student is not meeting predetermined behavioral goals (Hagan-Burke et al., 2005). In addition to progress monitoring, schools designate one or more intervention coordinators who have time allocated to the management

of secondary interventions (Beard-Jordan & Sugai, 2004).

Check in/Check out. As part of the secondary interventions, schools have the option of interventions to support students who are unable to consistently meet the expectations of the primary school-wide interventions. One such secondary intervention is Check In/Check Out (CICO). This intervention is designed to provide a more targeted intervention plan as compared to the school wide behavior expectation support and can be applied to a number students at one time, usually around 15% of the building population (Crone, Horner, & Hawken, 2004). CICO provides daily, hourly scheduled, positive feedback contact between the student and teachers who interact with the student in the classroom setting. This interaction allows for discussion or collaboration on the student's behavioral performance and whether behavioral goals are being met. A number of researchers have examined the impact of CICO in elementary school settings with students in the traditional classroom setting (Campbell & Anderson, 2008; Hawken, O'Neill, & MacLeod, 2011; Todd, Campbell, Meyer, & Horner, 2008). Additionally, some studies have evaluated students with individual education plans in traditional school settings (Hawken & Horner, 2003; Todd et al., 2008; Simonsen, Myers, & Briere, 2011) and most all have shown the effectiveness of the program. Various research techniques have been used to assess for CICO effectiveness including: frequency of office discipline referrals (Filter et al., 2007; Hawken et al., 2011), problem behavior ratings (McIntosh, Campbell, Carter, & Dickey, 2009), and direct observation of problem behavior (Campbell & Anderson, 2008; Todd et al., 2008). However, there is some argument to whether this intervention is effective. In these studies, the lack of responsiveness is based on: student with behavior maintained by a function other than adult

attention may be less responsive to CICO (Campbell & Anderson, 2008; March & Horner, 2002; McIntosh et al., 2009), personal goals for the students may be set too high or seen as not worth meeting by the student (Lane, Capizzi, Fisher, & Ennis 2012), and the rate of reinforcement is too infrequent (Ennis, Jolivette, Swoszowski, & Johnson, 2012; Swoszowski, Patterson, & Crosby, 2011).

Tertiary intervention or tier III. Tertiary prevention supports are for students whose behavior has not responded to the primary or secondary interventions in a school. Tertiary supports are individualized to the multiple and unique needs of each student concerned with individualized assessment and intervention, typically involving functional behavior assessment and team-based intervention (Sugai et al., 2000). Much of the research on the tiers of PBIS is strong, however much of it is based on the primary intervention level, not the tertiary level (Sailor, Stowe, Turnbull, & Klienhammer-Tramill, 2007; Simonsen, Sugai, & Negron, 2008). However, the support plan typically consists of multiple parts, including strategies to influence the larger social context around a student, prevent the occurrence of problem behavior, teach new skills, ensure that appropriate behavior is reinforced, and minimize the likelihood that problem behavior is reinforced (Borgmeier & Horner, 2006). Even at this level of intensity, students continue to access the primary prevention intervention. Tertiary supports require frequent progress monitoring to ensure that a student is making adequate progress and that the intervention is being implemented as designed (McIntosh, Chard, Boland, & Horner, 2006).

Conclusion. School-wide PBIS and its tiered support structure provides schools with a behavior intervention plan to meet the needs of the student population. Each tier provides

supports for all students, depending on their need for meeting the expectations established by the building staff and leadership team. As part of the tiered system, this study will concentrate on the secondary tier and the CICO intervention used to support those students unable to meet the universal expectations according to building staff. In the review of literature, it is shown that this program most often shows effectiveness in meeting the behavioral needs of the students. This will be critical to understand and evaluate as to whether the academic achievement of the students is also positively impacted or seen as effective.

Summary of Review of Literature

This review of literature concentrated on the ideas based around the correlation between student academic achievement and participation in a PBIS Tier II behavior intervention support. By focusing on school culture, academic achievement, school discipline, student equity, and the framework of PBIS, the review supported the need to better understand the possible relationship between a behavior intervention and academic achievement as the research is lacking in the field.

When reviewing each of these topics, studies show that school culture can be one of the most complex and important concepts in education. In relation to school improvement and student achievement, it could be one of the most neglected. When establishing a school's culture, it is critical to examine its effect upon the school's climate, the student academic success, and student behavior. Beyond the establishment of the culture, it was found that there may be a high correlation between implementation of school-wide PBIS and academic success, however this could also be tied to a number of other factors. This is definite

consideration when conducting this study and its impact on academic achievement. If a school is able to establish a culture with high expectations, there are definite benefits to students and staff alike.

While the school-wide expectations provide a baseline for what is desired from students, it is up to staff members to be consistent with discipline. There is much theory behind the purpose of discipline as to whether it is to teach or control, however the most discouraging aspect is the inequality that is found in those who are punished. The research reflects that those who receive the brunt of the punishment are male, students of color coming from a lower-income background. This study will look to see if this generalization is true in the current school setting.

As a final piece to this review of literature, the research examined the framework of PBIS and how it operates within the school setting. Much of the research behind PBIS shows a positive impact on the culture and the students involved. The current school setting has been implementing this program for five years and provides a culture to understand a possible relationship between academic achievement and behavior interventions.

CHAPTER 3

METHODOLOGY

Introduction

This chapter will discuss the in-depth process used in order to conclude that the results collected and displayed in this dissertation proposal are reliable and valid. There will be discussion on the research design, setting and participants, sample size, data collection, instrumentation, research procedure, quality control, and data analysis.

With the correlational research design concentrating on the relationship between the school's implementation of PBIS Tier II interventions and student reading and mathematics achievement, it is critical to understand the role of PBIS within a building. This study analyzed students involved in Tier II PBIS behavior interventions over the school years of 2011-2012 and 2012-2013 and the impact these interventions have on their academic achievement. Furthermore, this study analyzed the perceptions of school staff members as they work with students involved in the PBIS Tier II behavior interventions. The Positive Behavior Interventions and Supports framework is a school-wide systems of support including proactive strategies for defining, teaching, and supporting appropriate student behaviors to create positive school environments. Instead of using a combined approach of individual behavioral management plans, a range of positive behavior support for all students is implemented in all areas of the school including the classroom and the non-classroom settings, like hallways, buses, and restrooms (Sugai & Horner, 2002). PBIS places attention on creating and supporting primary (Tier I or school-wide), secondary (Tier II or classroom), and tertiary (Tier III or individual) systems of support that improve every part of a child's life

by making targeted behaviors less effective, efficient, and relevant, and desired behavior more purposeful (Sugai & Horner, 2002).

A correlational research design can be defined as a “statistical technique that is used to measure and describe the relationships between two variables” (Gravetter & Wallnau, 2013). Within this design, it is common that the variables are not manipulated in any way rather they are observed in their natural setting. As a result, the researcher has little to no control of the data results or how it is collected (Thompson, Diamond, McWilliam, Snyder & Snyder, 2005).

Schools effectively and efficiently implementing PBIS focus each aspect of the school around the principles established by the framework. The academic, behavior, and social facets depend on the expectations and principles set forth by the school staff and the staff members hold true to these positive behavior expectations. Introducing, modeling, and reinforcing positive social behavior is an important step of a student's experience. Teaching behavior expectations and rewarding students for following the expectations is a more positive approach than waiting for misbehavior and then reacting to it. The purpose of school-wide PBIS is to establish a climate in which appropriate behavior is the norm. Progressing through this study allowed for a better understanding of the relationship between the behavior interventions of PBIS and the reading and mathematical academic achievement of elementary students.

Research Design

The purpose of this quantitative correlational study was to determine the relationship between the student participation in Tier II behavior intervention support program and

student reading and mathematical achievement. A review of literature suggests that although there are many theories regarding the change in school climate and culture after implementation of PBIS, there is little research that explores changes in student academic achievement as a result of the implementation. In order to understand the overall effectiveness and extension of PBIS and Tier II intervention supports, it is necessary to gain further understanding of possible correlation between PBIS and academic achievement according to standardized reading and mathematics assessments. This research design analyzed the students who participated in the Tier II behavior interventions over a two-year period (2011-2012 and 2012-2013) comparing their standardized assessment scores against other students within the same school not participating in Tier II behavior interventions. These comparisons allowed for a better understanding of the possible relationship between the PBIS interventions and student academic achievement by analyzing student achievement of those students not receiving more concentrated behavior support.

Beyond the academic achievement analysis, this study evaluated staff member perceptions of student academic success of students involved in PBIS Tier II behavior interventions. A five point Likert-type scale survey collected the perceptions of the staff members. A Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions (Bowling, 1997). It is assumed that the strength or intensity of the experience is linear or on a continuum from strongly agree to strongly disagree. Additionally, it is assumed that attitudes can be measured (Burns & Grove, 1997). The Likert-scale is a five to seven point scale with is used to allow an individual to express how much they agree or disagree with a particular statement (Bowling, 1997). The staff

survey also had three qualitative open-ended questions, which allowed for dialogue from the staff.

Methodology is designed through consideration of the situation and phenomena under study, connecting research questions and hypotheses, data collection procedures, and data analysis. With quantitative research, the intention is to determine the relationship between one variable to another variable within a population (Hopkins, 2008). Quantitative research designs are either descriptive, establishing only associations between variables, or experimental, establishing causality (Hopkins, 2008). The quantitative design aligns with the research goals of this study and assisted in determining the possible relationship between the behavior interventions and student academic achievement. The following sections will describe the setting, the sampling techniques and participants, the measures used, and data analysis followed by further description of participant duties.

Setting

The school and district selected for this study are located in a Midwestern suburban metropolitan area public school district. The district serves 10,448 students in two high schools, two 7th-8th grade middle schools, one 6th grade center, ten elementary schools and one alternative setting school. Of the 10,448 students, around 4,700 attend schools at the elementary level of kindergarten through 5th grade. Comparing itself to other district in the Midwestern metropolitan area, this district is 6th largest in student enrollment. Additionally, the racial characteristics of this enrollment consists of 71.5% White, 10.4% African American, 9.2% Hispanic, 4.2% Multi Racial, 3.2% Asian, 1.2% Pacific Islander, and 0.5% Native American making the district's percentage of students of color at 28.5% (Missouri

Department of Elementary and Secondary Education, 2013). In the 2003-2004 school year, the Caucasian population made up over 84% of the student enrollment demonstrating a shift in student population within the district over the past 10 years. Along with the changes to racial characteristics percentages, it is also critical to evaluate the district's free or reduced lunch rate at 28.6% of the student enrollment, which has increased by nearly 15% since the 2003-2004 school year level of 16.7% (Missouri Department of Elementary and Secondary Education, 2013).

In this research design, the current school is situated at the northern end of the district and is projected to see additional growth over the next ten years according to district's projections (Park Hill School District, 2012). With a recent addition of a tenth elementary school and new elementary school boundary lines within the district, the school lost nearly 120 out of 500 students and of those enrolled at the school around half of them attended the school prior year. The current year's enrollment was slated at 362 students in Kindergarten through 5th grade. The racial demographic percentages include 38% of the student enrollment is considered students of color and 40% of the students receive free or reduced lunch. Both of which are at least 10% above the district's average. With the new boundary lines, there has also been a shift in the student mobility rate as it dropped from around 18% to 10.5% (Missouri Department of Elementary and Secondary Education, 2013).

Table 3.1

Elementary School Site and District Demographic Data

	School Site			District	
	N	Percent of Sample		N	Percent of Sample
Male	174	48.1%	Male	5,348	51.2%
Female	188	51.9%	Female	5,098	48.8%
White	225	62.2%	White	7,469	71.5%
Black	40	11.0%	Black	1,086	10.4%
Asian/Pacific Islander	14	3.9%	Asian/Pacific Islander	460	4.4%
Hispanic	47	13.0%	Hispanic	439	4.2%
Native American	0	0.0%	Native American	52	0.5%
Free and Reduced Lunch (SES)	145	39.3%	Free and Reduced Lunch (SES)	2,943	28.6%
Total	362		Total	10,446	

When considering the characteristics that make this district unique, it is important to notice the demographic changes within the district over the last ten years. The district has not only increased in size by around 1,000 students over those ten years, it also has encountered changes in regards to free or reduced lunch percentages and a shift in racial demographics. Along with these changes, there has also been a higher percentage of recent

student mobility at 40% (Park Hill School District, 2012). Additionally, this district recently added a tenth elementary school, which required the district to re-draw the attendance boundaries for each elementary school.

Furthermore, this school district and specific elementary site was included because of the fidelity and duration of PBIS implementation. Eight of the district's ten elementary schools have implemented PBIS for at least 2-6 years allowing for the establishment of effective practices according to the national PBIS standards, which evaluate the fidelity of PBIS practices at the school level. Furthermore, the school site began implementation of PBIS six years ago and has received statewide recognition for its practices and success with student behavior interventions.

