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AN EXAMINATION OF PBIS IMPLEMENTATION FIDELITY AND STUDENT
OUTCOMES IN AN URBAN SCHOOL DISTRICT

By

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B.A., University of Kentucky, 1996
M.Ed., Cambridge College, 2004
Ed.S., Albany State University, 2006

A Dissertation
Submitted to the Faculty of the
College of Education and Human Development of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

Doctor of Education
in Educational Leadership and Organizational Development

Department of Educational Leadership and Organizational Development
University of Louisville
Louisville, KY

August 2018

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A Dissertation Approved on

July 30, 2018

by the following Dissertation Committee:

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Dr. Terry Scott

DEDICATION

This is dedicated to all the students who I have had the honor of teaching or mentoring throughout my educational career. I am a better person because of my students. Either children will reveal your true character or they will encourage you to be a better person.

ACKNOWLEDGMENTS

I am grateful for many people who have supported me during this doctoral process. I appreciate my dream team committee who are experts in their respective fields. I appreciate Dr. Ingle's attention to detail and for pushing me to be a better researcher. I am glad that he agreed to be my committee chair because his feedback has been instrumental in my completion of this dissertation. I am very grateful for Dr. Immekus because he did not know me and shared PBIS research he had collected over the years. Dr. Immekus met with me to share research and information even though I had not been in any of his classes. With just a common interest in PBIS, he gave me tons of information and made suggestions on possible research questions even before I was ready to write this dissertation. Dr. Scott is a nationally renowned expert in the field of PBIS and I am very appreciative to have been able to learn from him. I appreciate the meetings we had to discuss the path my research was going. Due to his work in the district of study, his insight was valuable for the steps I needed to take. Finally, I want to acknowledge Dr. Munoz for spending his valuable time to re-explain statistical procedures to me even after I had been through his stats classes. He also encouraged me to keep pressing to completion. I acknowledge that I would not have been able to complete this dissertation without this committee of scholars.

I cannot state how grateful I am to my mother, Rose Walton for encouraging and supporting me throughout my educational career. As a first-generation college student, she supported me in countless ways. Her belief in me is the main reason why I am able to complete this project. I am so appreciative to my husband, Ron Scherer for walking this doctoral journey with me. Without his support and encouragement, I would not have been able to finish this project. Finally, I want to acknowledge the late Dr. Charlton Forbes for inspiring me to continue against all odds. His legacy reminds me that it does not matter where we begin, but where we finish.

Finally, I have to acknowledge my cohort members. We are a unique group of individuals who challenged each other's ideas and encouraged each other when times were difficult. Dr. Aaron Wisman gets a special acknowledgment for sharing his time to discuss statistical procedures. I will not forget his love of numbers or his sense of humor during stressful moments. I have learned so much from my cohort members and I am thankful to have shared this doctoral journey with a group of people who care about students as much as I do.

ABSTRACT

AN EXAMINATION OF PBIS IMPLEMENTATION FIDELITY AND STUDENT OUTCOMES IN AN URBAN SCHOOL DISTRICT

C. Angelique Scherer

July 30, 2018

The purpose of this study was to examine Positive Behavior Interventions and Supports (PBIS) implementation fidelity and student outcomes for secondary schools in a large, urban school district. The state department of education placed the district under corrective action due to disproportionate suspension practices. In response to the corrective action, district administration required 24 schools to participate in PBIS training. This study is an analysis of PBIS implementation fidelity data, discipline referrals, suspensions, and standardized test scores to determine if there were significant differences after PBIS implementation. I employed the repeated measures analysis of variance (ANOVA) to examine outcomes over a four-year period. Results indicated increased PBIS implementation fidelity over time. Discipline outcomes showed improvement in one year included in the study, but improved outcomes did not sustain over time. Additionally, academic outcomes did not show any significant increases. I conclude by discussing the results in terms of helping urban schools improve outcomes for students.

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CHAPTER 1

INTRODUCTION

Maintaining safe school environments is a high priority for teachers and school administrators (Skiba & Sprague, 2008). In 2013-14, approximately 58% of public schools recorded one or more incidents of a physical fight without a weapon and 13% of schools recorded one or more serious violent incidents (Musu-Gillette, Zhang, Wang, Zhang, & Oudekerk, 2017). When students display inappropriate school behaviors, school administrators may use a variety of consequences including detention, in-school suspension, out-of-school suspension, and expulsion. Typically reserved for the most serious negative school behaviors and breaches of school conduct, out-of-school suspensions exclude students from school attendance and school functions for 1 to 10 days at a time (Gregory, Skiba, & Noguera, 2010). Expulsion is the most severe response to negative behaviors with school staff removing students from school for an extended period. According to the Civil Rights Data Collection, Black students represent approximately 15% of the student population in schools nationwide, but they make up 35% of students suspended once, 44% of those suspended more than once, and 36% of students expelled (US Departments of Education & Justice, 2014). In comparison, white students represent a similar range of between 31-40% of students suspended or expelled

but are 51% of the student population (US Departments of Education & Justice, 2014).

Disproportionate suspension is a nationwide trend plaguing public schools throughout the country. Students who are suspended miss instructional time and are often further behind their peers when they return to school, creating a cycle of lower academic achievement and disengagement from school (Gregory et al., 2010). Scholars have studied the indicators for suspension (Raffaele Mendez, 2003; Skiba, Michael, Nardo, & Peterson, 2002) and the outcomes of suspensions (Arcia, 2006; Smith & Harper, 2015); however, there is limited research for the prevention of suspensions, especially in urban schools with complex needs.

Each year, the National Center for Education Statistics (NCES), Institute of Education Sciences (IES), and the Bureau of Justice Statistics (BJS) produce a report representing the most recent data available on school crime and safety. The 2016 report indicated 15% of students in urban areas reported a gang presence, compared to 10% of suburban students and 4% of rural students (Musu-Gillette et al., 2017). In 2013-14, 65% of public schools recorded one or more incidents of violence. Additionally, approximately 15% of fourth-graders and 7% of eighth graders experienced bullying at least once a month (Musu-Gillette et al., 2017). Although administrators may use various consequences for inappropriate behaviors, suspension is one of the most commonly used methods of discipline (Raffele Mendez, & Knoff, 2003; Skiba & Peterson, 1999). During the 2011-12 school year, 3.4 million public schools in the United States students received in-school suspensions and 3.2 million received out-of-school suspensions (Musu-Gillette et al., 2017). School suspensions, whether in-school or out-of-school remove students from the learning environment preventing them from progressing with their peers.

Out-of-school suspensions have become widespread in use despite questions of the effectiveness at reducing problem behavior. Rausch and Skiba (2004) found that even when controlling for the poverty rate, the percentage of African- American students, total school size, and location, out-of-school suspensions were negatively associated with schools' achievement. When excluded from learning opportunities, students cannot achieve at the same rates as their peers who remain in school due to differences in hours of instruction and exposure to the curriculum and instruction. Losen and Gillespie (2012) report over three million children lost instructional time due to suspension in 2011-12. Scott and Barrett (2004) studied the relationship between school instructional time and Positive Behavior Interventions and Supports (PBIS) in an urban, elementary school. They reported suspended students missed 462 hours of instructional time for one school year in one elementary school prior to PBIS implementation (Scott & Barrett, 2004). Each day of suspension equates to approximately six hours of instructional time lost and the hours compound for each day of suspension. Research continues to indicate that increased use of suspensions leads to negative outcomes for students during and after high school, if they do not drop out first (Arcia, 2006; Balfanz, Byrnes & Fox, 2014; Bradshaw, Mitchell, O'Brennan, & Leaf, 2010; Rausch & Skiba, 2004; Skiba et al., 2011; Skiba, 2013). Given the increased focus on academic outcomes on state assessments, schools cannot afford to continue to suspend students at increasing rates.

The issue of disproportionate suspension prompted the U. S. Departments of Education (ED) and Justice (DOJ) to issue guidance to school districts to make changes about how students are suspended. The agencies developed a Dear Colleague letter on nondiscriminatory administration of school discipline to provide guidance to public

elementary and secondary schools in meeting obligations under federal law to administer student discipline without discriminating based on race, color, or national origin (ED & DOJ, 2014). The letter included 2014 national data from the Civil Rights Data Collection (CRDC), which reported disproportionate suspension rates for Black students as indicated previously. In addition to high suspension rates, over 50% of students who were involved in school-related arrests or referred to law enforcement are Hispanic or African-American (ED & DOJ, 2014). The guidance letter identified resources to school districts on how to prevent and respond to student misbehavior. The guidance identified PBIS as a method to improve behavioral outcomes for all students, thereby affecting outcomes for African-American students.

PBIS began as an individual strategy to respond to student misbehavior for students with disabilities. In the 1997 reauthorization of the Individuals with Disability Education Act (IDEA), Congress added PBIS as an approach to prevent exclusions from school and improve educational results for students with disabilities. PBIS remains in the 2004 amendments of IDEA as a strategy for students who struggle with behavior. Since then, PBIS emerged as a school-wide initiative to improve outcomes for all students.

School-wide Positive Behavior Support (SWPBS) is a framework of intervention practices and organizational systems for establishing the social culture, learning and teaching environment, and individual behavior supports needed to achieve academic and social success for all students (Office of Special Education Programs, 2015).

Dissemination in schools, school districts and state education agencies have occurred largely due to the Technical Assistance (TA) Center on PBIS, which has been funded by

the U. S. Department of Education's Office of Special Education Programs (OSEP) since 1998.

PBIS is not a curriculum or program, but an approach to prevent problem behaviors that seeks to minimize the use of punitive responses to inappropriate behaviors. School leaders use the multi-tiered approach to change school culture while providing behavioral supports that will assist in producing safe, orderly, and effective learning organizations (Sugai & Horner, 2009). The PBIS process is a problem solving and action planning process through which school leadership teams (a) review school data, (b) develop measurable and realistic short and long-term objectives, (c) select practices that have demonstrated efficacy in achieving those objectives, and (d) establish systems to enable adaptation and implementation of those practices (Sugai et al., 2000). The PBIS framework focuses on a continuum of supports in which students receive assistance based on the intensity of their needs. The framework is comprised of three tiers, which identifies students' needs and level of support received. Data analysis is a critical feature of the PBIS framework because school teams use discipline data to determine problem areas and the level of support needed for students. The first tier is a universal tier of support for all students in a school. The school staff establish expectations and teach the common expectations to all students. Additionally, school staff reinforce positive behaviors and avoid the over-reliance on negative responses to problem behaviors. Identifying and teaching clear expectations for behavior reduces ambiguity for both students and staff as well as working toward the shared goal of a positive school culture (McIntosh, Girvan, Horner, Smolkowski, & Sugai, 2014). The second tier is for students who do not respond to the first tier of support and require targeted interventions for their

problem behaviors. Targeted interventions may be an adult mentor to check in on students or small group social skills lessons. Finally, the third tier is for students with significant problem behaviors requiring intensive support due to the frequency or intensity of their behaviors. Students at this level require individual support to meet their needs. A school staff person completes the functional behavioral assessment (FBA) at this tier to identify the target behavior and the function of the behavior. The multi-tiered approach allows for a customization of support based on student needs.

School staff must implement PBIS with fidelity to state that it is effective and to make positive correlations with improved outcomes. There is a variety of tools available to measure PBIS implementation. Examples include, but are not limited to the Benchmarks of Quality (Kincaid, Childs, & George, 2010), Tiered Fidelity Inventory (Algozzine et al., 2014) and the School-wide Evaluation Tool (Sugai, Lewis-Palmer, Todd & Horner, 2005). These tools are typically self-assessments completed by school staff to determine if the components of PBIS are in place i.e. team dedicated to implementing PBIS, data analysis, behavioral expectations taught, and staff buy-in. Schools may assess their PBIS implementation multiple times in a school year depending on the assessment tool and their stage of PBIS implementation. Using the self-assessment tools provides schools with the information to celebrate successes and make improvements in PBIS implementation where needed.

Secondary schools may struggle to implement PBIS with fidelity due to factors such as school size, administrative support or staff buy-in. Middle and high schools tend to have large enrollments with students coming from multiple schools. Students have multiple teachers with varying expectations. Secondary teachers assume the students are

able to self-manage and be responsible for their own learning. Teachers may not understand the need to teach the adolescents and teenagers expected behaviors. All of these factors are barriers to PBIS implementation fidelity.

PBIS is a promising approach to meet the challenge of school suspensions because of its focus on preventive measures for problem behavior. In a statewide analysis of Maryland's PBIS initiative, Barrett, Bradshaw, and Lewis-Palmer (2008) found a reduction in office disciplinary referrals (ODRs) and out-of-school suspensions in schools that had implemented PBIS with fidelity. Schools implementing PBIS with fidelity report benefits such as decreases in problem behavior, increase in academic time and improved perceptions of school safety (Bradshaw, Mitchell & Leaf, 2010; Swain-Bradway, Swoszowski, Boden, & Sprague, 2013). PBIS also has been associated with decreases in office discipline referrals, suspension, and expulsions (Horner, Sugai, & Anderson, 2010). Although PBIS has supporting evidence in elementary schools, there is a lack of data on the outcomes for schools on the secondary level (Sugai & Horner, 2008). For the purpose of this study, I will examine PBIS in secondary schools, which have historically used out-of-school suspension at high rates. Many of the schools included in the study also have low academic achievement as measured by state standardized assessments.

Disproportionate suspension is a nationwide issue that has plagued the public school system for over 40 years. School administrators suspend Black students at rates disproportionate to their enrollment in the public school system. Schools have used reactive, punitive, and exclusionary approaches to address student misbehavior in hopes of changing student behavior with little or no effect. To reduce high rates of suspension,

schools can take two key steps: (a) implement evidence-based preventive approaches to problem behavior and (b) develop instructional alternatives to suspension when problem behavior occurs (Massar, McIntosh, & Eliason, 2015). PBIS has evolved into a viable process for assisting schools to identify, adopt, implement, and evaluate evidence-based interventions for the school, classroom, and individual students (Sugai & Horner, 2002). There is evidence of PBIS implementation reducing suspension and increasing student outcomes on the elementary level. There is limited data for PBIS implementation for secondary schools in complex urban environments (Bohanon et al., 2006; Flannery, Fenning, McGrath Kato, & McIntosh, K., 2014; Sugai & Horner, 2008). The goal of this study is to add to the body of research regarding PBIS implementation in urban, secondary schools.