Participants

This study used two means to determine the sample group. First, a criterion sampling was implemented to determine the students within the school site who have participated in Tier II behavior interventions through PBIS during the school years of 2011-2012 and 2012-2013. Criterion sampling involves selecting cases that meet some predetermined criterion of importance (Patton, 2001, p. 238). A researcher is able to set the criteria and pick all cases that meet the said criteria. The criterion-based sample evaluated in this study was first through fifth grade students attending a Midwestern metropolitan public elementary school. Academically, due to the format and requirements of the STAR Reading and Math Assessment, kindergarten students do not complete this assessment and as a result were included in the sample for this study. During the 2011-2012 and 2012-2013 school years, 77 students in grades first through fifth have received the supports of PBIS Tier II interventions.

When collecting the student data, there were inconsistencies with the program's management of student information. Because of this mismanagement, some student names were documented only with first names or were inconsistent with class records not allowing for the student information to be found. Additionally, some students moved from the district and demographic information was no longer within the district's database. As a result, the number of students who participated in PBIS Tier II interventions dropped to 71 students.

In order to understand the possible relationship between PBIS Tier II interventions and academic achievement, this study also used randomized sampling to determine a comparison group who did not participate in the Tier II interventions. A random sample requires that each individual of the population have an equal opportunity of being selected (Gravetter & Wallnau, 2013). For this sample, the researcher identified the same number of students in each grade level during each school year. In order to randomly select the comparison group, the researcher used the grade level class lists for each year and the number of students in the Tier II interventions during that year; then counted by that number to determine the students who would serve as the comparison group. This process produced a number of 71 students in the comparison group. This allowed the final sample to be N=142 students.

Instrumentation

To determine the academic achievement portion of this study, the researcher used the Renaissance Learning STAR Reading and Math assessments. The STAR Reading Assessment is a computerized adaptive assessment created by Renaissance Learning. In this assessment, students begin with a reading passage and multiple choice questions that are

considered on-grade level. If the student answers the question correctly, the STAR Reading assessment will present the student with a more challenging item. If a student misses a question, the STAR Reading assessment will present the child with a less challenging question. The test consists of around 25 questions, depending on the grade level.

The STAR Math Assessment is similar to the STAR Reading Assessment in that it is a computerized adaptive assessment created by Renaissance Learning. In this assessment, students are assessed on around 25 questions that are considered grade-level equivalent questions aligning with the Common Core State Standards (Renaissance Learning, 2014). Depending on a correct or incorrect response to a question, the students are given a more challenging or less challenging question on the next assessment item.

Renaissance Learning provided three reliability tests for the STAR Reading and Math assessments, a generic test, the split-half reliability test, and the alternate form test. For the STAR Reading all three produced a high reliability ranging from 0.82 to 0.91. For the generic test, the variance of the test scores is easily calculated from scaled score data. For the split-half test, the scores were based on the first twenty-four items of the STAR Reading norming test, and the scores based on the odd- and the even-numbered items were calculated. The correlations between the two sets of scores were corrected to a length of twenty-five items, yielding the split-half reliability estimates. The results indicated that the overall reliability of the scores was about 0.92. The coefficients ranged from a low of 0.88 in grade 1 to a high of 0.91 in grade 5. These reliability estimates are mostly consistent across grades 1–12, and somewhat high for a test composed of only 25 items. This is mostly due to a result of the measurement efficiency natural in the adaptive format of the STAR Reading test

(Renaissance Learning, 2014).

For the alternate test, the reliability study provided estimates of STAR Reading reliability using a variation of the test-retest method. In the traditional approach to test-retest reliability, students take the same test twice, with a short time interval, usually a few days, between administrations. However, the STAR Reading alternate form reliability study administered two different tests by avoiding during the second test the use of any items the student had encountered in the first test. All other aspects of the two tests were identical. The correlation coefficient between the scores on the two tests was taken as the reliability estimate. The average number of days between testing times ranged from five to eight days with most grades having taken the follow-up test about one week after the initial test. Results indicated that the overall reliability of the scores was about 0.91. The alternate form coefficients ranged from a low of 0.80 in grades 8, 10, and 11 to a high of 0.90 in grade 12 (Renaissance Learning, 2014).

When discussing the validity of the STAR Reading assessment, Renaissance Learning provided the within-grade average concurrent validity coefficients for grades 1-6 that varied from 0.70 to 0.82 with an overall average of 0.74. The predictive coefficients ranged from 0.69 to 0.74 in grades 1-6, with an average of 0.92. Overall, these correlation coefficients reflect very well on the validity of the STAR Reading test as a tool for placement in Reading. In fact, the correlations are similar in scale to the validity coefficients of these measures with each other.

For the STAR Math assessment, research completed during the development of assessment confirms that the test is reliable, valid, and correlates highly with state

standardized math tests. The STAR Math assessment was normed using a nationally representative sample of 29,230 students from 256 schools in 42 states across the U.S. The reliability was established with two reliability studies: test-retest (n=1,541) and generic reliability (n=25,795). The grade-level reliability estimates from both studies are exceedingly high, ranging from 0.78 to 0.88 with most estimates greater than 0.84 (Renaissance Learning, 2014).

An additional study (n>9,000) determined the validity of STAR Math by comparing students' scores on STAR Math to their scores on other standardized tests such as the California Achievement Test and the Iowa Test of Basic Skills. This comparison produced a high correlation between STAR Math scores and scores on other tests with most are above 0.70. This demonstrates the validity of STAR Math for measuring student math achievement and the assessment's prediction ability for student performance on other such tests (Renaissance Learning, 2014).

This study used the scaled score (SS) in terms of calculating student academic achievement growth. According to Renaissance Learning (2014), the SS is useful in comparing student performance results over the course of time as well as across grade levels. The SS is calculated based on the difficulty of the questions and the number of correct responses. STAR Reading and Math both use a scaled score range of 0 to 1400.

The second instrument consisted of a collection of the behavior data. Included in this collection was the PBIS Check In/Check Out (CICO) data sheet (See Figures 3.1 and 3.2) and the names of the students involved in the interventions. The CICO data sheet is provided to Tier II students each morning upon arrival at school. On this sheet, the student's day is

divided into hourly increments and an expectation is placed on the classroom teacher and student to discuss the student's overall behavior each hour. A score of 0, 1, or 2 is then assigned to the student based on positive, respectful, in control and determined behavior. A score of 2 meets behavior expectations. The behavior classifications are determined through the school wide expectations and school's focus for desired behavior. At the end of the school day, the student scores are tallied and measured to determine if the student's goal of 80% or higher is met. Goals are set on an individual basis to meet the needs of the each student.

PRIDE Pack
Work Hard, Do Your Best, Show Your Renner PRIDE!

Name: _____ Date: _____

0= No 1= Sort of 2= Got It!	Positive (Attitude)	Respectful (Words and actions)	In Control (Body)	Determined (Homework and work completion)	Teacher Initials
FIT time	0 1 2	0 1 2	0 1 2	0 1 2	
9:30-10:30	0 1 2	0 1 2	0 1 2	0 1 2	
10:30-11:30	0 1 2	0 1 2	0 1 2	0 1 2	
11:30-12:30	0 1 2	0 1 2	0 1 2	0 1 2	
12:30-1:30	0 1 2	0 1 2	0 1 2	0 1 2	
1:30-2:30	0 1 2	0 1 2	0 1 2	0 1 2	
2:30-3:30	0 1 2	0 1 2	0 1 2	0 1 2	
Encore	0 1 2	0 1 2	0 1 2	0 1 2	
Every Day	0 2				

Total Points Possible: 66 My Goal: _____ Points Earned: _____

Parent Signature: _____

Figure 3.1. School Example 1 of the PBIS Check In/Check Out student daily data sheet.

Check & Connect

Name: _____

Date: _____

Goal:
I can use appropriate personal space 80% of my day.
 ___/28

Parent Signature: _____

0= No 1= Got it!-	Body	Language
FIT time	0 1	0 1
9:30-10:00	0 1	0 1
10:00-10:30	0 1	0 1
10:30-11:00	0 1	0 1
Lunch	0 1	0 1
Recess	0 1	0 1
12:00-12:30	0 1	0 1
12:30-1:00	0 1	0 1
Encore	0 1	0 1
1:40-1:50	0 1	0 1
2nd Recess	0 1	0 1
2:10-2:30	0 1	0 1
2:30-3:00	0 1	0 1
3:00-3:30	0 1	0 1

Figure 3.2. School Example 2 of PBIS Check In/Check Out student daily data sheet.

This information is then transferred to an electronic copy by the school’s PBIS coordinator and graphed (See Figure 3.3) to show trend lines and overall scores for the student on a daily basis. The students’ data in this study was eligible as a result of teacher recommendations as students in need of additional assistance with behavioral expectations and placement in the Tier II intervention of Check-in/ Check-out because of the inability to meet the school-wide behavior expectations (Tier I level).

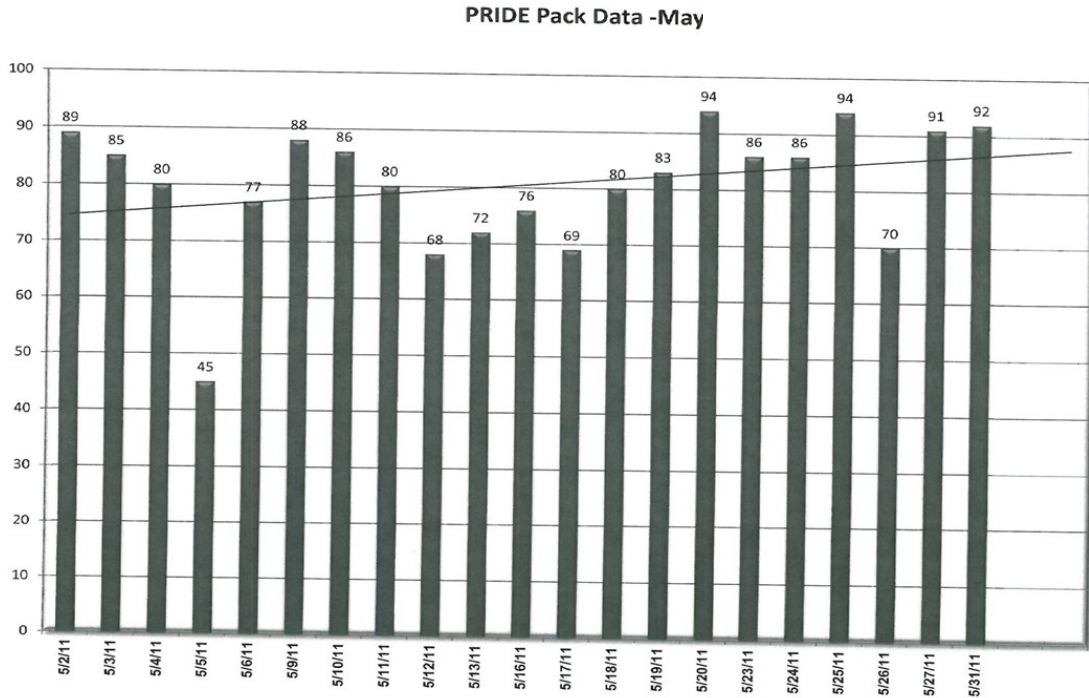


Figure 3.3. School student example of daily behavioral scores collected from the Check In/Check Out data sheets. This figure shows a four week time frame for the student.

The third instrument used was Likert-type scale survey (See Appendix A) completed by staff members at the school site to analyze the staff perception of student involvement in Tier II behavior interventions and their academic achievement. This survey consisted of 24 questions, of which 21, were placed on a five-point scale with a range including strongly agree, agree, not sure, disagree, and strongly disagree. Additionally, the survey includes 3 open-ended questions allowing the staff to share thoughts regarding interaction with PBIS Tier II support. The twenty-four questions concentrated on the overall staff perceptions of the implementation of PBIS within the building as well as the perceptions of the academic

and behavior of students participating in the Tier II interventions. A Likert-type scale uses fixed choice response formats and are designed to measure attitudes or opinions (Bowling, 1997). The researcher created descriptive statistics that will report the means and standard deviations for the each survey item calculated for the total sample as they relate to the research question. For the open-ended questions, the researcher analyzed the responses concentrating on specific themes or patterns that materialized from the data. A detailed analysis was completed providing generalized perceptions of the staff in this site regarding PBIS Tier II support and student academic achievement. Furthermore, this staff survey could possibly assist in understanding the possible relationship between academic achievement and the Tier II behavior intervention.

Variables

The dependent variable in this study is the student reading and mathematics achievement scores over the course of the student's participation within the Tier II intervention supports. Students were assessed using the STAR Reading and Math Assessments, which were completed on three occasions during the course of each school year—August, December, and April. The independent variable is the student participation within the PBIS Tier II intervention supports within the elementary school. With the correlational research design, this study determined the relationship of the participation in PBIS Tier II behavior interventions and student academic achievement in reading and mathematics.

Data Collection

Data collection took place in three steps. First, the school's PBIS coordinator was

contacted to gather the number and names of students who participated in the PBIS Tier II behavior interventions during the school years of 2011-2012, 2012-2013 and 2013-2014. With this information, the researcher was allowed access by the district's Director of Research, Evaluation and Assessment to the student demographic data and STAR assessment results of each student. The entirety of this data assisted in answering three of the study's research questions. It was determined during this collection process that a comparison group of students who did not participate in PBIS Tier II behavior interventions would be beneficial in understanding the possible correlation of Tier II participation and academic achievement.

Secondly, when collecting the STAR assessment data for each school year, it was determined that the 2013-2014 Spring STAR assessments would not be available prior to the completion of this study. As a result, the researcher decided not to include the third year of data. With 77 Tier II students in the 2011-2012 and 2012-2013 school years, the researcher used a power analysis to determine the minimum sample size before settling on the number. The power analysis found that in order to detect a medium effect size of .35 that is statistically significant when alpha is .05, the G*Power 3 program (Faul, Erdfelder, Lang & Buchner, 2007) recommends a minimum of 134 participants. The output for the g-power calculation can be seen in Figure 3.4. The sample size of 134 is achieved with the addition of the comparison group. With the comparison sample of students, the participant number increased to 154 as possible participants. The sample size ended up at 142 students after the researcher was unable to gather the correct full names for missing students and due to the lack of demographic information for students who moved from the district.

T tests - Correlation: Point biserial model

Analysis: A priori: Compute required sample size

Input:	Tail(s)	=	Two
	Effect size $ \rho $	=	0.3
	α err prob	=	0.05
	Power (1- β err prob)	=	0.95
Output:	Noncentrality parameter δ	=	3.6404323
	Critical t	=	1.9780988
	Df	=	132
	Total sample size	=	134
	Actual power	=	0.9509217

Figure 3.4 Sample size calculation using g-power (Faul, Erdfelder, Lang, & Buchner, 2007).

For the academic achievement piece of the study, all students attending the school site are required to complete the two STAR Assessments over the course of the each year. STAR Reading and Math assessment data were collected for each of the students who participated and did not participate in the Tier II intervention during the 2011-2012 and 2012-2013 school years. This data was accessed through the district's Director of Research, Evaluation, and Assessment and district's online student data warehouse. The STAR Reading and Math assessments are administered at three times during the year for students in grades one through five, however for the purposes of this study, the researcher used the Fall (August) and Spring (April) assessments. These assessments are computer based and were completed by the students to determine their reading and math scale scores.

The Tier II CICO data was gathered from the school's PBIS coordinator who is responsible for compiling the daily student data and inputting the information into Microsoft Office Word and Excel documents to create spreadsheets for further school analysis. Additionally, this student data provided the participants' gender, race, SES, IEP, and LEP for

further knowledge as well as to address the first research question. The students' names were not included as to protect the student population and only used for data collection purposes. All of the behavior data collection was completed through data mining as compared to using human participants. Additionally, the school district uses an online data warehouse (Matrix) for behavior incidents. Having access to this program provided statistical information for the students.

Third, the researcher asked building staff members to complete the staff PBIS perception survey. Employing a teacher perception survey, quantitative and qualitative data was collected in terms of PBIS Tier II behavior intervention implementations and student academic achievement growth. This sample was N=30 and included any staff member within the school building. The Likert survey questions provided a scaled range from low to high at 21-105. The means and standard deviations of each survey item were calculated for the total sample as they related to each research question. With open-ended questions, the researcher completed a detailed analysis of the teacher perceptions of PBIS Tier II interventions based on each survey item. This survey data was collected during a staff meeting during which the researcher explained the background and purpose of the study. All surveys were anonymously collected as to protect the teacher population.

Data Analysis

The purpose of the statistical analysis was to analyze the presence and significance of a correlation between a student's participation in PBIS Tier II interventions and the student's academic achievement. As members of the educational profession continue to seek understanding of the power of a school building's culture and the continuous focus on

student achievement scores, the ways in which schools support students both behaviorally and academically is an important area of focus.

This correlational research design was based on a research design whereas the primary goal is to identify a relationship between an independent variable and a dependent variable. The independent variable is defined as the variable that is manipulated by the researcher usually consisting of the two or more treatment conditions and is manipulated prior to observing the dependent variable (Gravetter & Wallnua, 2013). The dependent variable is “the variable that is observed to assess the effect of the treatment” (Gravetter & Wallnua, p. 16, 2013). Multiple data sources collected for this research study include: STAR Reading, STAR Math, student demographic and socioeconomic data, student CICO data, and staff perception survey. Furthermore, the goal is to understand the nature of the relationship between the independent and dependent variables. In this case, the research analyzed the student reading and mathematics achievement amongst elementary students on an adaptive assessment when receiving Tier II intervention behavior support through PBIS. The behavior assessment was assessed through the guidelines of the PBIS framework in place within the school studied. A comparison sample of students was used to compare students who did not participate in Tier II behavior interventions and their academic achievement.

Descriptive Analyses

Descriptive statistics are those that describe the data, such as the mean, median, and mode (Runyon et al., 2000). Descriptive statistics were used in three distinct areas within this research. One, it was critical in answering the first research question: *What are the demographic characteristics, including race, gender, socioeconomic status (SES),*

individualized education program (IEP) status, and limited English proficiency (LEP) status of the students participating in the PBIS Tier II behavioral intervention program in a Midwestern suburban metropolitan public elementary school? By analyzing the demographic indicators for the student sample of those participating and not participating in the PBIS Tier II behavior interventions a number of tables were created. A table of the student demographic information provides a context for establishing the population to whom the research results may be generalizable. This type of table is also used to describe the specific school within the study to better understand its student population. The tables referred to in this paragraph may be found in chapter four on pages 91, 92, and 93.

The second area in which descriptive statistics were used is in the display of data obtained from the Likert-scale portion of the staff perception survey. For Research Question 4, *what are teachers' perceptions of the implementation of PBIS Tier II interventions on the academic achievement of elementary students?* a PBIS Satisfaction Survey (See Appendix A) including 24 items, of which participants will rate 21 of the statements on a five-point Likert scale: 1-Strongly Disagree, 2-Disagree, 3-Not Sure, 4- Agree, and 5-Strongly Agree. The other three items are open-ended questions relating to the perceptions of the teachers' experiences with PBIS Tier II support. The Likert questions were analyzed by placing questions into thematic groups based on the literature presented in chapter two. From this work, a mean score was calculated based on responses of agree and strongly agree. Tables were created to provide the thematic results of the teacher perceptions and are presented in chapter four. The survey instrument assessed various elements of PBIS. Teachers were asked to rate their feelings about the program's impact on student and staff behavior, their

satisfaction with the program's expectations/consequences, and their perceptions of students' participation in Tier II behavior interventions. Other items required teachers to rate their feelings on how PBIS affects the school climate and how it is implemented throughout the school. The researcher created descriptive statistics that reported the means and standard deviations for the each survey item calculated for the total sample as they relate to the research question.

The third area in which descriptive analyses will be used is in calculating the correlation coefficients between student participation in PBIS Tier II interventions and student academic achievement. Pearson's product moment correlation coefficient was the equation used to calculate these statistics. This statistic is represented by r and tells us the connection between two variables. Correlational data provided a picture of how each of the independent variables correlates with the dependent variable of student achievement individually. Additionally, the correlational data was essential to the calculation of later inferential statistics.

Inferential Analyses

This study is intended to determine the relationship between the implementation of PBIS Tier II behavior interventions on the reading and math progress of students in grades 1 through 5 receiving the Tier II interventions. For Research Questions 2 and 3: *What is the relationship between student participation in PBIS Tier II behavioral interventions and reading academic achievement?* and *What is the relationship between student participation in PBIS Tier II behavioral interventions and mathematical academic achievement?* the researcher initially conducted a two-sample t-test. A two-sample t-test is used to determine if

two population means are equal (Snedecor & Cochran, 1989). This two sample t-test was used to determine whether there is a significant change in the reading and/or mathematical achievement of students participating in Tier II behavior interventions of CICO from 2011 to 2013 as compared to students during the same time frame with consistent scaled score achievement scores who do not receive Tier II behavior interventions at the school level. Within this study, the researcher analyzed the scaled score observing the gains made by the students over the course of the year. Furthermore, to determine the significant change, the researcher used the Pearson correlation model to allow particular amounts of variance to be accounted for among variables. The use of the Pearson correlation is one means in which to achieve this purpose. Through this analysis process, the Pearson's r for each correlation is used which allows the independent variable to be examined against the dependent variable. This result is then squared, and referred to as R (r-square). The R -value indicates how much variance a given independent variable accounts for, within the dependent variable (Gall, Gall, & Borg, 2007). Specifically, a Pearson correlation measures the degree and the direction of the linear relationship between two variables (Gravetter & Wallnau, 2013). This is particularly beneficial in this study, as it should be able to show how much variance a student's participation in PBIS Tier II behavior interventions contributes to student achievement in reading and mathematics.

In this study, I wanted to know whether there is a relationship between the participation in a PBIS Tier II behavior intervention and reading and math academic achievement. By evaluating the students participating in the Tier II intervention and comparing them against their peers not participating in the interventions, the desire as to

identify differences such as academic gains or losses. With the two sample two-tailed t-test, the research will use an alpha level of .05, which is the “probability value that is used to define the concept of very unlikely in a hypothesis test” (Gravetter & Wallnau, 2013, p. 238). The alpha level assisted in the rejection or acceptance of the null hypothesis. The researcher evaluated scaled score gains and did not matter if the gains were greater or less dependent on grade level. The comparison group assisted with this understanding. Additionally, the researcher evaluated beginning performance levels for the students participating in PBIS Tier II interventions as well as the peers not participating in the PBIS Tier II interventions. By evaluating the mean performance level, this provided a consistent baseline for both sets of individuals.

Qualitative Analysis

In order to analyze the qualitative open-ended questions on the teacher perception survey, this study used the qualitative content analysis approach. This approach has been defined as “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005, p. 1278). Additionally Mayring (2000) claims it as “an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytic rules and step-by-step models, without rash quantification” (p. 2). A third definition provided by Patton (2002) suggests this approach is “any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” (p. 453). According to Zhang and Wildemuth (2009), qualitative content analysis uses an inductive approach by

examining topics and themes from the data and drawing inferences to generate theories behind the responses. Furthermore, data samples are selected texts that assist in answering the research questions posed in the study. Zhang and Wildemuth (2009) suggested that such an approach typically produces descriptions and expressions from the participants reflecting how they view the world around them. This in turn, assists the researchers and other readers in better understanding the responses of the participants (Berg, 2001). This analysis approach pays attention to unique themes that demonstrate “the range of the meanings of the phenomenon rather than the statistical significance of the occurrence of particular texts or concepts” (Zhang & Wildemuth, 2009, p. 2).

Through the analysis process, the researcher analyzed the teacher responses to the three open-ended questions. The grounded theory will be used to determine if patterns emerge in the responses. Grounded theory is utilized when working qualitatively with a subject that either lacks theory, or that has multiple theoretical backgrounds. Grounded theory starts with open-ended questions that allow for exploration of a specific topic or area of interest. The sample data is then used to determine if there are concepts, patterns, or themes that emerge that provide explanation for the original research questions. These themes can then be compared to see if one theme is more prevalent than another (Charmaz, 1983). The constant comparative method found in grounded theory enables the researcher to identify similarities and differences between the teacher responses (Moss, Gibson, & Dollarhide, 2014). For the purpose of this study, the sample data was examined to determine if themes emerge around the teacher perceptions towards the PBIS Tier II intervention implementation. In looking at the sample data, the following open-ended questions were

used: (1) *What are some ways that you think PBIS Tier II support (Check In/Check Out) have impacted students' reading and mathematical achievement?* (2) *What barriers or obstacles do you feel hinder the implementation of PBIS Tier II support for students?* (3) *What additional thoughts or concerns do you have about PBIS Tier II support for students?* Then those themes were examined to determine specific usage and context in which those initial themes were frequent.

Additionally, an open coding method was utilized when examining the teacher responses. Open coding allows for the breaking-down, examining, comparing, and conceptualizing the terms, phrases, and concepts in a particular text (Strauss & Corbin, 1998). In open coding, the data is examined starting at the most primitive level to look for terms, phrases, and/or concept that occur frequently. These terms, phrases, and/or concepts are then placed into broad categories based upon their frequency and the context under which they are used. These categories are continually developed and expanded upon as the data is examined at various levels (Strauss & Corbin, 1998). For the purpose of this study, open coding included the researcher looking for themes related to increases and decreases in academic achievement in reading and math, decreases in negative behavior, and support for teachers. During the data analysis, the researcher searched for these themes as well as others that may present themselves. Further, those themes were examined to determine how often they occurred and the context around their usage.

When drawing conclusion on the collected data and themes, the researcher looked to make inferences and present the meaning behind the responses of the teachers. This process involved exploring the properties and dimensions of categories, identifying relationships

between categories, uncovering patterns, and testing categories against the full range of data as suggested by Bradley (1993). Furthermore, the researcher used quotations and charts to justify conclusions and report findings as is seen in chapter four.

Conclusion

Limited research exists on teachers' perceptions of PBIS and how the program impacts their motivation and satisfaction (Horner, Freeman, Nelson, & Sugai, 2007) as well as the impact on the academic achievement of students participating in Tier II interventions. Through surveys and by analyzing standardized assessments, additional information can be gained in these areas. In using this information, administrators and PBIS teams may be able to implement PBIS more effectively and ensure that students learn appropriate, positive behavior. This chapter discussed the in-depth process used in order to conclude that the results collected and displayed in this correlational research study are reliable and valid. It included discussion on the research design, setting, participants, data collection, instrumentation, research procedure, and data analysis.