PBIS is a strategy gaining momentum nationwide to prevent negative behaviors and improve discipline outcomes, but more research is needed to determine if implementation improves outcomes in urban settings especially in middle and high schools. The purpose of this study was to determine if there is a relationship between PBIS implementation and improved outcomes in urban, secondary schools. Disproportionate suspension is a nationwide phenomenon prompting negative outcomes for students, especially in urban settings. This study has implications for school districts on how to improve discipline outcomes for students, thereby increasing academic achievement.

Context of the Study

The district serving as the context of my study is a large, urban school district in the Southeastern region of the United States. The district is the largest in the state with

over 100,000 students enrolled. In April 2013, the state Department of Education (DOE) notified the superintendent of this district that there was a significant discrepancy in suspension rates for both students with disabilities and a smaller subgroup of African-American students with disabilities. The DOE analyzed data from 2010-11, 2011-12 and trend data from the previous five years. In 2010-11, the district was four times above the state rate for suspension of students with disabilities. The following year, 2011-12 the district was three times the state rate for suspensions. The DOE cited the district in January 2011 and again in February 2012 for continued disproportionate suspension rates. Because of the numerous citations, the DOE required that the district develop a corrective action plan (CAP) to address the significantly disproportionate suspension rates.

The district has 47 secondary schools comprised of 23 middle schools and 24 high schools. As part of the development of the CAP, the district identified 24 middle and high schools as high suspension schools. The district mandated these schools to participate in PBIS training as a strategy to reduce the high suspension rates. It is important to note that at the time of the PBIS mandate, 16 of the 24 schools had been determined by the state DOE as persistently low-achieving schools, also known as Priority Schools due to their failure to meet state benchmarks for academic outcomes more than three consecutive years. For the purpose of this study, I examined all 24 schools who were required to participate in the initial PBIS training outlined in the CAP. Through this study, I aim to provide practical implications for PBIS implementation for secondary schools in urban settings.

Purpose of the Study

The purpose of this quantitative study was to examine the relationship between PBIS implementation fidelity and student outcomes in secondary schools in a single large, urban school district. The first purpose was to examine if schools under corrective action were implementing PBIS with fidelity over time. The second purpose was to examine if there was a statistically significant difference in student outcome variables such as office discipline referrals, out-of-school suspension, and student achievement after PBIS implementation. I drew upon data from 24 schools and analyzed PBIS implementation fidelity and student outcomes over a four-year period. I sought to answer the following research questions:

1. Is there a statistically significant increase in PBIS Tier I fidelity over time in schools who are under corrective action?
2. Is there a statistically significant decrease in office discipline referrals (ODR) after PBIS implementation?
3. Is there a statistically significant decrease in out-of-school suspensions (OSS) after PBIS implementation?
4. Is there a statistically significant increase in reading achievement after PBIS implementation?
5. Is there a statistically significant increase in mathematics achievement after PBIS implementation?

If schools are not implementing PBIS with fidelity, then schools cannot expect to have significant changes in discipline outcomes. In addition, I examined if schools with PBIS implementation fidelity had statistically significant differences in the number of

office discipline referrals and out-of-school suspensions. Finally, the research questions investigated if schools who implemented PBIS with fidelity had a statistically significant increase in student achievement as measured by state assessment scores in reading and math.

Significance of the Study

The study is significant, as it adds to the body of research around PBIS implementation for secondary schools in urban settings. Given disproportionate discipline practices, it is valuable to examine PBIS in high schools with complex needs to determine if there is a relationship between PBIS implementation and improved student outcomes. The study is significant because it provides information about PBIS implementation fidelity and the sustainability of PBIS in urban, secondary schools. I provide a longitudinal analysis of PBIS implementation and the relationship with student outcomes in urban secondary schools. Urban school settings are unique to suburban and rural schools. Urban schools tend to have higher populations of students living in poverty, larger populations of culturally diverse students, and higher levels of students at risk for educational failure (Markey, Markey, Quant, Santelli, & Turnbull, 2002). Additionally, these schools tend to have higher numbers of teachers with a few years' experience due to high turnover rates in teachers with more teaching experience. Due to the complex needs of schools in urban settings, I considered PBIS as a strategy to reduce inappropriate student behavior thereby reducing disproportionate suspensions.

The district of study is in a large, urban setting in the Southeastern United States with over 100,000 students enrolled. The schools included in the study have historically had low academic outcomes and high rates of suspension events. This study has practical

significance for the district and other districts in urban settings. While not generalizable beyond the single urban school district and the time period reflected in the data, this study may hold practical significance for similar large, urban school districts who have adopted and implemented PBIS or are considering doing so. This study will be beneficial to teachers, administrators and school officials to address and reduce student misbehavior through a proactive and preventive approach. The study will provide information to school and district leaders about the relationship between PBIS implementation and student outcomes to provide informed decision-making regarding the use of PBIS in urban schools. There is documentation of successful PBIS implementation of in elementary and middle schools; however, there is insufficient evidence for PBIS implementation in high schools especially in large, urban districts (Sugai, Flannery, & Bohanon-Edmonson, 2004). Finally, this study adds to the body of literature regarding implementation fidelity of PBIS and the behavioral outcomes in urban secondary schools.

Research Design

I used the repeated measures analysis of variance (ANOVA) procedure to determine if there was a statistically significant difference in PBIS implementation over time. In addition, I used repeated measures ANOVA to determine if there was a statistically significant reduction in ODR and OSS over the four-year period. Finally, I used the repeated measures ANOVA to determine if there was a statistically significant increase in reading and math achievement over the four-year period. Stevens (2007) indicates the repeated measures ANOVA procedure is appropriate when we are concerned with performance trends over time. The aim of this study was to determine if implementation fidelity increased, discipline events decreased and achievement results

increased over time. The repeated measures ANOVA provides the analysis needed to determine if there is a statistically significant difference after the implementation of PBIS.

The years of PBIS implementation served as the independent variables (categorical). There are three academic years for PBIS implementation included in the study, which include three years after training. A national trainer initially trained school staff in 2013-14 and provided ongoing training with coaching in subsequent years. I analyzed data from 2014-17 for each school year to determine if there were statistically significant differences after the initial training was complete. I also analyzed descriptive demographic data to provide context for the schools included in the sample.

The first dependent variable was PBIS implementation (continuous) as measured by the Benchmarks of Quality (BOQ) and the Tiered Fidelity of Inventory (TFI), self-assessment tools used by school teams to measure their level of implementation. There are various assessments that can be used to measure PBIS fidelity. The school district staff used the BOQ to assess PBIS implementation for 2014-15. The district staff used the TFI for the remaining years of the study period from to measure PBIS implementation. The questions on the assessments help school staff members determine if components of PBIS are in place in the school. District staff mandated the 24 schools to participate in the PBIS training and complete the TFI to measure PBIS implementation. Both the BOQ and the TFI provide scores indicating if the school staff was implementing with fidelity or not implementing. The general rule is a score of 70% for each tier is the acceptable level of implementation associated with improved student outcomes (Algozzine et al., 2014). District staff used a score of 70% as the benchmark for fidelity. I used the PBIS

implementation fidelity scores as the dependent variable to determine if PBIS implementation increased over time.

The other dependent variables focus on student outcomes. I examined ODR and OSS to determine if there were statistically significant differences after PBIS implementation. I used the number of ODR and OSS to determine if the number decreased over time due to PBIS implementation fidelity. Finally, I explored academic outcomes for reading and mathematics to determine if there was a statistically significant difference after PBIS implementation fidelity. I used state assessment data to determine if reading and mathematics scores increased due to PBIS implementation fidelity. I analyzed baseline data from 2013-14 and data from 2014-17 to determine if there were statistically significant differences after the initial training was complete.

Definitions of Key Terms

The following terms and definitions are used throughout the study to ensure consistency of understanding:

1. *Benchmarks of Quality (BOQ)*. Self-assessment tool used by school teams to measure the fidelity of implementation of the primary or universal level of PBIS application in individual schools.
2. *Code of Acceptable Behavior and Discipline*. District approved document outlining the rules for the school district and possible consequences if students violate the rules.
3. *Dropout*. A student who has not graduated from high school or completed a state or district approved educational program.

4. *Expulsion*. The removal of a student from school for disciplinary reasons that results in withdrawal of the student from the school of attendance. The local board of education defines criteria for expulsion.
5. *Implementation Fidelity*. Structures and procedures are in place to assess, ensure and coordinate appropriate adoption and accurate sustained implementation of evidence-based practices and systems (OSEP, 2015).
6. *Individuals with Disabilities Education Act (IDEA)*. A federal law that requires schools to serve the educational needs of eligible students with disabilities.
7. *In-School Suspension*. A removal from the student's regular educational setting during instructional time and placement in a program or another setting within the school or district.
8. *Office Discipline Referral (ODR)*. An event in which a student engages in a behavior that violates a school rule and the event resulted in a consequence delivered by administrative staff who produced a permanent (written) product defining the whole event.
9. *Office of Special Education Programs (OSEP)*. A unit within the department of education that administers the *Individuals with Disabilities Education Act (IDEA)* to support grants for personnel development, technical assistance and dissemination, technology, and parent training and information centers.
10. *Out-of-School Suspension (OSS)*. Disciplinary consequence administered for a student's inappropriate behavior, requiring the student to be removed completely from the school environment for a set period of time (Costenbader & Markson, 1998).

- 11. Positive Behavior Interventions and Supports (PBIS).* Framework of intervention practices and organizational systems for establishing the social culture, learning and teaching environment, and individual behavior supports needed to achieve academic and social success for all students (OSEP, 2015).
- 12. Priority School.* School among the lowest five percent of Title I schools in the state based on the achievement of the all students group in terms of proficiency on the statewide assessments and has demonstrated a lack of progress on those assessments over a number of years.
- 13. School-wide Positive Behavior Interventions and Supports (SWPBIS).* Positive Behavioral Interventions and Supports applied at the school-wide level.
- 14. Tiered Fidelity Inventory (TFI).* An instrument used to measure the extent to which school personnel is applying the core features of PBIS. The instrument has three sections to measure all three tiers of PBIS separately or in combination to determine which core features are in place.
- 15. Urban School District.* School district located in large central cities with high rates of poverty, ethnic diversity, and English Language Learners.

Summary

Through this study, I investigated PBIS implementation fidelity and student outcomes as measured by office discipline referrals, suspensions, and academic achievement. In Chapter 1, I provided the context of the study, purpose, significance, methodology, and definition of key terms. In Chapter 2, I review the literature that explores the research on disproportionate suspension, alternatives to suspension, PBIS outcomes and PBIS implementation. I describe the methodology for the study in Chapter

3. I report the results from the analysis in Chapter 4. In Chapter 5, I discuss possible reasons for the results, implications for practitioners and recommendations for future research.

CHAPTER 2

REVIEW OF LITERATURE

School staff have taken steps to prevent violent behaviors by installing metal detectors and cameras, hiring resource officers, and suspending or expelling students for physically aggressive or illegal behaviors, but there has been limited focus on implementing school-wide practices to address students who display disruptive or inappropriate behavior (Sugai & Horner, 2002). School administrators commonly use out-of-school suspensions (OSS) to discipline students and maintain safety. Suspension rates in U.S. public schools have doubled since the 1970s, and in 2010, school staff suspended almost three million students (Losen & Gillespie 2012). Administrators commonly use suspensions to address inappropriate school behavior for all students; however, administrators disproportionately suspend Black students. In their national report on K-12 suspensions for the 2009-10 school year, Losen and Gillespie (2012) found that 17% of Black children were suspended at least once. This percentage is much higher than White students (5%), Latino students (7%) and Asian students (2%) (Losen & Gillespie, 2012). Suspensions are associated with lower academic outcomes, higher dropout rates, failure to graduate on time, and future exclusion from school (Arcia, 2006; Christle, Jolivette, & Nelson, 2005; Costenbader & Markson, 1998; Lee, Cornell,

Gregory, & Fan, 2011; Raffaele-Mendez, 2003; Skiba & Peterson, 1999). School and district leaders find it challenging to use a different approach to discipline, which does not negatively affect student achievement. Students who miss instructional school days due to suspensions and expulsions miss the opportunity to gain knowledge with their peers. School districts with high suspension rates will not be able to meet student achievement demands from states due to lost instructional days for students.

Recently, the Departments of Education (ED) and Justice (DJJ) launched a collaborative project to support the use of school discipline practices which foster safe, supportive, and productive learning environments while keeping students in school. The departments identified PBIS as a strategy to reduce suspensions and expulsions in a directory of resources for school districts. PBIS is a widely recognized, research-based approach to school discipline, which aims to prevent problem behavior (Eber, Sugai, Smith & Scott, 2002). According to the U.S. Department of Education's Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports (n.d.), over 23,000 schools nationwide implement PBIS. The Office of Special Education Programs (OSEP) established the national technical assistance center to improve the capacity of states, districts and schools to establish, scale-up and sustain the PBIS framework. OSEP emphasizes the approach for students with disabilities, but research has demonstrated the framework has benefit for all students. States such as Maryland and Illinois have adopted PBIS for state-level implementation to improve outcomes for all students. The efforts of districts and states represent a realization of the need to improve discipline outcomes for students and the need to build capacity at the school level.

PBIS is a multi-tiered framework that guides the organization of behavior support in a school to improve both behavior and academic outcomes for students. Districts nationwide have adopted PBIS to reduce overall disciplinary events. Schools implementing PBIS with fidelity have reported decreased office referrals and suspensions along with increase academic outcomes (Bradshaw, Mitchell, & Leaf, 2010; Horner, Sugai, & Anderson, 2010; Muscott, Mann, & LeBrun, 2008). Although there is a rise in the number of schools and districts adopting PBIS, racial disparities in disciplinary exclusion continue to increase. Since evidence suggests PBIS reduces ODR, ISS, and OSS, it is a potential solution for disproportionate suspension. To support this claim, I analyzed PBIS implementation in a district with disproportionate suspension practices because the effectiveness of PBIS is difficult to judge without examining fidelity of implementation.

The purpose of this chapter is to review the literature on exclusionary discipline, and the effect on student performance. I then provide an overview of national trends with implications for district and state levels. Next, I explain PBIS and review the research on PBIS implementation and its relationship to outcomes. I conclude Chapter 2 with a summary of the trends in findings and deficits in the research associated with PBIS implementation.

Disproportionate Suspension

Disproportionate suspension is a nationwide phenomenon leading to negative outcomes for students of color across the country. Due to exclusionary discipline practices, Black students are not getting access to educational opportunities causing them to be academically behind their White peers. Several studies have shown that school staff

suspend and exclude Black students from school at higher rates than their White peers. This section will describe the research regarding disproportionate suspension providing the context for a change in how school staff respond to students' inappropriate behaviors.

In 1975, the Children's Defense Fund conducted one of the first studies to use a national data set on school discipline. According to the report, more than two-thirds of suspended students were Black (Children's Defense Fund, 1975). The report indicated that 20 school districts suspended one-third to one-half of their Black students in one school year (Children's Defense Fund, 1975). The report also indicated that most of the suspensions were for non-violent offense, for behaviors like truancy, tardiness, and smoking. Fast-forward 40 years later, the data remain the same for Black students. In their study of suspension rates of 13 states in the south, Smith and Harper (2015) found that Blacks were nearly half of all students suspended and expelled from public schools in the southern United States. Black boys had the highest numbers among both genders and all racial/ethnic groups. Additionally, in 84 of the districts studied, Blacks were 100% of the students suspended from public schools (Smith & Harper, 2015). These two reports are 40 years apart, but the data describes the same situation for Black students. The narrative has not changed in the 40 years between these studies that Black students are suspended disproportionately more than White students.

Skiba, Michael, Nardo, and Peterson (2002) analyzed the disciplinary records for 11,000 students on the middle school level for the 1994-95 school year in an urban school district to determine if race, socioeconomic status, and gender were factors for discipline disparities. The researchers wanted to determine the reasons for the disparities in disproportionate suspension for Black students. Skiba et al. (2002) revealed a strong

pattern in which Black students were suspended disproportionately due primarily to higher rates of office referrals. When combining socioeconomic status with race there was a limited effect on the differences in office referrals and suspensions. Skiba et al. (2002) addressed questions related to race and SES as factors for school exclusion providing evidence to reconsider the practice for administrators in urban areas. Race was a stronger predictor of discipline-related outcomes than SES. The results of this study provide evidence of high suspensions based on race and no other factors, such as socioeconomic status. This is important for my study because the school district I am studying has a history of disproportionate suspension.

Drawing on data from 142 schools in an ethnically diverse, urban district in Florida, Raffaele Mendez and Knoff (2003) examined suspension rates across school levels, gender, and race. They analyzed the percentage of students of each race, gender, and school level to determine how many students had experienced at least one suspension. Additionally, they analyzed the types of incidents resulting in the highest suspensions and the disaggregation of these suspensions by race and gender. They found both Black males and females are at much greater risk of being suspended than their peers in other racial groups (Raffaele Mendez & Knoff, 2003). Raffaele Mendez and Knoff (2003) found Black females were more than three times as likely to experience a suspension as White females. This study was limited to only one school district and is not generalizable to all school districts across the nation. However, the district is racially diverse and is representative of the various racial groups across the country. The results of this study contribute to the body of literature surrounding suspension providing further evidence that race has a stronger relationship to suspension than gender. While the study

is informative on predictors for suspension, we need more research to better understand why Black students are overrepresented in suspension rates.

Using a nationally representative sample of 436 elementary and middle schools, Skiba et al., (2011) found African-American students have twice the odds of White students for receiving office discipline referrals (ODR) at the elementary level and almost four times at the middle school level. Disparities in rates of referrals were widespread for both African-American and Latinos at the middle school level. The team used data from the School-wide Information System (SWIS), used in over 4,000 schools at the time of the study. Analysis revealed that school staff referred Black students at disproportionate rates, and there were disparities in the referral types. Additionally, administrators issued more serious consequences to Black students than their White peers (Skiba et al., 2011). The results of the study identified disproportionate negative outcomes at the classroom and administrative level for Black students. This study is consistent with previous studies regarding disproportionate suspension, providing further evidence using a national sample of schools that Black students are overrepresented in suspensions. The authors of the study suggest that school policies focus on prevention of misbehavior and investing in developing appropriate social behaviors instead of exclusionary consequences (Skiba et al., 2011). Excluding students from school puts them behind their peers academically and socially.

These studies reveal that suspension rates are higher among Black students than their White peers (Raffaele Mendez & Knoff, 2003; Skiba et al., 2011; Skiba et al., 2002). Data from district, state, and national levels indicate students of color, encompassing all non-white groups, are overrepresented in office referrals and school

expulsion, with suspension rates of two to three times that of other students (Skiba et al., 2002). Although conducted in a variety of settings using a variety of methodologies, the results from these studies remain consistent. School administrators disproportionately suspend non-White students, particularly Black students at higher rates. The Civil Rights Data Collection (2014) reports that Black students represent 16% of the student population nationwide, but 32-42% of students suspended or expelled at least once. The differences in suspensions are not explainable by socioeconomic status as described above or through higher rates of misbehaviors by Black students. The education community needs more research to describe the variables, which contribute to the overrepresentation of Black students in schools suspensions.

Suspension and Academic Achievement

The opportunity to be engaged in academic instruction is a predictor of academic success. If excluded from school, students do not have the ability to access instruction to be academically successful. The previous section explained the disproportionate suspension phenomenon occurring throughout the country. This section describes how suspensions influence academic achievement and the possible contribution to the achievement gap.

A suspended student may miss anywhere from one class period to ten or more school days depending on the infraction prompting the suspension. In their analysis of national suspension data, Losen, Hodson, Keith, Morrison, and Belway (2015) estimated that public school children lost nearly 18 million days of instruction during the 2011-12 school year due to of exclusionary discipline policies. Suspended students tend to make lower academic progress due to loss of instructional time. Investigating disciplinary

outcomes in an urban school district in Florida, Raffaele Mendez, Knoff and Ferron (2002), reported negative correlations between the school suspension rate and achievement scores in reading, mathematics, and writing at both the elementary and secondary school level. They conducted correlational analyses to determine the relationships between school-related predictor variables and the duplicated OSS rate. They found that schools with higher standardized achievement scores had a lower OSS rate in elementary schools (Raffaele Mendez et al., 2002). On the secondary level, there was a strong negative relationship with OSS rate and standardized achievement scores. This study was limited to one school district and may not be generalizable. Additionally, standardized achievement assessments are just one indicator of academic success and should be used in conjunction with other measurements to indicate student success. While standardized achievement assessments are one indicator of student success, district and state leaders often used these assessments to measure school academic success. This study provides evidence regarding the relationship of OSS and standardized achievement measures. This is important for my study because many of the schools included have high suspension rates and low rates of proficiency on standardized achievement assessments.

One suspension from school excludes a student for one day, however, that suspension can compound over time prompting gaps in learning. Raffaele Mendez (2003) conducted a longitudinal study on a cohort of students in a district in Florida from Kindergarten to graduation. She conducted correlational comparison and multiple regression analysis using discipline data on the same students from grades 2-12. Raffaele Mendez (2003) found that out-of-school suspensions predicted future suspensions and contributed to poor academic performance. There was a negative correlation in both

reading and math achievement as measured by the standardized test scores. As stated previously, standardized test scores are one measure of academic success. However, this is a measure commonly used to indicate school success. The study is limited to one school district, although there were 150 schools it is not generalizable to all school districts in the county. Nevertheless, this study provides insight into suspensions, academic outcomes and the long-term effects. By studying the same students over time, she was able to analyze the characteristics of the same students to determine if the suspensions had a lasting effect.

Additionally, Arcia (2006) conducted a longitudinal examination on the impact of suspension by analyzing the achievement status of suspended students throughout three years in comparison to a matched group of students without suspensions in a large, urban school district in the Southeast. She conducted longitudinal retrospective analysis of the pre-and post-suspension reading achievement of suspended students compared to a comparison group matched on grade, gender, race, free/reduced lunch status and limited English proficiency. There were over 40,000 students in both samples of suspended students and students who had not been suspended. Findings indicated suspended students had substantially lower pre-suspension achievement than did students in the comparison group, gained considerably less academically throughout the three years, and had higher dropout rates (Arcia, 2006). There was a statistically significant difference in reading achievement between the two groups. This study is consistent with the study above on the long-term outcomes related to school exclusion. Suspended students tend to have lower academic achievement, which compounds over their school career as they miss instructional time due to suspensions.

More recently, Perry and Morris (2014) found that high rates of suspension at the school level tend to decrease student achievement, even for students who were not personally suspended. Using a hierarchical and longitudinal dataset consisting of student and school records, they examined the effect of suspension on reading and math achievement. School district staff used Measures of Academic Progress (MAP), a computerized adaptive assessment designed to measure students' academic growth. This assessment is different from standardized achievement measures due to the adapting nature of questions student encounter based on their responses to previous questions. The sample included students in grades 6 through 10 enrolled in an urban school district in the southeastern United States over a three-year period from 2008 to 2011. A noticeable difference in this study is this sample only included unsuspended students. Additionally, this sample was less diverse than similar studies, analyzing suspension with the majority of the students being either White (61%) or Black (23%). Perry and Morris (2014) found that in schools with high out-of-school suspensions, student achievement declined among unsuspended students suggesting that schools with frequent use of suspensions disrupt school communities and the turnover of suspended students creates unstable, socially fragmented environments. This study offers a different perspective because of the focus on students who did not have any suspensions from school.

Drawing from the same data set, Morris and Perry (2016) conducted another study to determine if racial background and suspension were associated with achievement in reading and math. They modeled multivariate effects with multi-level mixed logistic and linear regression to analyze race, gender, socioeconomic status, suspensions and academic achievement as measured by MAP assessments. Their results indicated

suspension had a relationship with student academic achievement. Students who had suspensions scored substantially lower on end-of-year academic progress tests than those who had not been suspended (Morris & Perry, 2016). Additionally, the analysis revealed that school suspensions account for approximately one-fifth of black-white differences in school performance, demonstrating that exclusionary discipline may be a key driver of the racial achievement (Morris & Perry, 2016). Their finding suggests exclusionary discipline hinders academic growth and contributes to racial disparities in achievement. The authors state the “effects of suspension are long lasting, setting into motion a trajectory of poor performance that continues in subsequent years, even if a student is not suspended again” (Morris & Perry, 2016, p. 82). This study is consistent with previous studies regarding disproportionate suspensions and the negative impact on academic achievement. This study includes one state and is not generalizable to all states, but yields implications for school staff to consider for using suspensions. These findings are relevant to my study as I examined suspensions and the relationship with academic achievement.

Finally, Noltemeyer, Ward, and McLoughlin conducted a meta-analysis to examine the degree to which different types of school suspensions (in-school versus out-of-school) are associated with both academic achievement and school dropout. This was a comprehensive study to examine characteristics of empirical research on suspension and outcomes. In all, 54 cases from 34 studies met the inclusion criteria for the meta-analysis. Data sources included peer-reviewed and non-peer-reviewed studies from 1986–2012 obtained through bibliographic databases. The results revealed a statistically significant inverse relationship between each suspension and academic achievement

(Noltemeyer et al., 2015). Additionally, the results indicated a significant positive relationship between suspensions and dropout (Noltemeyer et al., 2015), which will be discussed in the following section. This meta-analysis is important to my study because it provides a body of evidence regarding the negative impact of suspensions on students' academic achievement. While this study is relevant and important to guide in the use of suspension, there are limitations. Other factors can contribute to student success or the lack thereof. One cannot definitively conclude that suspension is the only factor causing low academic achievement.

Suspension from school is suspension from learning opportunities. The studies discussed in this section indicate suspended students have poor academic outcomes as compared to unsuspended students. Exclusionary discipline practices do not change student behavior. If schools desire to improve their students' academic outcomes, they will need to reconsider their disciplinary practices. The following section will describe the relationship between school suspensions and drop-out rates.

Suspension and Drop-out Rates

The previous section details how suspension leads to lower academic outcomes for students who are suspended. These low academic outcomes can put a student on the path to dropping out of school. Students excluded from learning opportunities fall behind academically, which can lead to course failure. As these suspensions and course failures add up, students may become disengaged from school and decide to leave school prior to graduating. This section will describe the research on the relationship between school suspension and dropout rates.

Suspension rates are associated with poor academic achievement (Raffaele Mendez et al., 2002), which may lead to higher dropout rates at the high school level. High dropout rates are further evidence that schools need to implement preventive strategies to school discipline instead of suspension. Raffaele Mendez conducted a longitudinal study on a cohort of students using data from when they entered kindergarten until they graduated in Florida. In addition to poor academic outcomes for suspended students, results indicated that the number of out-of-school suspensions a student received as a sixth-grade student predicted a lower probability of on-time graduation (Raffaele Mendez, 2003). She conducted correlation comparisons between out-of-school suspensions in grade 6 and the following variables: academic achievement, out-of-school suspensions in grades 7-12, and on-time graduation. The study revealed that students with more than one sixth-grade suspension were less likely to graduate with their same-age peers. The reduced time in class for instruction had a negative impact on students' ability to graduate on time.

Christle, Jolivet, and Nelson (2005) examined school characteristics of academic failure, suspension, and dropout using three multi-method studies to determine relationships to delinquency. The purpose of the three studies was to determine key elements, which contribute to delinquency or the "school to prison pipeline". The authors examined three school characteristics – academic failure, suspension, and dropout – at the elementary, middle and high school levels. In one of the studies, they performed a correlation analysis using 10 school characteristics to examine their relationship with suspension rate. The variables included dropout rate, board violations, and law violations in addition to demographic data such as attendance rate and enrollment. Data from 161

middle schools in the state of Kentucky over a two-year period revealed that board violations, percentage of students enrolled in the free-reduced lunch program, law violations, retention rate and dropout rate correlated positively to suspension rate. Middle schools with high rates of retention and dropout also reported higher rates of student suspensions (Christle et al., 2005). The third study conducted in this research article investigated school characteristics related to dropout rates in 196 high schools in Kentucky. Using dropout rates and the same variables identified above, they conducted a correlation analysis. The dropout rate correlated positively with high board violations, retention, and suspension rates (Christle et al., 2005). The results of the study provide evidence of the negative outcomes associated with school exclusion and high suspension rates that extend throughout a student's school career. Additionally, the results suggest that school-level characteristics such as supportive leadership, school-wide behavior management, and effective academic instruction minimize the risks for delinquent behaviors.