CHAPTER 4

RESULTS

In order to determine the correlation, if any, between the implementation of PBIS Tier II behavior interventions and student academic achievement in reading and math, several statistical tests were conducted on the data collected from the sample. In this chapter, three main areas of emphasis will be covered. First, a detailed description of the final sample for this study will be provided. Secondly, the results of the several statistical tests conducted on the sample will be delivered. Third, the results of the teacher perception survey with thematic analysis will be described. Through these three sets of information, the results of the research questions presented in chapter one were discovered.

This study employed the use three different statistical tests, a frequency descriptive analysis, the Pearson correlation, and the T-test. In order to address Research Question 1, which addressed the demographic characteristics of the students participating in the PBIS Tier II behavioral intervention program, a descriptive analysis was completed to identify the demographic information of the sample, which in turn could assist in the generalizability, or the accuracy with which the findings could be transferred to individuals or situations other than those originally studied, of the study (“Generalizability,” n.d.). A descriptive analysis is a conclusion technique that is used to quantitatively describe key features of data in a research study. They give a simple summary about a sample from the research study (Mann, 1995). Additionally, this analysis assisted in evaluating the frequency of the student sample characteristics. Frequency in statistics is considered the number of times an event occurs within the study (Kenney & Keeping, 1962).

Research Questions 2 asked if there was a relationship between student participation in PBIS Tier II behavioral interventions and reading academic achievement. Research Question 3 asked if there was a relationship between student participation in PBIS Tier II behavioral interventions and mathematical academic achievement. In order to address these questions, a Pearson's Correlation was conducted to measure the strength of the relationship between a student's participation in PBIS Tier II behavior interventions and the student's academic achievement in reading and math. The Pearson correlation "measures the degree and the direction of the linear relationship between two variable" (Gravetter & Wallnau, 2013, p. 514). According the Pearson correlation, no relationship was found between the two variables when considering significance at 0.05 level.

Furthermore, a two-sample T-test was employed to determine if there was a statistically significant difference between STAR Reading and Math assessment scores and students' participation in PBIS Tier II behavior interventions. A two-sample T-test examines the difference between two population means to see if the means are equal ("Two-Sample t-Test," 2014). Statistical significance is the probability that an effect is not due to just chance alone (Coolidge, 2012) and for this study the statistical significant difference determined with a p value of greater than 0.05 level. Results of the two-sample T-test statistical revealed no statistically significant findings at this p value of greater than 0.05 level suggesting that the PBIS Tier II behavior interventions do not have an effect on the reading or math gains of first through fifth grade students within this study.

The statistical tests administered in this study additionally addressed the two research hypotheses as stated: H₁: students participating in the PBIS Tier II behavioral interventions

will make more significant reading achievement gains when compared against their peers within their school. H₂ stated: students participating in the PBIS Tier II behavioral interventions will make more significant mathematical achievement gains when compared against their peers within their school. Changes were considered significant at $P < .05$.

While the findings were not statistically significant, they do provide additional empirical evidence to a current body of research that lacks depth. This study was designed to inform the learning of school leaders on PBIS Tier II interventions in light of academics. Chapter four will provide empirical data relating to the findings of this study in addition to providing empirical evidence useful to the practice of current educational leaders as described in chapter five.

Description of the Sample

The sample size included 142 students in grades first through fifth during the school years of 2011-2012 and 2012-2013. Of these students half of them (n=71) participated in the PBIS Tier II intervention of Check In/Check Out at some point during the two school years. The other half of the sample (n=71) was made up of a random sample of students who did not participate in the Tier II behavior interventions. These students served as a comparison group to better understand the academic achievement and demographic make-up of the students involved in the Tier II intervention. Furthermore, the building staff (n=30) was surveyed to gather information about their perception of PBIS within the building. Detailed descriptions of the student and staff samples are provided in this section for two important reasons. One, the descriptive data provided an overall picture of the demographic make-up of the study sample. This is useful in determining the type of population that the study data may

be generalizable towards. Gall et al. (2007) mention that results of a study should be generalized to a larger population with care (p. 389). In order to help the reader correctly determine the population to which these study results can be generalized, it is critical to have a clear understanding of the original population. The second reason this process is important is because it outlines the raw data that were used as the basis for further statistical analysis. By understanding the demographics data presented within the study sample, it not only answers the first research question, but also allows the reader a better understanding of what may be revealed through this study.

Student sample. This study was conducted in a Midwestern suburban metropolitan public elementary school that implemented the school-wide PBIS framework. The school population ranged from around 500 students to 365 students since the 2011-2012 school year. For the purposes of this study, the students were derived from a sampling frame that included first through fifth grade students participating in PBIS Tier II behavior interventions during the school years of 2011-2012 and 2012-2013 within the school. Students within the first through fifth grade are required to take the STAR Math and Reading assessments. While Kindergarten students in PBIS Tier II behavior interventions, they do not participate in the STAR Math and Reading assessments. As a result, they were not included in the sample. In order to meet the needs of this study, it was decided that a comparison group of students who did not participate in the PBIS Tier II interventions would be used in the analysis. This sample consisted of 71 Tier II students and 71 students who did not participate in Tier II interventions creating a sample size of 142 students.

The 142 students who met the criteria for the study are fairly representative of the entire school population according to demographic statistics or align with research discussed in chapter two. Of the 142 students, 58 were female and 84 were male. While the sample has a much larger male representation, this number aligns with lengthy discussion found in chapter two in regards to the overrepresentation of males participating in behavior interventions. When considering the school year, the 2011-2012 school year had 88 students who met the criteria and 2012-2013 had 54 students. The distribution of students according to grade level over the two-year period had the highest number in first grade at 60 students and the lowest at the third grade level with 16 students. As part of the data collection, it was found that in the 2012-2013 school year, no third grade students participated in the PBIS Tier II interventions. More detailed information on each of these demographic areas is found in tables 4.1, 4.2, and 4.3.

Table 4.1

<i>Student Sample – Gender</i>				
	Tier II – Yes	Tier II - No	Total	Percentage of Sample
Female	26	32	58	40.8
Male	45	39	84	59.2
Total	71	71	142	100.0

Table 4.2

<i>Student Sample – School Year Distribution</i>				
	Tier II – Yes	Tier II - No	Total	Percentage of Sample
2011-2012	44	44	88	62.0
2012-2013	27	27	54	38.0
Total Sample	71	71	142	100.0

Table 4.3

<i>Student Sample – Grade Level</i>						
	Tier II – Yes	Tier II - No	Total	Percentage of Sample	2011 – 2012 School Year	2012 – 2013 School Year
1 st Grade	30	30	60	42.2	32	28
2 nd Grade	9	9	18	12.7	12	6
3 rd Grade	8	8	16	11.3	16	0
4 th Grade	10	10	20	14.1	8	12
5 th Grade	14	14	28	19.7	20	8
Total Sample	71	71	142	100.0	88	54

In order to address Research Question 1, the study also considered participation in ELL and Free and Reduced Lunch programs, whether a student had an IEP, and the race of the students. Analysis of the student demographic information reveals that 65 students qualify and participate in either the Free or Reduced Lunch program. This is fairly consistent with the building percentages of 40%. Of the 142 students, only 12 participated in the ELL program. Additionally, there were 27 students with IEPs meeting the study’s criteria. As a final demographic piece, the students were identified by race. The largest racial groups (n=94) were categorized as Caucasian along with 27 considered African American. The other two groups were identified as Hispanic and Mixed Race.

For this study, it is critical to evaluate the PBIS Tier II intervention participants as compared to those were not participating in Tier II interventions. When evaluating this smaller sample, the statistics reveal a significantly large number of males when compared to the school’s student population. Another demographic characteristic inconsistent with student population was the number of African Americans participating the Tier II

interventions. Furthermore there were 17 students with an IEP showing inconsistency with the student population, as it is much larger in comparison. More consistent with the building population are five students participating in the ELL program and 34 students receiving free or reduced lunch. Table 4.4 provides a more in depth representation of these demographic areas.

Table 4.4

Student Sample Demographic Data

Student Population			Tier II Participants		
	N	Percent of School Population		N	Percent of Category in Population
Male	84	59.2%	Male	45	53.6%
Female	58	40.8%	Female	26	44.8%
Caucasian	94	66.2%	Caucasian	38	40.4%
African American	27	11.0%	African American	23	85.2%
Mixed Race	10	7.0%	Mixed Race	6	60.0%
Hispanic	11	7.7%	Hispanic	4	36.4%
ELL	12	8.6%	ELL	5	41.7%
Free/Reduced Lunch	65	45.8%	Free/Reduced Lunch	34	52.3%
IEP	27	19.0%	IEP	17	63.0%
Total	142		Total	71	

Within the review of literature, it was suggested that gender roles and biases are observed in the school setting. Table 4.5 provides a detailed examination of the female and male participation with the PBIS Tier II behavior interventions in comparison to peers who do not participate. The frequency of males to females aligns with research presented in chapter two. Additionally, the number of students of color for the sample and building population would be considered statistically high.

Table 4.5

Student Sample – Gender and Race Comparison

Gender		Race				Total
		Mixed Race	African American	Hispanic	Caucasian	
Female	Tier II – N	4	2	0	26	32
	Tier II – Y	2	9	0	15	26
	Total	6	11	0	41	58
Male	Tier II – N	0	2	7	30	39
	Tier II – Y	4	14	4	23	45
	Total	4	16	11	53	84
Total	Tier II – N	4	4	7	56	71
	Tier II – Y	6	23	4	38	71
	Total	10	27	11	94	142

Building staff sample. Additionally, the staffing at the school includes 55 employees serving as certified and classified staff. For this study, all employees were asked to complete a staff perception survey in regards to PBIS Tier II interventions. While all staff is included in survey data, this perception survey more likely applied to classroom teachers when

discussing academic achievement. With this in mind, the number of 55 staff members is reduced to 40 staff members. The study had 30 staff members respond to the perception survey; therefore the participation rate was 75%. Within this school site, the staff consists of 55 individuals with 52 females and 3 males. Furthermore, this building has a primarily Caucasian staff with one Hispanic staff member who teaches English as a Second Language.

Research Questions and Hypotheses Results

Research question two and H₁ statistical test and results. Research question two asked: What is the relationship between student participation in PBIS Tier II behavioral interventions and reading academic achievement? Research hypothesis H₁ was stated as: students participating in the PBIS Tier II behavioral interventions will make more significant* reading achievement gains when compared against their peers within their school as measured by Renaissance Learning STAR Reading assessment in grades first through fifth.

*Correlations will be considered significant at the 0.05 level

In order to test this hypothesis, a Pearson product-moment correlation coefficient was calculated. “Correlation simply describes a relationship between two variables. It does not explain why the two variables are related. Specifically, a correlation should not and cannot be interpreted as proof of a cause-and-effect relationship between two variables” (Gravetter & Wallnau, 2013, p. 520). The student STAR Reading assessment scaled score results from the Fall and Spring assessment were entered for each student participant (N=142). After implementing the Pearson correlation, it was discovered that there was no correlation between the two variables of reading gains and participation in PBIS Tier II behavior

interventions, $r = -.073$, $n = 142$, $p = .386$. With the lack of correlation it was not necessary to complete a scatterplot to further depict the findings. Overall, there was very little to no correlation between participation in PBIS Tier II behavior interventions and academic achievement in reading. Table 4.6 presents the correlation results for the reading gains for the students. When calculating r^2 , a very small percentage was determined, $r^2 = -.005 = -0.5\%$. An r^2 value of 0.01 indicates a small effect or a small correlation, an r^2 value of 0.09 indicates a medium correlation, and r^2 of 0.25 or larger indicates a large correlation.

Table 4.6

Reading Gains - Correlations

		PBIS Tier II	Reading Gains
PBIS Tier II	Pearson Correlation	1	-.073*
	Sig. (2-tailed)		.386
	N	142	142
Reading Gains	Pearson Correlation	-.073*	1
	Sig. (2-tailed)	.386	
	N	142	142

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

To further address the possible relationship between the student participation in PBIS Tier II behavior interventions and student academic achievement a two-sample t-test was used. An independent-samples t-test was conducted to compare academic achievement in reading gains in students participating in PBIS Tier II behavior interventions and those not participating in these interventions. There was not a significant difference in the reading gain scores for students participating ($M = 91.45$ and $SD = 93.92$) and students not participating

(M = 105.70 and SD = 101.12); $t(140) = .870$, $p = 0.386$. With a p value of greater than 0.05, the conclusion can be made that there is no statistically significant difference between the two conditions. These results suggest that the PBIS Tier II behavior interventions do not have an effect on the reading gains of first through fifth grade students within this study.

Table 4.7

Results of t-test and Descriptive Statistics for Reading Gains by PBIS Tier II Participation

	PBIS Tier II						95% CI for Mean Difference	t	df
	Participant			Non-Participant					
	M	SD	n	M	SD	n			
Reading Gains	91.45	93.92	71	105.70	101.27	71	-18.13, 46.63	.870*	140

Note. * $p < 0.05$.