In another study examining student outcomes, Christle, Jolivette, and Nelson (2007) found a positive relationship between suspension rate and dropout. Using both quantitative and qualitative procedures, they used a three-stage analytic process to determine whether certain school characteristics related to dropout rate and to identify characteristics of high schools with low dropout rates compared to high schools with high dropout rates in the state of Kentucky. The first stage included an examination of 196 high schools from which they selected a purposive sample of 40 high schools in stage 2. After conducting quantitative analyses, they conducted on-site observations, surveys and staff interviews for additional data. They analyzed multiple school variables such as

socioeconomic background, ethnic background, academic achievement, attendance, suspension, board violations and law violations to determine which had a positive correlation with dropping out of school. Christle et al. found significant positive correlations between dropout rate and 5 of the 12 school variables Suspension rate was one of the variables significantly correlated with dropout rates (Christle et al., 2007). These findings are consistent with other research regarding dropout and suspension, providing additional evidence that school leaders need suspension alternatives if students are going to be successful in school.

Using national data from the National Longitudinal Survey of Youth 1997, Suh and Suh (2007) identified and examined at-risk factors for dropping out of school. The study considered 180 variables as possible contributing factors for dropping out of school. The initial examination yielded 16 statistically significant predictors of high school dropout, one of which being out-of-school suspension. After identifying the significant predictors, they examined academic risk, socioeconomic status, and suspension for their level of predicting dropping out of school. Although they identified academic risk as having the greatest impact on dropout rates, they indicated suspension has an almost equivalent effect when examined independently (Suh & Suh, 2007). Other studies examining predictors of drop-out often cite this study (Lee, Cornell, Gregory & Fan, 2011; Noltemeyer et al., 2015) providing additional evidence of the relationship between suspension and dropout rates.

Similarly, Lee et al. (2011) found a positive correlation between suspension rates and dropout rates. They examined the association between school suspension rates and dropout rates for 2006-07 in a statewide sample of 289 Virginia public high schools.

Using the school as the unit of measure and regression analyses, they found that schools with high suspension rates tended to have high dropout rates (Lee et al., 2011). The researchers do indicate that a correlational study cannot establish a causal relationship. These findings indicate out-of-school suspensions may increase the dropout rate for both White and Black students. These findings contribute to the evidence that suspension policies have a negative relationship with students completing high school.

To study the relationship between suspension and high school completion, Balfanz, Byrnes, and Fox (2015) examined the connection between OSS in the ninth grade and high school completion. They analyzed data from a cohort of close to 200,000 students who were first-time ninth graders in 2000-01 in the state of Florida. The data follows the students to the 2005-06 school year for high school outcomes. Consistent with previous research on disproportionate suspensions, they found that 39% of black students were suspended one or more times compared to 22% of white students (Balfanz et al., 2014). Additionally, they determined suspension in ninth grade directly related to student's high school outcomes. One suspension in ninth grade is associated with a two-fold increase in the risk for dropping out (Balfanz et al., 2014).

School administrators tend to rely heavily on reactive and exclusionary responses to problem behavior due to concerns with student safety. These exclusionary practices do not change problem behavior but exclude students from learning. Using out-of-school suspensions to discipline students predicts future suspensions, and contributes to students' poor academic performance and ability to graduate on time (Lee et al., 2011; Raffaele Mendez, 2003; Skiba & Peterson, 1999; Suh & Suh, 2007). Suspending students from school removes them from the learning environment, thus making it harder for them

to maintain their coursework. There is a need to identify solutions for student misbehavior in schools to not only decrease problem behaviors but also increase academic achievement.

Positive Behavior Interventions and Supports (PBIS)

Empirical research documents the evidence supporting the need to reduce school suspensions. As indicated in the previous sections, suspension leads to negative academic outcomes including failure to graduate from high school. Additionally, evidence regarding racial suspension disproportionality dates back to the Children's Defense study of 1975. Due to the pervasiveness of this disproportionality, the federal government identified school discipline policy as a national priority for education and juvenile justice reform, calling on local school districts to reduce out-of-school suspensions and expulsions, especially among students of color. The combined Departments of Education (ED) and Juvenile Justice (DJJ) developed a letter describing the national phenomenon of disproportionate suspension, which included a directory of resources for schools to use (ED & DOJ, 2014). The directory identifies PBIS as an approach to discipline that promotes positive results for students. PBIS focuses on teaching appropriate behavior instead of focusing on punitive responses to misbehavior. Evidence suggests that proactive and preventive behavioral interventions reduce discipline incidents and protect students from suspension and expulsion (Skiba et al., 2011).

As part of the 1997 reauthorization of the Individuals with Disability Education Act (IDEA), Congress added PBIS as an approach to prevent exclusions from school and improve educational results for students with disabilities. That authorization of IDEA also created the Technical Assistance Center on PBIS, shifting the focus from an

individual approach to a systems approach for positive behavior. The charge was to explore how to incorporate a variety of behavioral practices into a school-wide framework that would address the social-emotional needs of students through a structure for the delivery of a continuum of evidence-based practices (OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports, 2015). Since then, schools and districts have applied PBIS school-wide to improve outcomes for all students, not just for students with disabilities.

School-wide Positive Behavior Support (SWPBIS) is a framework of intervention practices and organizational systems for establishing the social culture, learning and teaching environment, and individual behavior supports needed to achieve academic and social success for all students (Office of Special Education Programs [OSEP], 2010). PBIS is not a curriculum or program, but an approach to prevent problem behaviors and rely less on punitive responses to inappropriate behaviors. It is a promising approach to meet the challenge of school suspensions because of its focus on preventive measures for problem behavior. The focus on establishing a clear, consistent, and positive social culture, identifying and teaching clear expectations for behavior reduces ambiguity for both students and staff (McIntosh, Girvan, Horner, Smolkowski, & Sugai, 2014). As previously stated, PBIS was initially identified as a preventive measure for problem behavior in the field of special education. PBIS methodology evolved and school leaders have applied PBIS to entire schools, thus the term School-wide Positive Behavior Interventions and Supports (SWPBIS). People use PBIS and SWPBIS interchangeably. For the remainder of this article, I will use the acronym PBIS to indicate school-wide use of positive behavior supports.

Four interactive elements guide PBIS implementation, which interface with each other systematically for student success (Sugai & Horner, 2002). First, the school leadership team must identify measurable and achievable outcomes. Secondly, the school team selects practices to meet the needs of students. Third, the school team analyzes data to evaluate the practices. Finally, the team establishes system supports to enable PBIS implementation. These four elements are not hierarchical, but cyclical to inform PBIS implementation. It is critical for all of these components to be in place to effectively implement and sustain PBIS. Next, I describe these elements in further detail to explore their relationship with each other.

The first key element of PBIS implementation is identifying outcomes. The school staff must specify, endorse, emphasize, and monitor academic or behavior targets (OSEP, 2015). These long-term outcomes should be measurable and achievable. The school staff need to determine what is important to their particular learning community and set outcomes related to the student needs as indicated by their data analysis. The outcomes could be related to improvement in academics, discipline or the overall school climate. The school team collaborates with all stakeholders i.e. students, school staff, and families to identify the outcomes which will indicate student success for their particular school. The outcomes will vary at different school locations due to differing needs of schools. Desired outcomes are major drivers of PBIS implementation. If the school team has not identified their desired outcomes, then they cannot implement PBIS with fidelity.

Next, school teams must select practices to meet the needs of students. These practices should be interventions and strategies evidence-based in achieving the indicated outcomes (OSEP, 2015). School teams should not select packaged programs that do not

meet the needs of their student but use practices supported by research. Additionally, the practices should be aligned with and address the need or problem that the school is encountering as indicated by their data analysis. The school team analyzes their data to determine what their needs are and which practices are appropriate to meet those needs. Sugai and Horner (2002) identify four considerations for selection of school practices: effectiveness, efficiency, relevance, and durability. They recommend school teams address these four considerations before adopting a practice. The ongoing progress monitoring by the leadership team will determine if the practices meet these criteria and are working to meet the desired outcomes.

Following the selection of practices, school teams analyze data to inform their decision-making. Data are information points used to select, monitor and evaluate outcomes, practices, and systems (OSEP, 2015). Data sources may include training data, discipline data, and academic data. Sugai and Horner (2006) suggest that schools must have an efficient and user-friendly system to enter, store and summarize data. School teams should review discipline data at least quarterly to determine if PBIS practices are being implemented (Sugai & Horner, 2006). Sugai and Horner (2006) recommend school teams review the number of office discipline referrals (ODR) per day per month, number of ODR by type of behavior, number of ODR by students and number of ODR by staff members. In addition, school teams should review academic achievement outcomes to determine if PBIS is associated with increased academic performance. Finally, school teams analyze training data to ensure school staff members have the support needed to implement PBIS. By examining these data, school teams can develop action plans that relate directly to the specific needs of students or staff. Without frequent data collection

and analysis, school teams cannot make informed decisions on how to select appropriate practices to meet the desired outcomes.

Finally, school teams must have systems in place for PBIS implementation. OSEP (2015) defines systems as supports needed to enable the accurate and durable implementation of practices, efficient use of data and achievement of outcomes. The establishment of a leadership team is a critical component of the system to lead and coordinate PBIS implementation in the school. The leadership team is comprised of school-based staff representing a variety of stakeholders i.e., both general and special education teachers, mental health support staff, school administrators and parents/guardians. One of the major activities of the leadership team is to develop an action plan that guides the implementation of PBIS (Sugai & Horner, 2006). The school team develops the action plan based on their review of student data and structured self-assessments. The team conducts self-assessments to evaluate the organizational structures, resources and/or initiatives to determine if they are in place or need to be improved (Sugai & Horner, 2006). Additionally, the team trains and coaches school staff to facilitate accurate PBIS implementation. The team provides ongoing training to address staff turnover and slippage in implementation to ensure teachers and staff implement PBIS with fidelity. The school leadership team is an important driver of the system. The school team works to ensure systems are in place for PBIS implementation by selecting evidence-based practices and analyzing data to meet the identified outcomes.

PBIS is a whole-school approach emphasizing effective systemic and individualized behavioral interventions for achieving social and learning outcomes while preventing problem behaviors (Sugai & Horner, 2006). PBIS is not a program, but a

systematic approach for proactive planning for problem behaviors. PBIS utilizes a multi-tiered framework to meet the needs of students. There are three tiers in the PBIS framework with increasing supports at tier. The PBIS framework provides a continuum of supports in which students receive assistance based on the intensity of their needs. The following sections describe the tiers and the level of support for students at each tier.

Tier I: Universal Interventions

PBIS is a three-tiered model working on the premise that all students receive Tier I or school-wide services (Sugai & Horner, 2006). There are six major intervention features, which characterize the universal or primary tier of PBIS. The first step requires the staff to agree to use a common approach to discipline that is positive, research-based, and contextually appropriate with a focus on instruction (Sugai & Horner, 2009). School staff must agree on a common approach to maintaining consistent expectations for students.

Secondly, school personnel work together with students and even community members to identify three to five school-wide expectations using positive language to use in all areas of the school (Sugai & Horner, 2006). The expectations focus on all staff, all students, and all settings. They emphasize academic and behavioral outcomes, which are contextually and culturally appropriate. The common behavioral expectations generally center on being safe, ready, respectful, and responsible.

Third, school staff members are to teach the expectations directly and consistently in the same manner as a teacher would teach academics. The staff members who teach expectations are not limited to teachers, any staff member who may interact with a student is to be trained to teach and reinforce the school expectations. The common

language and behavioral expectations are taught explicitly to all students and are highly visible throughout common areas within the school building such as classrooms, hallways, bathrooms, playgrounds, gymnasiums, lunchrooms, and even school buses (OSEP Technical Assistance Center on PBIS, 2015). The expectations connect to examples in the various school areas explicitly. By having universal expectations across settings, students are aware of behavioral expectations regardless of the setting. Teaching the expectations to students is critical to creating and sustaining a clear understanding of the behavioral expectations.

Fourth, the universal tier of interventions provides a continuum of procedures for the acknowledgment of students who display appropriate behaviors. By creating common expectations and teaching them to students, teachers and staff can reinforce appropriate student behavior. Students must receive positive feedback and acknowledgment for their displays of appropriate behavior if the behaviors are to occur more in the future and maintained over time. The feedback should be frequent, individualized, built on positive person-to-person relationships and provided at higher rates than consequences for rule violations. (Sugai & Horner, 2009). Sugai and Horner (2009) note the importance of teachers and school staff consistency with positive feedback.

In addition to positive acknowledgment for students displaying appropriate behaviors, school staff must also have a continuum of logical consequences for problem behavior (Horner, Sugai, & Anderson, 2010). Students will continue to display problem behavior in schools and there must be procedures in place for when this happens. The procedures for problem behavior teach staff and students which behaviors are violations of the school-wide expectations. Horner et al. (2010) indicate that there should be a clear

distinction between problem behaviors managed by the classroom staff and the problem behaviors managed by administrative staff. Teachers can address some behaviors within the classroom setting, while more intense behaviors require an administrative response. There must be clear distinctions for these situations to ensure both students and teachers understand procedures when students do not meet the school expectations. Additionally, school staff must assign corrective consequences based on the function of the problem behavior and logically based on the rule violation (Horner et al., 2010). Consequences should not be excessive for minor behaviors or too lenient for severe behaviors. The school staff must collaborate on the consequences and strategies for responding to problem behaviors across settings within the school.

Finally, the school staff must employ some type of data collection system. School staff are to use some type of data collection tool to capture student misbehavior i.e. office discipline referrals (ODR) or other measures to collect student information. Information must be accurate, timely, and easily available to guide decision making to support the implementation of PBIS (Sugai & Horner, 2010). The school team should review the data regularly to develop plans to prevent the reoccurrence of problem behavior and to determine if students are in need of intensive interventions.

The universal interventions level is the whole school approach to reduce problem behaviors and meet the needs of all students. When school staff implement PBIS with fidelity, approximately 80-90% of students respond well at the Tier I level and need no further support (Sugai et al., 2000). For PBIS to be effective in reducing problem behavior and increasing positive behavior, these components must be in place for all students. Additionally, all staff must implement the practices consistently. The next

section describes interventions for students who require more intensive interventions than Tier I.

Tier II: Targeted Interventions

The second tier of supports is designed for students who are not responding to the universal level of support. Students requiring Tier II interventions are at a greater risk of displaying inappropriate behaviors and require more targeted support (Horner et al., 2010; Sugai & Horner, 2006;). Approximately, 5-10% of students in a school may require targeted group interventions (Sugai & Horner, 2008). Tier II interventions are more intensive in terms of effort, resources, and frequency of implementation. The interventions involve a member of the staff providing frequent and ongoing interaction with the student (Sugai & Horner, 2009). The staff member may or may not be a behavior specialist, but they must implement the strategies identified by the school team.