Research question three and H₂ statistical test and results. Research question three asked: What is the relationship between student participation in PBIS Tier II behavioral interventions and mathematical academic achievement? Research hypothesis H₂ was stated as: students participating in the PBIS Tier II behavioral interventions will make more significant* mathematical achievement gains when compared against their peers within their school as measured by Renaissance Learning STAR Reading assessment in grades first through fifth.

*Correlations will be considered significant at the .05 level

As completed with H₁, in order to test this hypothesis, a Pearson product-moment correlation coefficient was calculated. The student STAR Math assessment scaled score results from the Fall and Spring assessment were entered for each student participant

(N=142). After implementing the Pearson correlation, it was discovered that there was no correlation between the two variables of math gains and participation in PBIS Tier II behavior interventions, $r = .036$, $n = 142$, $p = .672$. With the lack of correlation it was not necessary to complete a scatterplot to further depict the findings. Overall, there was very little to no correlation between participation in PBIS Tier II behavior interventions and academic achievement in math. Table 4.7 presents the correlation results for the math gains for the students. When calculating r^2 , it very small percentage was determined, $r^2 = .001 = 0.1\%$. An r^2 value of 0.01 indicates a small effect or a small correlation, an r^2 value of 0.09 indicates a medium correlation, and r^2 of 0.25 or larger indicates a large correlation.

Table 4.8

Math Gains - Correlations

		PBIS Tier II	Math Gains
PBIS Tier II	Pearson Correlation	1	.036*
	Sig. (2-tailed)		.672
	N	142	142
Math Gains	Pearson Correlation	.036*	1
	Sig. (2-tailed)	.672	
	N	142	142

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

To further address the possible relationship between the student participation in PBIS Tier II behavior interventions and student academic achievement a two-sample t-test was used. An independent-samples t-test was conducted to compare academic achievement in math gains in students participating in PBIS Tier II behavior interventions and those not

participating in these interventions. There was not a significant difference in the math gain scores for students participating (M = 111.49 and SD = 91.44) and students not participating (M = 105.01 and SD = 90.43); $t(140) = -.424$, $p = 0.673$. With a p value of greater than 0.05, the conclusion can be made that there is no statistically significant difference between the two conditions. These results suggest that the PBIS Tier II behavior interventions do not have an effect on the math gains of first through fifth grade students within this study.

Table 4.9

Results of t-test and Descriptive Statistics for Math Gains by PBIS Tier II Participation

	PBIS Tier II						95% CI for Mean Difference	t	df
	Participant			Non-Participant					
	M	SD	n	M	SD	n			
Math Gains	111.49	91.44	71	105.01	90.43	71	-36.65, 23.70	-.424*	140

Note. * $p < 0.05$.

Research question four statistical tests and results. Research question four asked: What are teachers' perceptions of the implementation of PBIS Tier II interventions on the academic achievement of elementary students? The staff completed staff PBIS Satisfaction survey. The survey results were calculated and reported using means and standard deviations. The mean score for all the items on the PBIS Satisfaction Survey was 3.82 (SD 0.443). The mean the total agree percentages for each item on the PBIS Satisfaction Survey was also calculated (Table 4.10). Statements with mean scores above 4.5 will be interpreted as Strongly Agree. Those with mean scores between 4.5 and 3.5 will be interpreted as Agree, while those between 3.5 and 2.5 will be interpreted as Not Sure (Neutral). Mean scores below

2.5 will be considered as Disagree. Based on the overall mean score of 3.82, most teachers in this study appeared to be satisfied with the building’s PBIS behavior framework.

To calculate the score for a survey, each statement’s rating number was added together for a total score. For example, the Strongly Agree statements equaled 5; the Agree statements equaled 4, etc. The scale for the surveys ranged from 21-105, with 21 being the lowest score and 105 being the highest score. Scores were determined for each participant. The top four scores were 103, 102, 99, and 96, with a mean of 100.0. The bottom four scores were 47, 63, 66, and 66, with a mean of 60.5.

Additionally, a descriptive analysis was completed to calculate the frequency of responses on each survey item. Table 4.10 provides the distribution percentages of the Agree and Strongly Agree responses. This table was created focusing on the Agree totals, due to the fact that the overall mean was 3.82 and on 18 of the 21 items, the mean was found in the Agree range of 4.5 to 3.5 as explained in an earlier paragraph.

Table 4.10

Agree Percentages, Mean Scores and Std. Deviation for PBIS Satisfaction Survey Items

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)	Std. Deviation
Culture	1	Overall, I feel that PBIS has had a positive impact on student behavior.	36.7	53.3	90.0	4.43	.679
Culture	2	Overall, I feel that PBIS has had a positive impact on teacher and staff behavior.	60.0	26.7	86.7	3.97	1.033
Discipline	3	I am satisfied with the PBIS expectations.	40.0	56.7	96.7	4.50	.682

Discipline	4	I am satisfied with the PBIS consequences.	36.7	23.3	60.0	3.57	1.194
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(continued)

Table 4.10. PBIS Satisfaction Survey Items (continued)

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)	Std. Deviation
Discipline	5	I am satisfied with our school's short-term PBIS incentives (rewards, prizes, etc.).	46.7	30.0	76.7	3.97	.928
PBIS	6	I believe the PBIS data tracking system (Check In/Check Out) is easy and efficient	50.0	26.7	76.7	3.93	.907
PBIS	7	I consistently teach and model PBIS expectations/consequences to my students	62.1	34.5	95.6	4.31	.541
Discipline	8	I consistently reward students using the PBIS reward system in place at my school.	44.8	41.4	86.2	4.21	.861
Discipline	9	I feel that PBIS rewards students displaying positive behavior at an appropriate rate	53.3	23.3	76.6	3.93	.828
Discipline	10	I feel that PBIS punishes students displaying negative behavior at an appropriate rate.	16.7	6.7	23.4	2.60	1.192
Discipline	11	I believe that PBIS has helped decrease student discipline problems significantly at my school.	46.7	20.0	66.7	3.83	.791
Culture	12	I believe that PBIS has helped improve students' attitudes toward school.	63.3	20.0	83.3	3.97	.765
Culture	13	I believe PBIS has helped to improve students' respectfulness toward	63.3	13.3	76.6	3.83	.747

others.

(continued)

Table 4.10. PBIS Satisfaction Survey Items (continued)

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)	Std. Deviation
Culture	14	I believe PBIS has helped to improve relationships among students and adults.	69.0	17.2	86.2	4.00	.655
PBIS	15	I am satisfied with the training I received on PBIS expectations, consequences, and the referral process	48.3	24.1	72.4	3.83	1.002
PBIS	16	As a teacher, I have made preparations on my own in order to implement PBIS.	37.9	37.9	75.8	4.07	.923
Tier II - Behavior	17	The Tier II Interventions in my school are consistent with school-wide behavior expectations	51.7	24.1	75.8	3.97	.778
Tier II - Behavior	18	The Tier II Interventions in my school is efficient requiring no more than 10 minutes per instructional staff person, per day.	42.9	21.4	64.3	3.75	.928
Tier II - Behavior	19	Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have consistently shown improvement in behavior.	39.3	10.7	50.0	3.32	1.020
Tier II- Academic	20	Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have shown academic gains in reading.	32.0	4.0	36.0	3.20	.816

Tier II - Academic	21	Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have shown academic gains in math.	28.0	4.0	32.0	3.12	.881
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In the following section, survey results will be compared to each thematic category according to the literature reviewed in chapter two. This survey was developed with the assistance of the PBIS School-wide Evaluation Tool that is used to assess and evaluate the important features of school-wide effective behavior support across each academic school year (Sugai, Lewis-Palmer, Todd, & Horner, 2005).

Culture. Five survey items were related to the literature based on the establishment and characteristics of the successful building culture. The items found in this thematic category align with ideas based around the impact on student and staff behavior as they apply to the PBIS culture. Included in this is the teachers' perception of students' attitude and behavior towards school and the relationships with staff. Of the five questions, the mean scores that ranged from 3.83 to 4.50. These scores indicated that teachers agreed with or were satisfied with these statements. The two statements with the highest mean scores showed that teachers were satisfied with positive impact that PBIS has on student behavior (M = 4.43, Total Agree = 90%, and SD = .679) and believed that PBIS has helped in improving relationships among students and staff (M = 4.00, Total Agree = 86.2% and SD = .655). Furthermore, teachers indicated that they were satisfied with the positive impact that PBIS has on teacher and staff behavior (M = 3.97, Total Agree = 86.7%, and SD = .765).

Table 4.11 provides the five items together for evaluation. All items were classified in the higher end of the Agree response.

Table 4.11

PBIS Satisfaction Survey Results – Culture Questions

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)
Culture	1	Overall, I feel that PBIS has had a positive impact on student behavior.	36.7	53.3	90.0	4.43
Culture	2	Overall, I feel that PBIS has had a positive impact on teacher and staff behavior.	60.0	26.7	86.7	3.97
Culture	12	I believe that PBIS has helped improve students' attitudes toward school	63.3	20.0	83.3	3.97
Culture	13	I believe PBIS has helped to improve students' respectfulness toward others.	63.3	13.3	76.6	3.83
Culture	14	I believe PBIS has helped to improve relationships among students and adults at my school	69.0	17.2	86.2	4.00

Discipline. Another five of the survey items aligned with the literature surrounding the handling of discipline, specifically the expectations and teacher perceptions of social equity. Included in this thematic category were items pertaining to PBIS expectations, consequences, incentives, and punishment practices. This was the category with the lowest mean scores as perceived by the teachers. Two of the items are associated with the

expectations and incentives used to encourage following those expectations. On these items the mean scores are higher providing the idea that teachers agree with the pieces in place. The lower mean scores are associated with the survey items that speak to consequences (M = 3.57, SD = 1.194) and punishment (M = 2.60, SD = 1.192) for negative behaviors and the decrease in student discipline problems (M = 3.83, SD = .791). While the mean score for the decrease in student discipline problems is high, there is a definite drop or dissatisfaction within the staff with PBIS consequences and punishment. Also included in this category is the items that asked about rewarding students for positive behavior. Staff indicated a strong satisfaction with the manner in which PBIS rewards students following expectations (M = 3.93, SD = .828) and that they felt they reward student consistently (M = 4.21, SD = .861). Table 4.12 provides further results.

Table 4.12

PBIS Satisfaction Survey Results – Discipline Questions

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)
Discipline	3	I am satisfied with the PBIS expectations (classroom, hallway, cafeteria, and restroom).	40.0	56.7	96.7	4.50
Discipline	4	I am satisfied with the PBIS consequences.	36.7	23.3	60.0	3.57
Discipline	5	I am satisfied with our school’s short-term PBIS incentives.	46.7	30.0	76.7	3.97
Discipline	8	I consistently reward students using the PBIS reward system in place at my school.	44.8	41.4	86.2	4.21

Discipline	9	I feel that PBIS rewards students displaying positive behavior at an appropriate rate.	53.3	23.3	76.6	3.93
Discipline	10	I feel that PBIS punishes students displaying negative behavior at an appropriate rate.	16.7	6.7	23.4	2.60
Discipline	11	I believe that PBIS has helped decrease student discipline problems significantly at my school.	46.7	20.0	66.7	3.83

Positive behavior interventions and supports. Six survey items aligned with the literature surrounding the PBIS framework as shared in chapter two. The PBIS framework was first implemented in this building five years ago. With five years of experience, this building has completed a number of surveys associated with the PBIS framework. This survey demonstrated a positive response to the framework in place. One item in this survey shows that nearly 75% the staff members were satisfied with their PBIS training, the Strongly Agree responses were not as high as other items.

Table 4.13

PBIS Satisfaction Survey Results – General PBIS Questions

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)
PBIS	6	I believe the PBIS data tracking system (Check In/Check Out) is easy and efficient	50.0	26.7	76.7	3.93
PBIS	7	I consistently teach and model PBIS expectations/consequences to my students	62.1	34.5	95.6	4.31

PBIS	15	I am satisfied with the training I received on PBIS expectations, consequences, and the referral process	48.3	24.1	72.4	3.83
PBIS	16	As a teacher, I have made preparations on my own in order to implement PBIS.	37.9	37.9	75.8	4.07

PBIS tier II: Behavior. The fourth category is comprised of the survey items aligned with the PBIS Tier II literature as well as the framework of Tier II practices. The Check In/Check Out (CICO) process, as described in chapter two, is designed to meet the needs of students who are unable to follow the expectations established at the school wide level, or Tier I. Results indicated an overall satisfaction with the CICO process with a mean score range of 3.32 to 3.97, however the percentage of staff members agree with the items was lower. Specially, the item addressing behavior improvement for students in Tier II with a mean score of 3.32, total percentage of 50.0, and standard deviation of 1.020.

Table 4.14

PBIS Satisfaction Survey Results – Tier II Behavior Questions

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)
Tier II - Behavior	17	The Tier II Interventions in my school are consistent with school-wide behavior expectations	51.7	24.1	75.8	3.97
Tier II - Behavior	18	The Tier II Interventions in my school is efficient requiring no more than 10 minutes per instructional staff person, per day.	42.9	21.4	64.3	3.75

Tier II - Behavior	19	Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have consistently shown improvement in behavior.	39.3	10.7	50.0	3.32
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PBIS tier II: Academics. The final thematic category speaks to not only research question four, but also indicates staff perceptions that align with research questions two and three. The lowest mean scores were found in this last category. Results indicate that the staff perception of students who participate in Tier II behavior interventions showing academic gains in reading (M = 3.20, total agree = 36.0%, SD = .816) and math (M = 3.12, total agree = 32.0%, SD = .881) fell into the Not Sure/Neutral range.