An important feature at this level is data collection and analysis system. A team of school professionals, which may include teachers, counselors or school psychologists, review data to determine students who require this level of support. Data collection is more frequent in order to adjust interventions quickly if students are not meeting their goals (Horner et al., 2010). Access to data is a cornerstone of the PBIS framework to ensure consistent implementation and improved student behavior. School teams use the data to consider the needs of their students and available resources when designing secondary interventions. The school teams base interventions on the data analysis, which helps to identify student needs. School staff may use packaged programs like Check and Connect, Check-in/Check-out, First Step to Success or Think Time (Horner et al., 2010).

Students may also participate in small group social skills lessons targeted at problem behaviors. Schools may also opt to use other interventions such as scheduling strategies to increase daily structure and providing closer supervision.

Students receiving targeted interventions at the Tier II level continue to receive the universal interventions. School staff meets with students one or more times each day to evaluate the student's individual behaviors with the school-wide expectations. The goal is to increase the opportunities for teachers and school staff to provide feedback to students on their behavior. The students at this level do not require intensive, individualized interventions, but benefit from additional supports above the primary level. If a student requires more individualized support, then they advance to Tier III for intensive support.

Tier III: Intensive Interventions

When students do not respond to the Tier I or Tier II interventions, they receive intensive and individualized interventions to address their problem behaviors in addition to the Tier I and II supports (Sugai & Horner, 2006; Sugai et al., 2000). When implemented with fidelity, there should be fewer students at this level. Sugai and Horner (2008) suggest that only 1-5% of students should require Tier III interventions. This level is for students who require a significant investment of time and resources as well as a high level of expertise (Horner et al., 2010). School staff individualize the supports to the unique needs of the student in addition to the supports and interventions at the primary and secondary level.

Students at this level receive a Functional Behavior Assessment (FBA) to determine factors in the environment influencing the student's behavior. This assessment

clearly defines the behavior of concern; identifies relationships between the behavior and the environment; determines the function of the behavior; identifies replacement behaviors; provides strategies for preventing the problem behavior or reinforcing the appropriate behavior (Scott, Anderson, Mancil & Alter, 2009). Qualified personnel with the understanding of how to analyze data must conduct the FBA and lead the team to make decisions regarding the data. The behavior support team should also consist of school staff who are familiar with the student and parents (Scott et al., 2009). School staff may include teachers, counselors, administrators or behavior coaches. Once the assessment is complete, the team develops a behavior plan to include specific strategies and interventions aimed at reducing the occurrence of the target behavior. Once again, data collection and progress monitoring are key at this level to make changes to the student behavior plan as needed for student success.

PBIS Implementation

In the previous section, I described the components needed to implement PBIS successfully based on research. Identified outcomes, evidence-based practices, data analysis and systems to support PBIS implementation are critical for schools to make positive changes in student behavior. While these components are critical, it is equally important that school teams evaluate if they are implementing the plan as intended. The PBIS Technical Assistance Center (2018) reports over 25,000 schools in the United States are in various stages of implementing school-wide PBIS in 47 states including Washington DC. Thirty-one states have a state leadership team in place to coordinate PBIS efforts (Spaulding, Horner, May & Vincent, 2008). Even with the growing number of school trained in PBIS and the growing evidence for PBIS, there are challenges with

implementation fidelity. In this section of the chapter, I explore the critical factors needed for successful implementation of PBIS and the challenges hindering progress.

PBIS is a framework providing schools with a guide to develop systems of supports to meet their own needs using school data. Many schools have adopted PBIS, but the level of implementation informs the true success of PBIS. There are four essential components, which drive the implementation, effectiveness, and sustainability of PBIS: systems, use of data, practices, and outcomes (Sugai & Horner, 2002). If schools are able to integrate systems, practices and data analysis then they can have positive outcomes for student behavior.

In a statewide examination of PBIS in Illinois, Simonsen et al., (2012) analyzed school data over seven years to determine if there was a relationship with PBIS implementation fidelity and school-level student behavior and academic outcomes. Using hierarchical linear modeling, they concluded schools implementing PBIS with fidelity had significantly lower rates of OSS than schools not implementing with fidelity (Simonsen et al., 2012). With these positive outcomes associated with PBIS, schools need to understand the factors needed to sustain implementation.

The OSEP National Technical Assistance Center on PBIS provides a blueprint for successful implementation of PBIS. The PBIS Center recommends forming a leadership team to coordinate four primary functions: training, coaching, evaluation and developing behavioral expertise (OSEP, 2010). This blueprint serves as a guide for schools, districts, and states who are implementing PBIS to improve the school climate and positive behaviors for all students. The leadership team is to focus on securing and maintaining visibility, political support, stable funding and policy changes to support implementation

(OSEP, 2010). One of the most critical factors needed for PBIS implementation is a strong leadership team on both the district and school levels.

The ability of a school district to implement and sustain PBIS begins with district support. A district-level team is necessary to coordinate support and technical assistance to schools (Barret et al., 2008). These teams work collaboratively with state-level teams and may receive assistance from the national technical assistance center to stay current with research in PBIS. Important members of the district level team are PBIS behavior coaches. These coaches receive intensive training in school-wide supports, targeted interventions for students who require them, and program evaluation (Barrett et al., 2008). They may also participate in training to conduct functional behavioral assessments for students with significant needs. These coaches provide on-site technical assistance to schools to develop systems, analyze data and make decisions about behavior management practices. They serve as a liaison between the school and the district in PBIS efforts.

The leadership team within the school building is also critical in implementing the features of PBIS. The focus for the leadership team is on capacity building within the local school and developing the expertise of the school staff (Simonsen et al., 2012). The school team provides leadership for PBIS implementation by guiding the process of developing common expectations and targeted interventions for students who do not respond to school-wide supports. The leadership is also responsible for collecting and analyzing school data to determine patterns and trends of problem behaviors to develop systems to prevent the problem behaviors from reoccurring (Barrett et al., 2008). If schools do not have a leadership team in place within the school building, the school staff will not receive the needed training and support required to sustain PBIS implementation.

The district and school leadership team are critical features for PBIS implementation, which begin with administrative support. In their study of PBIS implementation in an Illinois urban high school, Netzel and Eber (2003) identified building level administrator buy-in and follow through as key for sustained PBIS implementation. The building principal serves as the model for staff to follow and creates the climate for change in the building. Additionally, Coffey and Horner (2012) collected sustainability data from over 100 schools in six states to determine critical features needed for sustaining PBIS. They found one of the biggest predictors of PBIS sustainability is administrator support at the school and district level (Coffey & Horner, 2012). Administrator buy-in ensures that school staff members receive the time and resources needed to implement PBIS.

Another critical feature for the successful implementation of PBIS is staff buy-in. If teachers do not buy into the tenets of PBIS, then they will not implement with fidelity. Netzel and Eber (2003) suggest that prior to implementing PBIS, the school leadership team must have a shared philosophy regarding implementing PBIS if it is to sustain over time. Teachers and school staff must be willing to teach expectations and reinforce appropriate behavior if they want problem behaviors to decrease. For PBIS implementation to sustain over time, 80% of school staff members must buy-in or agree to implement (Sugai & Horner, 2006). Staff must be willing to put in the work in a proactive manner to reduce problem behavior.

The school leadership team and district coaches can help maintain this buy-in through staff development and coaching. Initial and ongoing technical assistance remain critical factors in achieving high fidelity of PBIS implementation (Coffey & Horner,

2012). Monthly meetings with district coaches and school leadership teams encourage dialogue about the practices used in the school to promote positive behaviors. These teams may use a variety of tools to measure if they are reaching their desired outcomes. School teams can use student outcome data such as academics and behavior to determine if they are meeting the desired goals. However, school teams also need to evaluate why they are or are not meeting their goals to determine if practices are sustainable and develop plans for continuous improvement. In addition to analyzing student data, schools must evaluate the fidelity of PBIS implementation. Algozzine et al. (2010) recommend school PBIS teams have an evaluation plan, which includes an annual comprehensive fidelity measure to monitor the progress of implementation throughout the school year. In the next section, I describe fidelity measures school teams may use to determine if PBIS implementation is adequate to achieve their state goals.

PBIS Implementation Fidelity Measures

I described the varying challenges to PBIS implementation in the previous section, which vary depending on school factors like staff buy-in and administrative support. School teams can use implementation fidelity measures to identify the factors, which are preventing PBIS implementation as planned. There are multiple instruments used to measure PBIS implementation fidelity. The Benchmarks of Quality (BOQ) and the Tiered Fidelity Inventory (TFI) are two examples of instruments used to measure PBIS implementation. Both of these tools are research validated and utilized in previous PBIS research studies to measure PBIS implementation. In this section, I describe PBIS fidelity assessments and school team use them to measure PBIS implementation.

The BOQ was developed to address the need for an efficient method to measure PBIS implementation that would also provide feedback to teams to move towards higher levels of implementation (Childs, Kincaid, & George, 2011). The BOQ is a survey consisting of 53 items used annually by school teams to measure the degree of fidelity with which the school is implementing PBIS. Survey items consist of critical components for implementing PBIS as indicated by Lewis and Sugai (1999). The critical elements correspond to 10 subscales of the instrument: PBIS Team, Faculty Commitment, Effective Discipline Procedures, Data Entry, Expectations and Rules, Reward System, Lesson Plans, Implementation Plans, Crisis Plans, and Evaluation (Cohen, Kincaid & Childs, 2007). The highest possible score is 100 and schools must obtain 70 or higher to be considered implementing PBIS with high fidelity. School teams use the results to evaluate the extent to which the school is implementing Tier I PBIS and to identify areas of strength and weakness for establishing future action plans.

School teams use the BOQ to determine how the universal level or Tier I is functioning to meet student needs. The survey responses on the BOQ assess individual items as it relates to the school allowing the team to document program effectiveness. The PBIS coach or facilitator and school team members complete the survey based on the ten critical elements mentioned above. The raters indicate whether elements are “not in place”, “need improvement”, or are “in place”. The coach or facilitator should be a person with knowledge and full understanding of the critical elements of universal supports and be a person whose role on the school PBIS team is to guide PBIS implementation (George & Childs, 2012). The coach completes the coach scoring form, team members complete the team member rating form individually and the coach

identifies scoring discrepancies on the team summary. Finally, the coach reconciles scoring discrepancies and reports strengths and weaknesses to the team and the district or state database. Low scores may indicate if a school is struggling to establish a school-wide system of behavioral support (George & Childs, 2012). The team summary provides information for the team to develop a plan to address weaknesses in implementation as well as celebrate successes. Results of the BOQ guide action planning to assist in the continuous improvement of the behavioral systems in the school.

The BOQ is a self-report instrument completed by school teams. The BOQ has demonstrated reliability and validity with internal consistency (.96), test-retest reliability (.94) and interrater reliability (.87) (Cohen et al., 2007). While the instrument has demonstrated reliability and validity, there are concerns with potential bias. The coach may not accurately measure the performance of the school or team due to limited exposure to daily activities. For this reason, the coach must reconcile scores from the coach and the members of the team by discussing discrepancies with the team. The coach is to share the discrepancies with the team and seek additional information to make any necessary adjustments. Additionally, the scoring rubric provides the coach with assistance in determining scores. If these strategies do not work, schools may request a district coordinator conduct a brief evaluation to verify implementation levels. School teams may employ these strategies to reduce potential bias in the survey responses.

Researchers used the BOQ in two separate studies of PBIS implementation in the state of Florida. In their statewide evaluation of PBIS in Florida, Childs et al. (2010) used the BOQ to evaluate the level of PBIS implementation in more than 300 schools across the state. The purpose of the study was to evaluate PBIS effectiveness statewide using

PBIS implementation as both dependent and independent variable. As the dependent variable, the team used the BOQ to determine if schools were implementing PBIS with fidelity across years and across school types. The team also used the BOQ to determine if schools implementing PBIS with high fidelity had greater outcomes than schools with low fidelity (independent variable). The results indicated more than 50% of schools were implementing PBIS with fidelity and the number of schools implementing with fidelity increased each year of the study from 2004-2007 (Childs et al., 2010). The research team used the BOQ to determine if schools were implementing PBIS with fidelity over time and across school types. Additionally, the authors were able to use the BOQ to determine if high fidelity had a relationship with improved student outcomes.

In a different study of PBIS in Florida, Childs, Kincaid, George, and Gage (2016) used the BOQ to determine if higher scores on the BOQ related to improved behavioral outcomes. They conducted a longitudinal analysis to examine the association of BOQ scores and school-level behavioral outcomes. The participating schools included 724 elementary schools, 248 middle schools and 150 high schools who trained in PBIS. They modeled BOQ data as a time-invariant average to assess the impact of overall fidelity of implementation on discipline outcomes over a four-year period. The researchers used the BOQ because that is the standard protocol for the Florida PBIS Project comprehensive evaluation (Childs et al., 2016). The BOQ results provided the information needed to determine the level of PBIS implementation.

Another research team used the BOQ to measure fidelity of implementation over time in a study of PBIS in 261 schools across the United States. Matthews, McIntosh, Frank, and May (2014) used the BOQ to determine if the implementation fidelity of PBIS

was sustained over a three year period in the schools. They administered the BOQ at the end of three years as an indicator of sustained fidelity of implementation. Matthews et al., (2014) found that the BOQ had high predictive validity because schools with higher BOQ scores (>70%) for two years of implementation had significantly decreased rates of ODRs. The BOQ has demonstrated the ability to assess the degree to which a school is implementing PBIS at the universal level. The BOQ results can help school teams identify their own strengths and weaknesses. Finally, the BOQ provides actionable results for schools to make changes in PBIS implementation. The studies I described above indicate the effectiveness of the BOQ to measure PBIS implementation.

While the BOQ has demonstrated effectiveness to measure PBIS implementation, schools may also use the TFI to guide implementation of the PBIS framework. Although there are other instruments used to measure PBIS implementation such as the BOQ and School-wide Evaluation Tool (SET), there was no single tool that school teams could use to measure initial implementation, develop an action plan, and monitor the progress of implementation across all tiers. The TFI is a comprehensive and efficient measure of fidelity, with a common format, scale, and language to assess each tier, for schools at any level of implementation (McIntosh et al., 2017). The TFI has demonstrated high test-retest reliability (.99) and interrater reliability across all three tiers (.99) (McIntosh et al., 2017). School teams can administer the TFI more than once throughout the school year to monitor implementation fidelity because the TFI is not as long as other instruments. There are 15 questions to measure the core PBIS features.