Table 4.14

PBIS Satisfaction Survey Results – Tier II Academic Questions

Category	Item	Question	A %	SA%	Total Agree %	Mean (Index)
Tier II-Academic	20	Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have shown academic gains in reading.	32.0	4.0	36.0	3.20
Tier II - Academic	21	Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have shown academic gains in math.	28.0	4.0	32.0	3.12

Qualitative open-ended questions results. The final three questions on the PBIS Satisfaction Survey were open-ended questions asking staff participants to share their

feelings regarding PBIS implementation in the building. The three questions were: (1) what are some ways that you think PBIS Tier II support (Check In/Check Out) have impacted students' reading and mathematical achievement? (2) What barriers or obstacles do you feel hinder the implementation of PBIS Tier II support for students? (3) What additional thoughts or concerns do you have about PBIS Tier II support for students? In order to share the results, this section of chapter four will concentrate not only each individual question, but also themes that appeared under each question. When evaluating the data from the collection process, it is to be noted that not all individuals answered each question.

Question 22: Tier II impact on student academic achievement. For the first question (Q22), participants were asked to share their thoughts on ways PBIS Tier II behavior interventions impact student reading and math achievement. Only 16 participants out of 30 answered this question. From this collection, the data were placed in three differing thematic categories. The themes that emerged were Creating a Sense of Determination, Development of Relationships, and No Significant Impact.

Creating a sense of determination. Of the 16 participants who answered this question, 10 felt as though the impact of Tier II behavior interventions on student academic achievement came in the form of creating a sense of determination, focus and motivation within the student. These three words were associated with one another as creating a sense of determination within the work. It should also be noted that determination is a word that is used as part of this building's vocabulary associated with PBIS behaviors. One participant mentioned that Tier II interventions "allowed them to concentrate on their academics." Another work, "the focus on determination has helped to improve them to start and complete

work.” A final participant suggested, “Once students were placed on CICO their behavior started to improve. Now that their behavior has improved, they are able to learn in the classroom, and their reading and math achievement has improved as well.”

Development of relationships. While there were not a significant number of responses for the development of relationships, two of the participants shared that students participating in Tier II behavior interventions have improved their respectfulness towards others and built relationships with others. One mentioned, “they have developed relationships with individuals” and the other suggested a new respect for other saying “It allows them to show respect for other learning environment.” Although the number of responses was not very high, this is considered one of the themes for this question.

No significant impact. The remaining individuals suggested that they do not see any specific impact when evaluating their students who have participated in Tier II behavior interventions. The three individuals remarked with very similar responses. “I’m not sure this has impacted achievement, “Honestly, I cannot say that it has specifically. I definitely don’t think that there has been a negative impact, a decline in math and reading achievement” and “I don’t know if I can honestly see a direct correlation between support and academic achievement.”

Question 23: Barriers or obstacles that hinder implementation of tier II. The second question focuses on the implementation of the PBIS Tier II behavior intervention of Check-In/Check-Out. Participants were asked to think about items that may negatively impact the implementation of the framework. With this question, only 13 out of 30 participants supplied responses. Three themes were found when evaluating the answers to this question. The

themes are as follows: Teacher Fidelity, Students Involvement, and Parent Partnership.

Teacher fidelity. The first theme focuses on the teacher as the barrier or obstacle that is hindering the implementation of the PBIS Tier II behavior interventions. Five of the responses suggested that teachers are not consistently implementing the Tier II interventions as needed to meet the needs of the students. One participant said, “Our current barriers for student success are unfortunately related to the classroom teacher. Some teachers implement CICO with fidelity, but unfortunately other teacher do not implement it correctly.” The other responses used words such as “fidelity”, “reluctant”, and “all staff need to receive training.”

Student involvement. A second theme that was found through this coding process was the idea that the student is the barrier or obstacle hindering the implementation of Tier II interventions. The student involvement and impact can be depicted as either positive or negative. From the positive stance, the fear that students who do not participate in the Tier II interventions are being overlooked by the program and are not being as rewarded by teachers. From the negative direction, responses focused on students not being consistent with their behaviors when staff members are not present. The students are not taking their learning and applying them in all situations. Furthermore, students are not held accountable for their negative behavior choices that they continue to make each day. There was mention of a lack of consequences by two individuals when speaking of student involvement.

Parents. The final theme for this question is focused on parent involvement as the piece that is creating a barrier or obstacle for the implementation of Tier II supports. One response suggested that “parent buy-in” is essential if a student is going to be held accountable for their behavior. Another response spoke of parents refusing to have their

child participate in the program due to a “negative stigma” associated with the CICO framework. The fear with this was that “they don’t necessarily understand how much it can benefit their child academically and socially.”

Question 24: Additional thoughts or concerns about tier II supports. The final question asked participants to provide any additional comments or thoughts in regards to their perceptions of the PBIS Tier II behavior intervention framework. As with the other two questions, the number of respondents was small with just 12 out of the 30 participants responding. From the answered, two categories were identified for evaluation. They are Student Impact and Teacher Support. Additionally, there were a few outliers that will be discussed.

Student impact. When evaluating the responses, an idea that came through in a number of the answers was the impact the program had on students. As with question 2, this impact can be both negative and positive. Negatively, the participants spoke of the perception of lack of consequences for students consistently misbehaving. Also mentioned is how students who are following the Tier I or school wide behaviors consistently and not part of Tier II do not receive recognition for good behavior. Positively, there were four responses that mention PBIS in a positive sense describing the framework as making a “huge difference” and “really encourages positive behavior.” Furthermore a few participants said that PBIS “creates a community with common grounds” and that “Tier II gives that extra support that lets the students who need it know that there are many eyes on them that want them to be successful.”

Teacher support. The other theme that was revealed through this question was

centered around the teachers and staff. Of these responses, the focus was on lack of time for teachers to implement the program with fidelity and a lack of support for teachers from PBIS leaders through the implementation process. The participants mentioned “Check in, Check out takes a lot of time for the teachers” and “If a student isn’t performing well on their check in, check out sheets not much is done about it.” Additional statements speak of “a disconnect between interventionists and teachers” and asking how a building can “increase teacher fidelity in the [PBIS] process.”

Outliers. For this question, a few outliers were revealed through the coding process. One dealt with the overall implementation of the PBIS framework concerning the goal of the Tier II Check In/Check Out data sheets and how they are set up to meet the needs of the students. The participant suggested that some aspects of behavior have changed in his/her students, however it is not meeting every need. Another outlier spoke of communication with parents. This participant asked if there was a way to increase communication with parents.

Summary. The three open-ended questions asked of staff as part of the PBIS Satisfaction survey provided in sight for understanding the perceptions of building employees towards the PBIS framework, specifically the Tier II behavior interventions and its implementation. Common themes that were found throughout the three questions focused on the staff’s role in the implementation of the framework, the students’ involvement and interaction with the framework, and how additional stakeholders can impact the implementation of PBIS. When addressing the impact of student participation in PBIS Tier II on student academic achievement, the survey respondents suggested that participation

creates a sense of determination amongst students, assists in the development of relationships, or simply has no direct impact on academics. Common barriers or obstacles that hinder the implementation of the PBIS framework consist of teacher fidelity, parent involvement, and students not learning from the intervention. When asked about additional comments in regards to PBIS, the focus was placed on the impact, both negatively and positively, that PBIS has on students and the lack of support for staff whether in the implementation or training. The qualitative portion of this staff survey supports and aligns with the quantitative survey results as well as the results found in the examination of the student assessment data.

Summary of Results

When evaluating the results presented in this chapter, it is critical to recall that in chapter one, four research questions and two hypotheses presented. The results of the statistical tests conducted for each question and hypothesis revealed interesting information regarding the researcher's proposed connection between a student's participation in PBIS Tier II behavior interventions and that student's academic achievement in reading and math. Through this process, there were two connected items of certain interest that were revealed through the research. First, the overall lack of connection between the participation in PBIS Tier II behavior interventions and academic achievement in either math or reading. Two, the connection of the teacher survey responses in regards to academic achievement and the assessment data collected in this study. Both suggest no statistically significant correlation between the behavior intervention and academic achievement.

To address research questions two and three, two different statistical tests were

conducted, a Pearson correlation and two-sample t-test. In both models, no statistically significant effect was found between participation in PBIS Tier II behavior interventions and student academic achievement in reading or math. These models involved scores for reading and math on the STAR Reading and Math assessments. Given these results it seems logical to reject H₁ and H₂. Through the data collection process, the researcher work to control a number of demographic statistics and with each effort the outcome was the same, no significant correlation.

When evaluating the second item of the connection between the teacher survey and student academic achievement, the survey data collected align with the findings of the achievement scores. In fact in the survey, just over 30% of the staff survey agreed that students who participated in Tier II behavior interventions showed academic gains. This number aligns with the data showing no significant correlation. From a qualitative approach, the small sample size of responses provided difficulty in identifying overarching themes, however, there was consistency among the responses that aligned with other quantitative data.

Conclusion

The data demonstrate that there is no statistically significant correlation between participation in PBIS Tier II behavior interventions and a student's academic achievement in reading or math. Not only does the assessment data suggest this statistic, but the staff perception survey showed similar findings when staff was asked about the academic impact of the behavior interventions. While analyzing this data, the researcher attempted to control a number of descriptive statistics, in order to find a significant correlation, however with each

control similar results were produced. While this sample size met the need of the power analysis, by controlling the sample size only became smaller and the chance for significance followed this behavior.

In order to analyze the academic achievement portion of this study, the researcher used a comparison random sample as described in chapter three. This sample included students who were in the same grade level as the original Tier II sample; however, they did not participate in the PBIS Tier II behavior intervention. By using this comparison group, it was thought that there would be a significant difference between the two groups because of the individualized framework of the PBIS Tier II interventions. However, as the t-test results showed, it does not matter whether a student participates in the Tier II group or not, his or her academic achievement is not impacted by this involvement.

The researcher, however, suggests that explanation of these results be inferred with caution. Student achievement and behavior are impacted by many factors. (Blase & Blase, 2004; Cooper et al., 2002; Dinham, 2004; DuFour & Eaker, 2008; Leithwood & Mascal, 2008; Marzano, 2007). Moreover, statistical methods are only as powerful as the data upon which they are based. The data used in this study were collected from one building in mid-sized school district representing suburban students in a large Midwestern city. While this data represented student populations from this area, they are not necessarily representative of students at the national scale. Data collection and analysis from a broader sample of students and building implementing the PBIS framework would be needed in order to accurately generalize to all students. In this case, study results may reasonably be generalized to suburban students in large mid-western cities. With the wide range of variables that impact

student achievement and behavior, it is also important to interpret study results on the basis of the variables that were included in the study. As supported by the literature, student's ethnicity, socio-economic status, and gender have each been empirically shown to have an effect on student achievement and behavior (Cooper et al., 2002; Marzano, 2007). However, there are other variables which effect student achievement and student behavior. A wider variety of variables would provide a clearer picture of the factors which effect student achievement and behavior. In conclusion, the results of this study can be considered to be statistically valid, but additional research is necessary to further authenticate the findings of this study.

Each day in a number of schools across our country administrators and teachers alike deal with instructional pressures, behavioral issues, and the evolving world of learning. Student achievement is of great interest in our current educational environment. As a result of the increased accountability resulting from legislation such as No Child Left Behind (NCLB) Act of 2001 (No Child Left Behind [NCLB], 2002) for student academic achievement and positive behavior, many school districts and administrators are calling upon school-wide prevention behavioral models to promote a positive school climate to reduce discipline problems. As seen through the literature review, a number of these programs systematically manage student behavior by creating school-wide plans that clearly communicate positive behavioral expectations, provide incentives to students who meet those behavioral expectations, and establish a consistent strategy for student intervention and support when behavioral concerns arise, such as PBIS (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Sugai & Horner, 2006). As a result, school-wide programs are appealing to

local school systems because they are believed to nurture an ideal learning environment for all students and encourage the use of additional supports for children with greater socio-emotional and behavioral needs. The intent of this research is to contribute to the knowledgebase, a set of information that will be useful to school leaders in accomplishing the task meeting the many needs of the students. In chapter five, a detailed discussion of this study's implications will be delivered.

CHAPTER 5

IMPLICATIONS, LIMITATIONS AND FUTURE RESERACH

The purpose of this study was to determine the possible correlation between the student participation in PBIS Tier II behavior interventions and student academic achievement in reading and math. By evaluating student achievement scores on the Renaissance Learning STAR Reading and Math assessments and conducting a staff perception survey, the investigator identified no statistically significant correlation between participation in Tier II behavior interventions and academic achievement. The study employed a randomized peer comparison sample in order to identify the possible correlation. However, there was no significant difference in either student sample, so the participation did not impact academic achievement.