The TFI consists of three sections: Tier I for universal features, Tier II for targeted features and Tier III for intensive features. School teams may use the sections

separately or together to assess to whether a school needs PBIS or as a guide for implementation of Tier I, II, and III practices. A school team of 3-8 people, which may include a building administrator, an external coach or a district coordinator, completes the TFI to indicate if core components are in place. Research on the validity of the instrument demonstrates that school teams are more accurate when an external coach facilitates the completion of the TFI (Algozzine et al., 2014). The team scores the components as not implemented (0), partially implemented (1) or fully implemented (2). Data sources are included to help teams evaluate each item objectively. Each subscale provides a percentage; higher scores indicate greater fidelity of PBIS implementation. School teams administer the TFI when they begin PBIS implementation and then every third or fourth team meeting until reaching the goal of at least 70% fidelity. When the school reaches fidelity on a tier, the school team may administer the TFI annually to evaluate sustained PBIS implementation.

The TFI is a valid assessment to measure PBIS implementation fidelity. McIntosh et al. (2017) conducted the pilot study of 789 schools in seven states, primarily in Florida and Illinois, in the 2013-14 school year to validate and refine a new, comprehensive fidelity measure for PBIS for all three tiers. The school teams completed the TFI as an additional fidelity measure to the measures they were already using. They used four research-validated measures as concurrent measures of PBIS implementation: Benchmarks of Quality (Kincaid et al., 2005); Team Implementation Checklist (TIC) (Sugai, Horner et al., 2001); PBIS Self-Assessment Survey (SAS) (Sugai et al., 2000); and Benchmark for Advanced Tiers (BAT) (Anderson et al., 2012). The BOQ, SAS, and TIC were the comparison instruments for the Tier I scale of the TFI. Similar to the BOQ,

the SAS and TIC measure the extent key activities are in place for school-wide PBIS implementation. The BAT Tier II and III scale scores were comparison measures for the TFI Tier II and III scales. The BAT is a measure that assesses implementation of Tiers II and III, as well as the supporting systems at Tiers II and III. Each school included in the study completed one of these measures along with the TFI to determine the validity of the TFI. The researchers calculated Pearson correlations between the TFI and other existing measures of fidelity of implementation. McIntosh et al. (2017) determined correlations between the TFI and other measures were statistically significant and were stronger when the team completed the TFI with an external coach. The statistically significant correlations with existing PBIS fidelity measures are evidence that the TFI is a valid measure of PBIS implementation.

The district for this current study has used both the BOQ and TFI to measure PBIS implementation. I described the context behind measuring PBIS implementation because it is important to know PBIS components that must be in place to achieve fidelity. Without a reliable and valid assessment of fidelity, there is the possibility of assuming that PBIS does not work when in fact there may be challenges with the degree of implementation. There are many challenges to implementing PBIS with fidelity, one of which being the setting. In the following section, I describe PBIS implementation in urban settings and the challenges associated with the urban context.

PBIS Implementation in Urban Settings

In the previous sections, I described PBIS, the necessary components to implement with fidelity and challenges to implementing PBIS. Additionally, I described how school teams measure PBIS implementation to determine the sustainability of the

framework for improved outcomes. In this section, I describe the unique aspects of an urban setting, which can present challenges for schools and districts in these environments. The needs of schools and districts in urban settings vary from rural and suburban schools. Teachers and school staff must deal with nonacademic factors influencing instruction in urban settings, which include race, poverty, differences in language, limited resources and dense populations (Netzel & Eber, 2003; Warren et al. 2003). The quality of life for students in urban areas is different from students in rural or suburban areas due to these factors. Additionally, increased student problem behavior is a critical issue in urban schools. Urban public school administrators utilize policies such as zero tolerance to exclude students who display inappropriate behavior with a focus on punishment, instead of preventative measures. PBIS implementation in urban settings requires the same broad range of systemic and individualized strategies for achieving social and learning outcomes while preventing problem behavior (Horner & Sugai, 2009). Urban settings can be more complex than rural and suburban areas and school staff is to develop preventive strategies instead of focusing on punishments for inappropriate behaviors. Netzel and Eber (2003) agree that a shared philosophy regarding student behavior is critical to PBIS implementation. School teams are to develop a plan for increasing positive behaviors and work together to implement the plan if PBIS is to sustain over time especially in an urban context. In this section, I will explore PBIS implementation in urban settings to identify the challenges of implementing PBIS in environments with complex needs.

The US Census Bureau defines urban areas as areas that represent densely developed territory encompassing residential, commercial, and other non-residential

urban land uses with 50,000 or more people (US Census Bureau, 2010). Within these urban areas are school districts characterized as having high rates of poverty, ethnic diversity, and English Language Learners. Many of the students who attend urban schools are living below or close to the poverty line. Nationally, 21% of children (15 million) lived in families with incomes below the poverty line in 2015 (Annie Casey Foundation, 2017). Concentrated poverty increases the probability that students will lack access to regular medical care, live in a household headed by a single mother, become a victim of crime, have a parent who never finished high school, become pregnant, and drop out of school (Lee, 2005). Students have exposure to more risk factors for school failure and come to school unprepared to take advantage of learning opportunities because of the environment in which they live. The impact of persistent poverty on children is physical, emotional, cognitive and psychological (Ravitch, 2013). The students may experience problems with absenteeism, classroom discipline, and low academic achievement. Poverty can affect students' motivation and their ability to concentrate on anything beyond daily survival. Warren et al. (2003) indicate challenging behavior is more frequent in urban schools and occurs in more severe forms, requiring more secondary and tertiary supports. Students living in poverty may lack the ability to self-regulate their emotions due to environmental factors. The ability of school staff to respond to the complex needs of students experiencing concentrated poverty influences their ability to sustain PBIS implementation. Urban schools with high poverty rates will need additional training and technical assistance to support PBIS implementation.

Schools in inner cities often experience a shortage of certified teachers to meet the needs of their students. School districts may respond to the shortage by hiring teachers

with alternative or no certification. Bradshaw and Pas (2011) found that a higher concentration of teachers with standard certification and the number of years of PBIS training were both associated with higher implementation. They conducted a study of the Maryland statewide support system for PBIS using regression models to predict implementation quality of PBIS in districts throughout the state of Maryland. They aimed to determine the factors associated with training, adoption and full implementation of PBIS. They collected data for this study during the 2006-07 and 2007-08 school years for all districts implementing PBIS. Of the 24 districts, 17 districts were included in the analysis consisting of 298 schools trained in PBIS. Schools were in various stages of implementation depending on when they received the initial training. The researchers analyzed multiple variables including years of PBIS training, suspensions, student mobility, enrollment, truancy, student to teacher ratio, percent of certified teachers, percent of special education and academic performance to measure the implementation quality. The other school factors did not have a relationship with higher rates of fidelity. The number of certified teachers had a stronger relationship with implementation fidelity than student-teacher ratio or the students' academic performance (Bradshaw & Pas, 2011). PBIS is a school-wide approach to positive behaviors, but it is dependent on the extent to which individual teachers implement classroom PBIS practices with fidelity (Mathews, McIntosh, Frank, & May, 2014). Urban schools tend to have higher rates of teachers with alternative certification, which can present challenges for classroom management and PBIS implementation. If a school lacks high concentrations of teachers who are certified, this may influence the instructional quality of PBIS expectations.

Recruiting and retaining certified teachers is a challenge, however, another challenge deals with teachers ability to teach social skills.

Another teacher factor related to PBIS implementation is the skill and will of secondary teachers to teach behavioral expectations. In their case study of an urban high school in Chicago, Bohanon et al. (2006) found that high school teachers wanted to focus on academics and did not consider teaching behavioral skills. The research team studied PBIS implementation over three academic years within the same high school. The team collected implementation data using the SET to measure implementation over time. The team also conducted qualitative analyses through staff unstructured interviews and observations. The team found that the barrier to PBIS implementation was encouraging staff to teach behavioral expectations directly (Bohanon et al., 2006). The team surmised that secondary teachers spend more time focusing on their content area than on pedagogy. Additionally, the teachers may have a belief system that students should just follow the rules, especially on the secondary level since they are older. Bohanon et al. (2006) noted it is important for school leadership to understand the training, priorities, and needs of high school teachers to teach expected behaviors. A major component of PBIS is the requirement of teachers to teach students behavioral expectations. Students living in urban settings especially in high poverty areas are more likely to enter school without readiness skills resulting in academic frustration that may lead to challenging behaviors (Nelson, 2000). In addition to teaching academics, teachers in urban schools must be willing and able to teach social skills to prevent problem behaviors from occurring. School staff cannot expect changes in student behavior if the staff has not explicitly expressed or taught the behavioral expectations.

Urban schools are complex organizations that vary depending on the environmental and cultural factors influencing the schools. It is important to be cognizant of the specific factors influencing students' needs and behaviors. Bohanon et al. (2006) identified establishing school-wide acknowledge systems, teaching expected behaviors, managing implementation logistics, and enacting consistent policies that address behavior as barriers to PBIS implementation in urban schools. Additionally, Payne and Eckert (2010) indicated school-level factors including support of the school principal, school size, the urbanicity and poverty of the surrounding community, and teacher turnover were significantly related to implementation quality. All of these factors can influence PBIS implementation in urban settings. There are limited studies focusing on the needs of schools in larger, urban areas with greater ethnic and cultural mix of students, more students from impoverished environments, and greater occurrence of inappropriate behaviors school-wide (McCurdy, Mannella & Eldridge, 2003). Warren et al. (2003) add that few studies have evaluated the application of PBIS in urban schools characterized by severe poverty, community violence and high rates of problem behavior. For this reason, I focused on secondary schools in urban settings to determine if there is a relationship between PBIS implementation and student outcomes. I examine the research on PBIS and the effect on student discipline in the following section.

The Effect of PBIS on Student Discipline

Positive Behavior Interventions and Supports (PBIS) is a systematic approach to establishing behavioral supports needed for students to achieve academic and behavioral success. As I stated previously, Congress introduced PBIS in the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA) to improve outcomes for students

with disabilities who required behavior supports. Since then, the training in and use of PBIS expanded to over 25,000 schools nationwide. Three states have more than 60% of schools implementing PBIS; nine states have more than 40%, and 16 states have more than 30% of schools implementing PBIS. (Sugai & Simonsen, 2012). There is a growing body of research detailing improved behavioral and academic outcomes for students due to PBIS implementation. I defined PBIS, discussed implementation fidelity, and reviewed implementation in urban schools in the previous sections. In this section, I examine the research on effects of PBIS in improving student discipline.

PBIS has a positive effect on reducing office discipline referrals and out-of-school suspensions on the elementary school level. Bradshaw et al. (2010) conducted a 5-year longitudinal study in 37 Maryland elementary schools and found that schools randomly assigned to implement PBIS had 35% fewer office discipline referrals (ODR) and experienced significantly lower suspension rates compared to the schools that did not implement PBIS. The schools trained in PBIS experienced a significant reduction in the rates of suspensions, while the rate for non-trained schools remained the same during this period. The PBIS trained schools reported a significant reduction in both the percentage of children with major or minor ODR events as well as for the overall rate of major and minor ODR events (Bradshaw et al., 2010). Discipline events continued to occur, but the frequency and intensity decreased in this study. In a statewide review of the effectiveness of Maryland's PBIS efforts Barrett, Bradshaw & Lewis-Palmer (2008) found that there was a 43% overall reduction in office disciplinary referrals (ODRs), 33% fewer ODRs in middle schools and 37% fewer ODRs in high schools. These findings of these studies

provide evidence of the effectiveness of PBIS as a method for reducing ODRs and suspensions.

In addition to elementary schools, PBIS implementation has demonstrated effectiveness at the middle and high school levels. Muscott, Mann, and LeBrun (2008) conducted a program evaluation of Tier I PBIS implementation to determine if PBIS had an effect on school discipline and academic outcomes to expand to the body of research on large-scale PBIS implementation. There were 28 schools and programs ranging from Headstart to high school from various parts of the state included in the program evaluation. Additionally, all school administrators who participated in the study had to commit to ten assurances related to their support of PBIS implementation. The evaluation included an analysis of PBIS implementation fidelity and student outcomes for two academic school years. Overall, the schools experienced 28% reduction in ODR, 31% reduction in ISS and 19% reduction in OSS (Muscott et al., 2008). Middle and high schools experienced the most benefit from the PBIS implementation with significant differences in behavior incidents, which prompt suspension. The evaluation team further quantified the results into instructional days stating the decreased negative discipline events helped to recover 864 days of teaching, 1,701 days of learning, and 571 days of leadership for administrators (Muscott et al., 2008). The researchers also stated they believe the results of PBIS implementation were due in part to the commitment of the administrators and faculty. These findings suggest PBIS is an effective tool for secondary schools to improve student behavior and recover lost instructional days due to out-of-school suspension. Further, these findings point to the need for administrators and school

staff to commit to PBIS implementation to sustain over time and yield positive results for students.

Additionally, in a statewide evaluation of PBIS in Florida, schools experienced positive results with PBIS implementation. Childs, Kincaid, and George (2010) evaluated the PBIS process in over 300 schools in the state of Florida. The purpose of the statewide evaluation was to determine if schools were implementing PBIS and to determine if the level of implementation was associated with student outcomes. The findings indicated there were statistically significant differences between baseline and Year 1 for ODRs per 100 students. The average reduction in days of ISS per 100 students after one year of implementation was 16%. Although the results were promising, Childs et al. (2010) indicated a need for further research on the evaluation of the PBIS process and the relationship between implementation and student outcomes.

In a recent study, Freeman et al. (2016) found that PBIS implementation fidelity was associated with reductions in ODR rates and increases in attendance rates. The purpose of their study was to explore the connection between PBIS implementation and academic, attendance, and behavior outcomes across high schools in 37 states. Using a quasi-experimental design, they compared school outcomes prior to PBIS implementation to school outcomes after implementation. Freeman et al. (2016) reported that the effect of fidelity on ODR rates indicated statistically significant decreases for schools approaching fidelity. Schools that were approaching fidelity or at implementation fidelity had significantly lower ODR rates than schools that were not implementing. Although they did not find statistically significant differences in academics, they did find significant

differences in attendance. This study provides further evidence that implementation fidelity is key for PBIS to improve outcomes for students.