Discussion and Implications

The previous four chapters have provided an introduction to the concepts examined in this study, an empirical and theoretical foundation on which the concepts are grounded, specific methodology used in this study, and the statistical results of the data gathered in this investigation. Each of these components contributes a unique role in developing the overall theory being investigated. While having these components in mind, it is critical to consider why the results of this study are useful.

In chapter four, it was revealed that no statistically significant connection between student participation in PBIS Tier II behavior interventions and student academic achievement in reading and math could be determined. If most of the results in this study show no statistically significant connection, then why are the results of importance? There

are several reasons why the results of this study are important to educators and the current body of education research. First, there is a lack of research connected to PBIS Tier II behavior interventions and academic achievement. Secondly, quantifying student achievement is of great interest in our current educational context. Third, in the interest of providing students with the best of educational opportunities, continual improvement in educational practices is required. For these reasons, the results of this study create important contributions to the field of education.

With a current lack of research in regards to the relationship between PBIS Tier II behavior interventions and academic achievement, this study provides some understanding of the possible relationship, which in this study shows no significant relationship. While the sample size could be considered small, this work prepares a foundation for what researchers could analyze in the future as discussed later in this chapter. One such finding that supports the quantitative data established through the assessment results was the staff qualitative responses. It was interesting to find that a high percentage of staff member (64% to 68%) disagreed when asked if they believed their students participating in Tier II behavior interventions showed academic gains in reading or math. In fact the mean score for the item connected to reading was $M=3.20$ and math was $M=3.12$. Significant gains are not being made and the staff members overwhelmingly acknowledged this as well.

When considering the importance of the findings of this study, it is critical to note that anything with the potential of positive effects on achievement scores is of high value to education administrators. Since implementation of the No Child Left Behind (NCLB) Act of 2001 (NCLB, 2002), educators have operated in the high-pressure school environment of

accountability. Furthermore with funding tied to Adequate Yearly Progress (AYP), education administrators want to know if programs and interventions affect academic test scores. Adequate Yearly Progress can be defined as the measure by which schools, districts, and states are held accountable for student performance under Title I of the No Child Left Behind Act of 2001 (NCLB, 2002), the current version of the Elementary and Secondary Education Act.

Although this study did not yield a statistically significant relationship between participation in PBIS Tier II behavior interventions and academic achievement in reading and math, there were findings that provide educational administrators with results to assist in decision making for school cultural framework implementation. Districts are spending a large amount of money on the initiatives to support student behavior. In the case of PBIS, a district looking to initiate Tier I implementation of the PBIS framework in its schools could pay a total unit cost of \$5,000 to \$10,000 per school over a two-year period (Blonigen, et al., 2008). This is large sum of taxpayer dollars being placed in a behavior framework that does not show significant correlation with academic achievement, as demonstrated in this study.

When evaluating the results, it was discovered that while the PBIS recommendation process for students needing additional behavior support does not include academic screening for the students, the students who participated in the Tier II interventions had a lower STAR assessment scores. According to mean scores for the STAR Reading assessment, those that participated in Tier II behavior interventions scored lower in the Fall assessment with a scaled score mean of 239.67 as compared to non-participants at 304.22. With the STAR Math assessment, the difference is not quite as significant when thinking

about the difference in scaled score points, however the Tier II participants are still lower (M = 537.13) as compared to their peers (M = 563.42). See Table 5.1 as it provides further explanation of this finding. This information is critical for educational administrators when considering implementing the PBIS it could be suggested that an academic screening process might be necessary to assist in identify problem behavior related to low test scores. Additionally, administrators may also find a learning opportunity for staff expectations and building culture.

Table 5.1

T-Test Group Statistics – STAR Reading and Math Assessment Fall Scale Scores

	Tier II	N	Mean	Std. Deviation	Std. Error Mean
Reading Fall SS	No	71	304.23	258.99	30.74
	Yes	71	239.68	161.96	19.22
Math Fall SS	No	71	458.41	191.08	22.68
	Yes	71	425.63	173.08	20.54

To align with the inclusion of the academic evaluation for students participating in the Tier II interventions, it is also recommended to create a consistent referral process for identifying students for Tier II. While a process may be in place, staff members expressed concern over lack of support in the identifying process as well as a lack of support in assisting students not finding success in the Tier II intervention. By having a clear, check-list component for identifying students, there may be the opportunity for higher teacher implementation fidelity as well as the opportunity to improve the culture and attitude around the Tier II interventions. Furthermore, it could also assist in the staff’s examination of the

overrepresentation of males, students of color, and lower-income students and their participation in the Tier II interventions.

One area of research that could impact the findings of future studies not yet mentioned was the kindergarten students who are involved in the PBIS Tier II behavior interventions. It was decided for purposes of this study to not use the student sample because of the lack of assessment data, specifically kindergarten students do not administer the STAR Reading and Math assessments. However, through data collection the students were included in the Tier II intervention data. With this being said, it was discovered through a top-line evaluation of the data that 17 kindergarten students participated in the Tier II interventions during the school years of 2011-2012 and 2012-2013. Of the 17 students, 14 of the students were male and 3 were female. As mentioned in chapter two, the overrepresentation of males in discipline situations is supported through research (Meier, Stewart, & England, 1989). Also supported through research is the idea that boys and girls are socialized differently. Educational researcher Mickelson (1989) suggested that there are definite gender differences within the school setting. In fact, the researcher claimed “girls do well in school because they are socialized to be good” (p. 57) and for boys it “requires a degree of resistance to authority figures like teachers and certain devaluation of schoolwork because it is ‘feminine’” (p. 58). Are we failing to see the similarities between boys and girls because they do not fit into our pre-constructed notions of gender (Carl, 2012)? With this in mind, the Kindergarten students, both boys and girls, are being socialized to act in a certain way and through this process; girls are finding more success behaviorally as compared to boys. This is alarming and should be considered a point of discussion with staff to better

understand the gender differences and how to most effectively work with each gender to promote behavior and academic success.

Furthermore, nine of the Kindergarten students were Caucasian, four were Hispanic, three were of mixed race, and one was African American. The behavior issues are coming in the form of male students with an overrepresentation of students of color when considering building demographic data. As the investigator of this study, these statistics are troubling and should be considered as educators continue to evaluate academic and behavior programs that are implemented in schools. How can we as educators meet the needs of each student, no matter his or her gender, race/ethnicity, SES, or ability? Author and researcher Janice Hale speaks much about the differences in students from diverse racial backgrounds as well as social classes. In fact, in one article, she wrote how “it is hypocritical to talk about ‘equal opportunity’ when the [educational] system ensures never-ending advantages for upper-income white student” (Hale, 2004, p. 34). It is critical for staff to identify these differences and work to meet the needs of all students by not overlooking gender, race, SES or ability.

The kindergarten data along with the findings of the major components of this study also suggest the importance of establishing and maintaining strong relationships between students and staff. Positive relationships with students cannot only impact the classroom culture, but it can also enhance the building’s culture. While this is not a new technique within our profession, it is one that should be revisited. Thompson (1998) mentions, “The most powerful weapon available to teachers who want to foster a favorable learning climate is a positive relationship with our students” (p. 6). As suggested by Canter and Canter (1997), nearly everyone can recollect classrooms in which they did not try very hard because they

did not like their teachers or feel respected. This demonstrates how critical it is to have strong, positive relationships with students. Kohn (1996) said, “Children are more likely to be respectful when important adults in their lives respect them. They are more likely to care about others if they know they are cared about” (p. 111). Marzano (2003) stated that students will resist rules and procedures along with the resulting disciplinary actions, if the foundation of a good relationship is absent. He further emphasized that relationships are perhaps more important at the elementary and junior high levels than at the high school level. As a final component of the power of relationships, Zehm and Kottler (1993) suggested that students will never trust teachers or open themselves up to hear what the teachers have to say unless they sense that the teachers value and respect them. Strong, positive relationships begin on the first day and greatly impact the learning environment of the classroom and building.

While establishing and maintaining positive relationships is a critical component of classroom success, another element for success is a teacher’s ability to implement classroom discipline effectively. Over the course of the last forty years, many models of effective classroom discipline have been implemented in the classroom setting. The ultimate goal within all of these models is to develop self-discipline within the students and move away from external or teacher imposed control. By establishing this practice, the teachers are then able to teach and students can learn. Such models of discipline include the Fred Jones model (Jones, 1987), the Canter model (Canter & Canter, 1997), the Glasser model (Glasser, 1990), the Ginott model (Ginott, 1972), the Kounin model (Kounin, 1977), the work of Harry Wong (Wong & Wong, 2004), and practices of Doug Lemov (Lemov, 2010). Each of these models of discipline and classroom management provides educators with the tools to create a

classroom setting that is focused on learning. While it could be argued that one model is better than the other, all have components that could assist teachers with their management skills. Providing teachers with professional development focused on learning and implementing such practices could positively enrich a building's culture. In response, the school's PBIS framework is also enriched.

To go along with the implications of professional development for classroom management and discipline practice as well as building strong relationships with students, it should be considered that there needs to be professional development for staff members around issues of equity and social justice in terms of behaviorism. Research reflects that there is overrepresentation of males and students of color and students from high poverty communities in special education as well as discipline program. In most schools and districts, an examination of which students are most likely to be suspended, expelled, or removed from the classroom for punishment, reveals that students of color, especially African Americans and Latinos, males, and low achievers are generally immensely overrepresented (Meier, Stewart, & England, 1989).

Limitations

The results of this study showed that there is no statistically significant correlation between participation in PBIS Tier II behavior interventions and academic achievement in reading or math. Limitations are discussed briefly in this section and provide possibilities for future research, which is discussed in further depth in later sections.

For the purposes of this study design, correlational tests were used to determine significance. This design has implications within itself. As with any correlational study, the

research can suggest a relationship between two variables, however, they cannot prove one variable causes a change in another variable. In other words, correlation should not be considered as causation. In other words, the results of the Pearson correlation test and the two-sample t-test indicate that behavior interventions do not cause greater gains in academic achievement. In this case, there is the presence of a number of other variables that may serve as a cause for the relationship that the researcher does not have control of the purpose of the study (McLeod, 2008). Furthermore, correlational studies do not allow the researcher to make statements beyond the data that are collected. It is difficult to make inferences in regards to the data (McLeod, 2008).

A second limitation to this study relates to the sample size. The generalizability of the study results is limited to schools with student populations that are similar in makeup to the school represented in the study. The school examined in this study represents a student population that is similar to many suburban school districts in large Midwestern cities. However, at only one participating school, caution should be taken when generalizing results to all urban/suburban student populations. These results represent students in Midwestern settings. Related social factors may cause urban/suburban students from large east coast, west coast, or southern cities to differ in significant ways from those students represented in the study.

Sample size alone could also present other significant variables in generalizing results. The sample population was drawn from only one school during two school years implementing school wide PBIS. In order to generalize the results to other Midwestern student populations, two factors would need to be changed. First, an overall increase in the

sample size would need to be conducted. The original G-Power calculation called for a minimum of 134 participants. Some statistics texts call for a minimum of 32 participants, with an additional 18 participants per predictor variable (Gall et al., 2007). For this particular study, this would result in a minimum of 50 participants. Second, taking the sampling frame from other schools as well as including additional year of evaluation. Since PBIS Tier II students are the focus, the data points could be limited, however, with additional schools and years as comparison, the generalizability would be greatly enhanced. The two steps of increasing the sample size and including additional schools and years would greatly enhance to generalizability of study results.

Another limitation in this study is the subjectivity in the implementation of the PBIS Tier II CICO process. Although the school site has implemented this program for five years, staff members and teachers are providing individualized feedback to each participating student, which obviously varies from student to student. As the literature suggests, teachers may have a perception or bias towards a student based around gender, race or socio-economic status that can influence the decision making process (McKown & Weinstein, 2008; Rousso & Wehmeyer, 2001; Kozol, 1991). An association based off these biases is the term defined by Valencia (1997) as deficit thinking. This theory suggests that an individual's, or teacher's in this case, thinking is constructed on blaming the victim, or student, for the student's deficit based on assertion and not documentation rather than structural problems (Valencia, 1997).

Through the school's established PBIS Tier II student identification process, staff members and teachers recommend students to participate in PBIS Tier II interventions,

which has the possibility of being a subjective process dependent on students and staff members involved. Students are recommended for CICO by their classroom teacher or other building support staff, such as counselor or Special Education teacher, based on the teachers' discretion as to whether the student is consistently following or not following school wide expectations. With the lack of a formal checklist or process to identify or recommend students for the intervention, the deficit thinking theory and other such biases could be at work. By creating a checklist or formula for CICO, the validity and reliability of the intervention only increases. The Missouri School-wide Positive Behavior Support team has created such a student identification process for the recommendation of students needing Tier II supports. Within this process, a school should use data decision rules to assist in student identification. Such rules as suggested by the Missouri School-wide Positive Behavior Support team could consist of a certain number (2 or more) of Office Discipline Referrals, a number of minor classroom (7 to 8), student attendance, academic concerns, and students with internalizing behavior, such as sleeps a lot, appears unmotivated, does not participate, withdrawn or self-injury (MU Center for School-wide Positive Behavior Support, 2011).