The studies I described in this section have detailed statewide and large-scale analyses of PBIS implementation in various school settings providing evidence of the framework to improve student outcomes. In addition to these studies, there is a meta-analysis, which analyzed multiple PBIS studies to examine the effects of PBIS across school environments, time frame, and outcome variables. Solomon, Klein, Hintze, Cressey, and Peller (2012) conducted a meta-analysis spanning 16 years of research and 20 articles on PBIS, using peer-reviewed journals and dissertations from 1993 to 2008. The meta-analysis included single-case design studies that examined PBIS at the school level and a focus on change in student behavior over time in a school setting. Of the 20 studies, 13 consisted of elementary schools with the remaining in preschool, middle and high schools. The settings for the studies included urban, rural and suburban locations. Their findings indicated PBIS is moderately effective in reducing student problem behavior with strong effects for elementary and middle school settings (Solomon et al., 2012). They also indicate a need for more research in early childhood and secondary settings. While this meta-analysis did not provide conclusive evidence regarding the effect of PBIS implementation, it provides information on how PBIS implementation can vary due to fidelity of implementation; outcome variables (i.e., behavior or academic); school type (i.e., elementary, middle and high) and school setting (i.e., rural, suburban and urban). These differences in the meta-analysis studies point to the need for ongoing research in PBIS implementation as schools and school districts have distinctive strengths and needs.

The implementation of PBIS has a connection with an increase in positive behaviors in students and decreases in problem behaviors, which result in office discipline referrals (Bradshaw, Mitchell & Leaf, 2010; Horner et al., 2010; Simonsen et al., 2012). Although there is evidence supporting PBIS implementation, the evidence is not conclusive on whether PBIS closes the discipline gap. Vincent, Swain-Bradway, Tobin, and May (2011) conducted a study to determine if PBIS implementation was associated with decreases in the discipline gap across racial-ethnic groups and students with disabilities. They conducted a longitudinal study over three consecutive academic years comparing schools who were implementing PBIS to schools who were not implementing. The percent of students with office discipline referrals and Individualized Education Programs (IEP) was compared across racial-ethnic categories. There were over 150 elementary schools included in the study, 72 who were implementing PBIS and 81 who were not. While both groups of schools were determined to have discipline gaps, in schools who were implementing PBIS the gap was statistically significantly smaller (Vincent et al., 2011). Additionally, they found that schools who were implementing PBIS had lower overall office discipline referrals per 100 than schools not implementing (Vincent et al., 2011). Although causal inferences between PBIS and the discipline gap were not possible, research suggests that PBIS is a promising approach to reducing overall office discipline referrals. By studying three consecutive academic years, the team was able to use data based on the same groups of students, which informs PBIS implementation and its impact over time.

The studies I described above document the results schools are achieving due to PBIS implementation. Schools experienced reductions in both office discipline referrals

and out-of-school suspension events thereby increasing instructional time in the classroom. School staff have the potential to decrease the discipline gap through PBIS implementation, which creates multiple intervention points before suspension, or expulsion, provides mental health support for children dealing with trauma, teaches behavioral expectations that might minimize cultural mismatch in the classroom, and creates structured school environments with clear behavioral expectations (Koon, 2013). The benefits of PBIS have the potential to extend beyond increased positive behavior and improve academic outcomes. When students are able to spend more time in class and have more time engaged in instruction, then academic outcomes for the students are likely to increase. Additionally, if instructional time increases because teachers are responding and reacting less to inappropriate behavior, opportunities for instructional and learning should increase. It is reasonable to predict that decreased discipline problems correspond with increased academic achievement.

Theoretical Framework

Students may display a range of behaviors, which can disrupt the learning environment. Teachers and administrator may respond to these behaviors in a variety of ways depending on the severity of the misbehavior. Fair and equitable discipline policies are an important component of creating an environment where all students feel safe and welcome. Schools are safer when all students feel comfortable and are engaged in the school community, and when teachers and administrators have the tools to prevent and address student misbehavior when it occurs. School staff who do not establish positive social culture will have difficulty achieving the academic gains that define the purpose of education.

PBIS is an approach to preventing problem behaviors and promoting positive behavior in students. PBIS is an applied science that uses educational and systems change methods such as redesigning the environment to minimize problem behavior. The framework encourages implementers to teach students the behavioral expectations determined by the school and reinforce the behaviors when displayed. The multi-tiered framework provides guidance on activities to implement at each tier designed to increase positive behavior in students. PBIS initially evolved within the field of developmental disabilities and emerged from three major sources: applied behavior analysis, the normalization/inclusion movement, and person-centered values (Carr et al., 2002). To understand how PBIS fits within changing behavior we need to understand the theoretical concepts. I will next examine the three major sources of PBIS supporting the framework for changing behavior.

Applied Behavior Analysis

Carr et al. (2002) identified applied behavior analysis (ABA) as the essential foundation and source from which PBIS practices have emerged and acknowledged ABA as the operant conceptual framework for PBIS. Baer, Wolf, and Risley (1968) described ABA as the process of applying tentative principles of behavior to the improvement of specific behaviors, while simultaneously evaluating whether any changes noted are attributable to the process of application. When one is analyzing behavior, they are concerned with examining and evaluating the behavior to determine changes needed to fit the social context. ABA provides the concepts of stimulus-response-consequence, which has served as the springboard for the development of PBIS (Carr et al., 2002). ABA provides the foundational principles for school staff regarding evaluating and analyzing

behavior in school settings. For school teams to implement PBIS with fidelity, they must analyze the behavior to determine what occurs immediately before and after a behavior to determine how to prevent problem behavior from occurring again.

The primary goal of behavior analysis goes beyond the demonstration of changes in behavior to include the demonstration that changes in the target behavior are a result of changes in the environment (Baer et al., 1968). Ideally, changes implemented by school staff result in changes to student behavior rather than just by happenstance. Schools must analyze their data to determine if there is a relationship between changes in the environment and changes in student behavior. One of the enduring contributions of ABA to PBIS is an emphasis on ongoing, direct measurement of behavior (Carr et al., 2002). Data analysis is another critical component for successful PBIS implementation as it informs staff practice to maintain appropriate student behavior. School teams are to use their data to make decisions regarding staff practices environmental structures to improve student behavior.

Applied behavior analysis (ABA) is grounded in the assumption that human behavior can change and provides a model for evidence of the need to address the unique needs of individuals with problem behavior (Dunlap, Sailor, Horner & Sugai, 2009). Positive behavioral support emphasizes teaching as a central behavior change tool and focuses on replacing coercion with an environmental redesign to achieve meaningful and enduring change in the behavior of students (Sugai et al., 2000). For school staff to improve student behaviors, teachers must provide students with new behaviors to replace inappropriate behaviors. Teachers and school staff make changes in the school environment to decrease opportunities for negative behaviors in places like the school

playground, cafeteria or hallways. Finally, to encourage the use of the taught behaviors, teachers reinforce positive behaviors when students display them. These teacher activities are applied behavior analysis theory in action to change student behavior. These are all components of PBIS, with the fidelity of implementation being critical to sustained changes in student and staff behavior.

Normalization/Inclusion Movement

In addition to ABA, the concept of normalization or inclusion influences PBIS. The ultimate goal of normalization is to ensure that people who are at risk of exclusion from opportunities have the same access as others (Carr et al., 2002). The focus of normalization has been on people with disabilities; however, this notion also applies to students excluded from school due to inappropriate behaviors. PBIS promotes an inclusive environment providing an opportunity for all students to be included in the school setting. PBIS focuses on positive supports to keep students engaged in the learning process. School staff who implement PBIS with fidelity provide supports and intervention to students to keep the students in the classroom. The focus of PBIS is creating an environment of support to include all students.

Normalization is a value-based set of principles with a focus on people. During the 1970s and 1980s, normalization focused on people with disabilities (Carr et al., 2002). Special education advocates rallied for students with disabilities to be included in the public school and the general education setting with their non-disabled peers during this time. Congress enacted The Education for all Handicapped Children Act (EHA) in 1975 to normalize and include students with disabilities. In 1990, Congress reauthorized EHA and renamed it the Individuals with Disability Education Act (IDEA) to place more

focus on the individual. Prior to EHA and IDEA, states were allowed to exclude certain types of disabilities from attending public school. PBIS subscribes to the notion of inclusion through the multi-tiered framework. The tiered framework provides services and supports based on student needs to allow them the same opportunities as other students in the school. As students' needs increase, so do the amount of support provided. When implemented with fidelity, PBIS provides students with the supports they need to display appropriate behavior and remain in the school environment. Remaining in the school and classroom environment is critical to the success of students. When students miss the opportunity to be included in the classroom, they miss valuable instruction prompting academic deficiencies.

Person-centered Values

The PBIS philosophy embraces person-centered approach instead of a program-centered approach (Carr et al., 2002). PBIS is not a program, but a framework and approach to support students to be successful in the school setting. The multi-tiered PBIS framework demonstrates a focus on meeting individual student needs. There is not a one size fits all approach to meet the students' needs. Students receive the same interventions at the Tier I universal level, but only students who need more intensive supports receive them at Tiers 2 and 3. School staff implementing PBIS with fidelity analyze data to determine student needs and provide supports with a student-centered focus.

An assumption of PBIS is that if individuals have what they need, the problem behavior will reduce or cease to occur altogether (Carr et al., 2002). The PBIS framework demonstrates this guiding principle through the multi-tiered system. As students' needs become more intensive, the level of supports increase. All students begin at the Tier I

level with a positive climate and clear behavioral expectations. If students continue to display negative behaviors, then they receive more support such as small group interventions at Tier II. If the Tier II supports are not sufficient to meet their needs, then students receive very individualized supports at Tier III to meet their needs. Person-centered values seek to empower students to achieve their goals and PBIS employs these values to meet the needs of students. Excluding students is not student-centered and seeks to devalue students who display inappropriate behaviors.

In person-centered planning, the specific needs and goals of the individual drive the development of services to address the unique needs of the person (Carr et al., 2002). One of the strategies of Tier III of the PBIS framework is a functional behavioral assessment (FBA). The FBA is an individual assessment to determine the reasons, severity, duration, and settings for students' inappropriate behavior. School staff conducts the FBA to develop a behavior support plan to improve student behavior. The FBA and behavior support plan are person-centered values in action. The focus is on the individual student and how best to meet their needs instead of a narrow focus on the inappropriate behavior. When students have the behavior supports they need, they can use the supports to remain in the school setting. Excluding students from class or school does not provide them with the support or instruction needed to be successful contributors to life.

Applied behavior analysis, the inclusion movement, and person-centered values influence the key theoretical principles of PBIS. These concepts focus on meeting the needs of individuals while allowing them to participate in environments like others around them. Applied behavior analysis seeks to determine the reason for the inappropriate behavior and make changes in the behavior based on data. The inclusion

movement seeks to include all people in their own community. Person-centered values ensure that the person is first when making decisions. All of these principles influence PBIS implementation. In the following sections, I detail the need for an alternative to suspension, the PBIS tiered framework and PBIS implementation.

Literature Review Summary

School-wide discipline has garnered national attention, controversy, and discussion on how to implement in urban settings. Black and Latino students represent a disproportionate number of office discipline referrals (ODR) and out-of-school suspensions (OSS) across the country. The loss of instructional time due to exclusionary discipline has led to negative outcomes for these students. Therefore, school and district leaders need an alternative to suspension for addressing problem behavior. There is evidence to support the effectiveness of PBIS on the elementary level (Bradshaw et al., 2010). There is some evidence on the middle and high school level to suggest that PBIS can reduce suspension rates (Barrett, Bradshaw & Lewis-Palmer, 2008). However, there is a need for more research in order to determine if PBIS can close the discipline gap in large urban districts with student underachievement and high rates of poverty. Bohanon et al. (2006) suggest a need for more research in urban high schools in order to determine the impact of PBIS. Additionally, Sugai and Horner (2008) state there is more to learn about making PBIS implementation more effective and efficient in complex urban environments, isolated rural settings, and large multifaceted high schools. Finally, there is a need for more research on implementation fidelity and its impact on student outcomes (Lassen, Steele & Sailor, 2006; Simonsen et al., 2010). Furthermore, Freeman et al. (2016) indicate much of the research on PBIS outcomes has occurred at the elementary

and middle school levels, leaving a need for more thorough examination at the high school level. Therefore, I aimed to contribute empirical evidence to the body of research regarding the relationship between PBIS implementation fidelity and student outcomes on the secondary level to close the discipline gap in a large, urban district.

Studying PBIS is important for a national context as well as a local context for educators. The district for this particular study is a large urban district in the Southeastern part of the United States. This district was ideal for this study because the state department of education cited the district in 2013 for disproportionate discipline practices. Because of this citation, the state mandated the district to develop a corrective action plan (CAP) to address disproportionate discipline. One of the prominent strategies identified in the CAP was the use of PBIS. There is evidence to support that PBIS has a positive relationship with reducing problem behaviors and is a more effective approach to student misbehavior than exclusionary methods (Bradshaw et al., 2010; Horner et al., 2010; Simonsen et al., 2012). Although studies indicate the effectiveness of PBIS, there is a need for more research on implementation fidelity. I explored implementation because, without fidelity of implementation, the effectiveness of PBIS is hard to determine (Freeman et al., 2016). I intended to determine if, after PBIS implementation, there was a statistically significant difference in student behavioral outcomes as measured by ODR and OSS. I used ODR as one source of data because it is the recommended and most widely used source of data for monitoring of PBIS effectiveness (Sugai et al., 2000). I also examined student suspensions to determine if there was a decrease in suspensions over time. Finally, I examined reading and math scores to determine if there was a statistically significant difference in academic achievement. An understanding of

the relationship between PBIS implementation fidelity and school-level outcome measures in urban districts is critical for informing educators, policymakers, and researchers.

The purpose of this study was to determine if there is a statistically significant difference in student outcomes after PBIS implementation on the secondary level in a large, urban district. This study intended to add to the body of research on PBIS implementation in urban secondary schools. There is more to learn about implementing PBIS in complex, secondary schools. The research questions for this study were:

1. Is there a statistically significant increase in PBIS Tier I fidelity over time in schools who are under corrective action?
2. Is there a statistically significant decrease in office discipline referrals (ODR) after PBIS implementation?
3. Is there a statistically significant decrease in out-of-school suspensions (OSS) after PBIS implementation?
4. Is there a statistically significant increase in reading achievement after PBIS implementation?
5. Is there a statistically significant increase in mathematics achievement after PBIS implementation?