Through the staff survey, it was discovered teacher consistency or fidelity in implementation of PBIS expectations could be a limitation to this design. Through the survey, participants spoke of how teacher fidelity with the implementation of the program affects the operation and success rate of the intervention. If one teacher is consistent with expectations, provides continuous feedback throughout the day, and promotes positive behavior, there results and student response may be different than a teacher who is not engaged and does not participate within the framework of PBIS. Being inconsistent might

have an impact not only on the behavior interventions, but also on the academic results. An important part of implementing PBIS correctly and reliably is obtaining teacher buy-in (Horner, Freeman, Nelson, & Sugai, 2007). Teachers might be more consistent with PBIS if they understood and believed in its value. Some teachers may view PBIS as just another program their administrators are requiring them to use. Foucault's (1998) idea of bio-power was that people need continuous regulations in order to improve their lives, and teachers may see this behavior system as another way in which administrators are regulating their lives. They are required to follow certain procedures, teach specific rules, etc., and some teachers find these kinds of regulations constraining. Nevertheless, for PBIS to be successful, teachers must believe in its worth and implement it with fidelity.

Recommendations for Future Research

There is a lack of research in the exploration of the effects of PBIS on academic achievement. This need can even be found in the literature (Putnam et al, 2006). One suggestion would be to conduct a study with experimental controls for outside factors. When considering the PBIS framework, behavior is the center of the variable and provides a number of outside factors that influence students. By controlling for outside factors, perhaps more significance would result when searching for the relationship between PBIS and academic achievement.

Another suggestion for further research should focus on isolating variables of the PBIS framework to determine which aspect of the framework has the greatest impact on academic achievement. In order to do this, a researcher might use a regression model to analyze factors such as positive teacher feedback and prompting, increased instructional

time, or teacher fidelity. The regression model is a statistical technique for finding the best-fitting straight line for a set of data, which in turn allows a researcher the ability to predict and describe the relationship between two variables (Gravetter & Wallnau, 2013). This straight line establishes a precise, one-to-one relationship between two variables. By analyzing these factors and other PBIS characteristics, there might be stronger supports for academics and a prediction for how the schools could improve the overall implementation of the PBIS framework. Through this practice, it is also suggested to measure the behavior outcomes of students to analyze the specific behaviors, time of day, location, etc. This material could provide administrators with specific areas of concentration when implementing the PBIS framework.

Future research should focus on the differences found within different schools. This study evaluated one school that implements PBIS and compared students within this school. Researchers should examine additional schools in a variety of settings, such as urban, suburban, and rural schools, to determine if certain settings or schools benefit more academically from PBIS. By making this evaluation, there might be the possibility of determining what characteristics make model PBIS schools different from schools that do not perform as well.

Further research might also focus on the comparison between the PBIS framework and other school wide behavior frameworks, such as the BIST framework. The BIST (Behavior Intervention Support Team) model, developed by Ozanam which is part of the Cornerstones of Care, a partnership of agencies providing therapeutic treatment services for children and families, inspires schools to change students' lives and behavioral skills through

a balance of grace and accountability, powerful language to solve problems, and consistent expectations (Boulden, 2009). This framework or model is similar to PBIS in that it provides consistent expectations for students. It would be interesting to examine whether a school implementing just the BIST model, or a similar framework, produces differing academic achievement results as compared to a school just implementing the PBIS framework. It should be noted that the school in this study uses both frameworks, which could have implications in the overall effectiveness of either model.

Another opportunity for research could evaluate a district or school implementing a behavior intervention framework that has recently experienced a shift in student demographics. As described in this study, the school district has seen great change in student population demographic statistics over the last ten years. A study evaluating such a change may provide insight into whether there is a possibility of higher percentages of students from the new population being referred for behavioral interventions.

As a final recommendation for future research, an organizational study of a building's fidelity to the implementation of the school-wide PBIS model both when the school was doing Tier I and while implementing Tier II interventions should be completed. "Fidelity details how faithfully the program was implemented based on its original design and the resources that were directed to it" (Algozzine, et al., 2010, p. 12). The Missouri School-wide Positive Behavior Supports team has created a system for recognizing schools on their progress of implementing and maintaining the school-wide PBIS framework. Schools can earn the recognition of Bronze, Silver, or Gold depending on the level of implementation and fidelity to the PBIS tiered framework. Each level builds on the one prior and may take a

number of years to complete (MU Center for School-wide Positive Behavior Support, 2011). For schools receiving the highest recognition at the Gold level standard, it has been determined by the state team that the school effectively implements at all Tiers of the PBIS framework.

As a result, research reveals that Missouri schools implementing school-wide PBIS demonstrate academic patterns, according to the Missouri Assessment Program (MAP), similar to the state as a whole and non-school-wide PBIS schools for all students and students with IEPs (MU Center for School-wide Positive Behavior Support, 2013). Furthermore, the Gold level schools demonstrated a “modest improvement” in both math and communication arts, according to the MAP, for all students and students with IEPs (MU Center for School-wide Positive Behavior Support, 2013, p. 27). An organizational study could provide a better understanding of how teacher and school-wide fidelity to the PBIS framework and its tiers impact student academic achievement.

Conclusion

At the inception of this study, it was suggested that the study results were anticipated as having the possibility of informing the use of the PBIS Tier II behavior interventions on improving academic achievement in math and reading. This study aimed to identify the relationship between the Tier II interventions and student achievement. This statement was based on the idea that administrators are forced to make decisions on programs that will best serve students (Gapp, Zalud, & Pietrzak, 2009). Determining if there was a significant connection between the Tier II behavior intervention and academic achievement provides the potential for helping building administrators gain an understanding of the impact such a

behavior framework has on student learning. Results of this study revealed no significant correlational finding. A finding, that while in need of further research, does indeed have the possibility to inform acting educational administrators when making those decisions that impact students.

While there are a number of studies that discuss the establishment and implementation of the school-wide PBIS framework (Horner, et al., 2004; Irvin, et al., 2006; Irvin et al., 2004; Safran, 2006; Colvin & Fernandez, 2000; McIntosh et al., 2009), it was discovered that few studies examine the relationship between the school-wide behavior plan, particularly Tier II interventions, and student academic achievement. Again, this leads to the impact of this study.

Throughout this study, it has been glaringly obvious that this study is only the beginning of the work that needs to be completed when considering behavior interventions such as PBIS. Educators are living and working in an accountability age and as part of the school construct, behavior management goes hand in hand with academic achievement. The literature shows that behavior management impacts academic achievement as a whole, or Tier I students (Gutierrez, Yeakly, & Ortega, 2000). However, when implementing more specific support for struggling students the research does not follow this belief or there is a lack of findings. As shown through the staff survey, the overall staff satisfaction is very high when considering the culture created in the building and there is a belief that behaviors are greatly affected by the framework. What is missing is the academic achievement variable. Not only did the data demonstrate this, but also the staff echoed it with their comments. Future research is needed to confirm the results of this study and to determine the possible

condition in which Tier II interventions and academic achievement are connected. When considering the findings within this study and the culture of a building, it is critical to remember that establishing and maintaining a desired culture is an ongoing process of highs and lows. Educational administrators must make conscious efforts to create a powerful, effective school wide culture that supports academic and personal achievement.

Appendix A

PBIS Satisfaction Survey Instrument

Please read each question and circle the response that closely matches your feelings. All responses and information will be kept confidential. Thank you for participating in this survey.

1. Overall, I feel that PBIS has had a positive impact on student behavior.
Strongly disagree Disagree Not sure Agree Strongly agree
2. Overall, I feel that PBIS has had a positive impact on teacher and staff behavior.
Strongly disagree Disagree Not sure Agree Strongly agree
3. I am satisfied with the PBIS expectations (classroom, hallway, cafeteria, and restroom).
Strongly disagree Disagree Not sure Agree Strongly agree
4. I am satisfied with the PBIS consequences (verbal/written warnings, loss of privileges, parental contact, office referrals, etc.).
Strongly disagree Disagree Not sure Agree Strongly agree
5. I am satisfied with our school's short-term PBIS incentives (rewards, prizes, etc.).
Strongly disagree Disagree Not sure Agree Strongly agree
6. I believe the PBIS data tracking system (Check In/Check Out) is easy and efficient.
Strongly disagree Disagree Not sure Agree Strongly agree
7. I consistently teach and model PBIS expectations/consequences to my students.
Strongly disagree Disagree Not sure Agree Strongly agree
8. I consistently reward students using the PBIS reward system in place at my school.
Strongly disagree Disagree Not sure Agree Strongly agree

9. I feel that PBIS rewards students displaying positive behavior at an appropriate rate.

Strongly disagree Disagree Not sure Agree Strongly agree

10. I feel that PBIS punishes students displaying negative behavior at an appropriate rate.

Strongly disagree Disagree Not sure Agree Strongly agree

11. I believe that PBIS has helped decrease student discipline problems significantly at my school.

Strongly disagree Disagree Not sure Agree Strongly agree

12. I believe that PBIS has helped improve students' attitudes toward school.

Strongly disagree Disagree Not sure Agree Strongly agree

13. I believe PBIS has helped to improve students' respectfulness toward others.

Strongly disagree Disagree Not sure Agree Strongly agree

14. I believe PBIS has helped to improve relationships among students and adults at my school.

Strongly disagree Disagree Not sure Agree Strongly agree

15. I am satisfied with the training I received on PBIS expectations, consequences, and the referral process.

Strongly disagree Disagree Not sure Agree Strongly agree

16. As a teacher, I have made preparations on my own in order to implement PBIS.

Strongly disagree Disagree Not sure Agree Strongly agree

17. The Tier II Interventions in my school are consistent with school-wide behavior expectations.

Strongly disagree Disagree Not sure Agree Strongly agree

18. The Tier II Interventions in my school is efficient requiring no more than 10 minutes per instructional staff person, per day.

Strongly disagree Disagree Not sure Agree Strongly agree

19. Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have consistently shown improvement in behavior.

Strongly disagree Disagree Not sure Agree Strongly agree

20. Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have shown academic gains in reading.

Strongly disagree Disagree Not sure Agree Strongly agree

21. Overall, students in my classroom participating in Tier II interventions (Check In/Check Out) have shown academic gains in math.

Strongly disagree Disagree Not sure Agree Strongly agree

22. What are some ways that you think PBIS Tier II support (Check In/Check Out) have impacted students' reading and mathematical achievement?

23. What barriers or obstacles do you feel hinder the implementation of PBIS Tier II support for students?

24. What additional thoughts or concerns do you have about PBIS Tier II support for students?

Appendix B
SSIRB Approval

From: umkcirb@umkc.edu
Sent Date: Monday, February 24, 2014 09:20:58 AM
To: friendji@umkc.edu, renog@parkhill.k12.mo.us
Cc:
Bcc:
Subject: IRB Protocol Approved: 14-029, Jennifer Friend

Message:

The SSIRB has approved the protocol with the following details.

Protocol ID: 14-029
Principal Investigator: Jennifer Friend

Protocol Title: The Effects of Positive Behavior Intervention Tier II Supports on Academic Achievement among Elementary Students

Review Type: Administrative Review
Department: School of Education

Approval Date: 02/24/2014

The formal approval letter and stamped consent forms, if applicable, can be found by accessing the protocol in the eProtocol system. Please contact the Research Compliance Office (email: umkcirb@umkc.edu; phone: (816)235-5927) if you have questions or require further information.

Appendix C

Agreement of Confidentiality

Research, Evaluation, and Assessment
Agreement of Confidentiality

I, Geoff Reno, understand that working with the Park Hill School District's department of Research, Evaluation, and Assessment is voluntary and at-will for both the Park Hill School District and me. I also understand that this project and data access holds me to confidentiality for information in accordance with the Federal Education Right to Privacy Act (FERPA) and as such, information including but not limited to student level information, ethnicity, test scores, and free and reduced lunch status would be considered confidential information. Any information given about students will only be reported or shared at an aggregate level with permission from the Park Hill School District.



Signature

Dec. 19, 2013

Date

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VITA

Geoffrey Dean Reno was born August 27, 1979 in Alliance, Nebraska. He was raised and schooled in the Alliance Public School system where he graduated from Alliance High School in 1998. Geoff attended the University of Nebraska in Lincoln where he received a Bachelor of Journalism with an emphasis in Advertising and minors of English, Psychology, and Marketing. Following graduation in December of 2002, Geoff accepted an Account Coordinator position at the Kansas City based advertising agency, Barkley Evergreen & Partners. Within a four-year period, Geoff was promoted to Assistant Account Manager working with a variety of national brands.

After working four years in advertising, Geoff returned to the college setting to receive a post-Baccalaureate degree in Elementary Education from the University of Missouri – Kansas City. In May of 2008, he graduated with high honors with his second Bachelor's degree. During that same year, Geoff accepted a teaching position at Renner Elementary in the Park Hill School District in Kansas City, Missouri. At Renner, Geoff has taught 3rd grade and served on the school's leadership council for six years. During this time, he completed a Master's degree in Educational Administration, receiving his diploma from the University of Missouri – Kansas City and initial principal certification from the State of Missouri in 2010. Thereafter, he began working towards his Educational Doctorate through the University of Missouri – Kansas City in January of 2012.

Upon completion of his degree requirements, Geoff plans to continue his tenure as an educator within the Park Hill School District. As an aspiring building administration, he will actively pursue a leadership position within the Kansas City metropolitan area.