I analyzed longitudinal data for 24 schools, to determine if there were significant differences over a four-year period. The longitudinal analyses indicated results over time, providing rich data of systemic needs to change practices. While the study had strengths, it was limited to one school district in the Southeastern United States, which does not allow for generalizability. Additionally, this study is limited because there is no way to

assess cause and effect between student outcomes and PBIS implementation. The schools included in the study were mandated to improve student discipline outcomes due to the corrective action plan and were implementing other initiatives to improve discipline and academic achievement. Although there are limitations to the study, there are practical implications regarding PBIS implementation for both the district of study and other large, urban districts who are considering PBIS.

CHAPTER 3

METHODOLOGY

The purpose of this study was to determine if there was a statistically significant difference in PBIS implementation and student outcomes in urban, secondary schools. Specifically, I sought to determine if discipline and academic achievement outcomes improved in secondary schools who implemented PBIS due to disproportionate suspensions. The following research questions guided the study:

1. Is there a statistically significant increase in PBIS Tier I fidelity over time in schools who are under corrective action?
2. Is there a statistically significant decrease in office discipline referrals (ODR) after PBIS implementation?
3. Is there a statistically significant decrease in out-of-school suspensions (OSS) after PBIS implementation?
4. Is there a statistically significant increase in reading achievement after PBIS implementation?
5. Is there a statistically significant increase in mathematics achievement after PBIS implementation?

This chapter focuses on the methods that I utilized to carry out the research study. I describe the setting of the study as well as the participants in the sample. I discuss the selection and operationalization of variables used in the study. Additionally, I summarize the research design, data sources, and statistical procedures that I used in the research study. I conclude the chapter with the limitations of the study.

Hypothesis

The purpose of this study was to determine if there is a significant difference in student outcomes as measured by ODR, OSS and academic achievement after PBIS implementation. The hypotheses of the study were:

- There will be a statistically significant increase in PBIS Tier I implementation fidelity over the four-year period.
- There will be a statistically significant decrease in the number of ODR in schools over the four-year period.
- There will be a statistically significant decrease in the number OSS events in schools over the four-year period.
- There will be a statistically significant increase in reading scores over the four-year period.
- There will be a statistically significant increase in math scores over the four-year period.

Research Design

I used the repeated measures analysis of variance (ANOVA) statistical procedure to determine if there were statistically significant differences in PBIS implementation fidelity and student outcomes. Stevens (2007) indicates the repeated measures ANOVA is

appropriate when one is concerned with performance trends over time. The purpose of this analysis was to determine if schools implemented PBIS with fidelity over time. The second purpose was to determine if there were significant differences in student outcomes during the three-year period after PBIS training and implementation. I used existing school data for each school in the sample to conduct the analysis. The schools participated in training during the 2013-14 school year. The 2013-14 school year served as the baseline year for the student outcome variables. The following years of 2014-17 provided three full academic years after PBIS training. I analyzed PBIS implementation fidelity for the three years immediately following the initial training in 2013-14. I analyzed student outcome data for the year of training and the three academic years after the initial PBIS training.

I conducted the repeated measures ANOVA to determine if there was a statistically significant difference in implementation fidelity over the three years. Additionally, I used the repeated measures ANOVA to determine if academic and discipline outcomes improved over the period of study. The focus of the study was 24 schools who district leaders required to participate in PBIS training due to disproportionate suspension data which yielded a small sample size. With a small sample size, the repeated measures ANOVA is advantageous to use because it requires fewer subjects for a study (Stevens, 2002). Researchers can use the repeated measures ANOVA to determine if there is a difference in the mean scores over several data points. I conducted the repeated measures ANOVA to analyze PBIS implementation fidelity, academic and behavioral data to determine if there were statistically significant differences over time. My goal was to determine if school outcomes improved after three

years of PBIS implementation and the repeated measures ANOVA provided the data analysis to answer these questions.

Instrumentation

School district staff used the Benchmarks of Quality (BOQ) and the Tiered Fidelity Inventory (TFI) to collect PBIS implementation fidelity data. I received the PBIS implementation fidelity data from the district's research and data department. I used state standardized achievement data to measure academics. For discipline data, I used the number of office discipline referrals and out-of-school suspensions. The research and data management department provided discipline and academic data disaggregated by schools after I completed their data request process. The academic data consisted of standardized assessment scores as reported by the state department of education. Finally, the discipline data consisted of data from the student information system in which each school is required to enter their own discipline data. At the end of each school year, the state department of education compiles the discipline report and allows schools to review their data for errors. I used the discipline data after the completed data quality reviews for each of the years in the study. I summarize the variables and their previous use in empirical research in Table 1.

Table 1

Variables in the Model with Their Grounding in the *Literature*

	Variable	Variable Type	Grounding in the Literature
Years of PBIS Implementation	Number of years of PBIS implementation	Independent Variable Categorical	Childs et al. (2016); Simonsen et al. (2012);
PBIS Implementation Fidelity	Benchmarks of Quality	Dependent variable Continuous	Childs, Kincaid & George (2010); Cohen, Kincaid, & Childs (2007)
	Tiered Fidelity Inventory	Dependent variable Continuous	Algozzine et al. (2014); McIntosh et al. (2017)
Discipline Outcomes	Office Discipline Referral	Dependent variable Continuous	Irvin, Tobin, Sprague, Sugai & Vincent (2004); Skiba et al. (2002); Skiba et al. (2011)
	Out-of-School Suspension	Dependent variable Continuous	Raffaele Mendez (2003); Skiba & Rausch (2006); Skiba et al. (2011); Wald & Losen (2003)
Academic Outcomes	Kentucky Performance Rating for Educational Progress (KPREP) Reading scores	Dependent variable Continuous	Arcia (2006); Morris & Perry (2016); Perry & Morris (2014)
	Kentucky Performance Rating for Educational Progress (K-PREP) Math scores	Dependent variable Continuous	Arcia (2006); Morris & Perry (2016); Perry & Morris (2014)

Implementation Fidelity

The first research question was to determine if schools implemented PBIS with fidelity over time. The independent variable was the number of years of PBIS implementation (categorical) and the dependent variable was the PBIS implementation

fidelity score (continuous). School staff completed PBIS implementation fidelity self-assessments to produce the fidelity score. The district of study used the Benchmarks of Quality (BOQ) and the Tiered Fidelity Inventory (TFI) to assess PBIS implementation fidelity. District staff used the BOQ the initial year of PBIS training to measure implementation. In subsequent years, school and district staff used the TFI as the fidelity instrument to measure PBIS implementation. Both the BOQ and TFI are research-validated measures used to assess PBIS implementation (Cohen et al., 2007; McIntosh et al., 2017). I used fidelity scores from both the BOQ and the TFI to measure PBIS implementation fidelity for each year of implementation.

The school district used the BOQ to measure implementation after the initial year of PBIS training. The school teams completed the BOQ to assess their PBIS implementation at the end of the 2014-15 school year. The BOQ questions relate to procedures required for PBIS implementation. The self-assessment includes questions to address whether school staff define problem behavior, teach expected behaviors, and reinforce appropriate behaviors. The BOQ asks each team member to indicate whether various benchmarks are in place, need improvement, or are not in place. Then, the coach or team leader compares his or her ratings with the team's ratings and completes a team summary report to create an overall total score. If the school team scores at least 70%, then the school has reached PBIS implementation fidelity.

The BOQ is a survey used annually to measure the degree of PBIS implementation fidelity (Cohen et al., 2007). The BOQ has demonstrated strong psychometric properties with internal consistency (.96), test-retest reliability (.94) and interrater reliability (.87) (Cohen et al., 2007). The high test-retest reliability indicates

that the BOQ is a stable instrument, and the high interrater reliability indicates that the BOQ process, including the scoring guide, allows for accurate and consistent scoring across different evaluators. The BOQ is a common tool used by many school districts to measure PBIS implementation.

The district staff changed fidelity measures in the second full year of PBIS implementation. District staff decided to use the TFI to measure implementation, with scores collected in the fall and spring of each school year. I collected the TFI data for the remaining years from the district reports required for execution of a federal grant to implement PBIS. The inventory addresses features of PBIS that should be in place for each tier. I focused on the Tier I subscale of the inventory, which asks 15 questions assessing whether critical features are functioning to implement Tier I of PBIS. The subscale produces a percentage, which teams use to determine the level of implementation. A score of 70% is acceptable for implementation that will result in improved student outcomes and more research is being conducted to identify a specific score for each tier (Algozzine et al., 2014). The school teams administered the TFI in both the fall and spring of the school year. For data consistency, I used the spring score, which is the final score for the end of that particular school year. Using the spring score also allowed schools to improve upon fall scores from earlier in the school year.

The TFI is a measure of the extent to which school staff is applying the core features of PBIS (Algozzine et al., 2014). The TFI is for use by school teams to measure their PBIS implementation. It is best for an external coach to facilitate the administration of the survey for the accuracy of scoring and interpreting results. Validity research indicates survey scores are more accurate when a coach external to the school team

facilitates completion of the inventory (Algozzine et al., 2014). After the completion of the inventory, the team calculates summary scores for each scale, which represents the percentage of PBIS components in place for each tier and a total for all three tiers. The school teams are then able to generate reports to develop action plans and for the coach to guide the team.

McIntosh et al. (2017) conducted studies to assess the TFI construct validity, usability, reliability, and concurrent validity with existing, validated measures of SWPBIS fidelity of implementation. They determined the TFI is reliable and valid to measure PBIS implementation fidelity as evidenced by a high test-retest reliability (.99) and interrater reliability across all three tiers (.99) (McIntosh et al., 2017). They also determined the TFI correlated with other PBIS fidelity implementation measures such as the Benchmarks of Quality (BOQ). Additionally, Mercer, McIntosh, and Hoselton (2017) found that there were no statistically significant differences between the Tier I scores of the TFI and BOQ in their study of PBIS fidelity measures. The purpose of their study was to examine the comparability of PBIS Tier I fidelity assessments to examine the sensitivity of the measures and any differences. They found few differences in mean scores of the fidelity assessments with the exception of the School-wide Evaluation Tool (SET) (Mercer et al., 2017). Additionally, they indicated that the TFI demonstrated evidence of convergent validity with other Tier I PBIS fidelity measures ($r = .54-.64$) (Mercer et al., 2017). For the purposes of this study, I compared the fidelity scores from the BOQ and the TFI.

The TFI measures all three tiers of PBIS implementation, but for the purpose of this study, I focused on Tier I of the PBIS framework. The unit of analysis was the

district's PBIS Tier I implementation fidelity scores. I wanted to determine if the district increased PBIS Tier I implementation fidelity during the study period. Additionally, I wanted to determine if there were statistically significant differences in student outcomes for discipline and academic achievement over the period of study.

Student Discipline Data

Student discipline data is the dependent variable I used to measure problem behavior in the schools. While there are many ways to measure problem behaviors in schools, I used office discipline referrals (ODR) and out-of-school suspensions (OSS) as indicators of problem behavior. Both the school district and state department of education collect these student data points as indicators of school district quality and school safety. In this section, I describe the discipline variables, data analysis procedures, and technical adequacy of the variables.

Office discipline referrals (ODR) often serve as a measure of student problem behaviors (Irvin et al., 2004). While school and district leaders often use ODR to measure problem behaviors, their use of them is subjective. The referral process is subject to influence by students' previous problem behaviors or race/ethnicity (Skiba et al., 2008). Additionally, other teacher factors can influence the use of ODR including classroom management of skills, tolerance for disorder or even mood for a particular day. Most ODRs originate in the classroom setting. Pas, Bradshaw, and Mitchell (2011) found that ODRs are moderately valid indicators of student behavior problems and may be an efficient source of information for use in data-based decision-making at the school level. They examined the relationship of ODRs in the school database with teacher ratings of student behavior using data from 21 elementary schools implementing PBIS. They

conducted correlations to determine the level of validity between the ODR data and teacher ratings of student behavior problems and found they correlated significantly and moderately ($r = .57$) (Pas, Bradshaw & Mitchell, 2011). Although ODRs are subject to teacher and administrator bias, they are efficient tools to report and collect data for problem behaviors in schools.

School staff use office discipline referrals (ODR) to document when a student has violated a school rule to gain an administrative consequence. School staff enter the student misbehavior and identifying information into the school district's data management system for an administrator to review and assign a consequence. Teachers and staff may refer students for minor behaviors including tardy to class or refusal to follow directions as well as more severe behaviors such as fighting. The total number of ODRs is the number of times a staff member referred students for violation of a school rule to a school administrator that the administrator processed, assigned a negative consequence, and recorded into the school's discipline database for 2013-17. I calculated ODR rates by dividing the total number of referrals per school by the total enrollment per year. I collected school level ODR data, which did not include student identifying information. ODR data are reliable and valid when used for within school comparisons (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). I compared the ODR data with the previous year data and not with other schools in the study, to determine if there was a statistically significant decrease in the number of ODR for each school over the study period.

As another measure of student discipline, I examined the OSS events for the schools. Out-of-school suspension (OSS) is a disciplinary action administered for a

student's inappropriate behavior, requiring student exclusion completely from the school environment for a set period of time (Costenbader & Markson, 1998). The student may not participate in school or any extracurricular activities. School administrators have long used suspensions as a method to improve student behavior; however, there is not conclusive evidence to document the effectiveness of suspension to change student behavior. There is limited data to document the reliability and validity of suspensions. In spite of the limited data reliability of the use of suspensions, school districts, states and even the federal government use this data as an indicator of school quality and safety.

In the district of study, an administrator can suspend a student for offenses as outlined in the district's Code of Acceptable Behavior and Discipline, which classifies violations and suggests disciplinary actions according to severity. Behaviors that may warrant suspension include fighting, possession of weapons, and possession of tobacco or drugs. There are also some behaviors, which are not as severe but may also result in a suspension such as classroom disruption or failure to follow instructions. Ultimately, the school administrator decides if a student is suspended. The OSS event is a consequence assigned by a school administrator because of an office discipline referral in which a student could not attend school for academic years 2013-2017. I examined the number of times a student was suspended and not the actual number of days for the suspensions. I calculated OSS events by dividing the total number of suspensions per school by the total enrollment per school year to determine if there was a statistically significant difference in OSS for each school after three years of PBIS implementation.

Student Achievement Data

The state department of education began a new public school assessment program in the 2011-12 school year named the Kentucky Performance Rating for Education Progress (KPREP). K-PREP contains questions measuring knowledge of the Kentucky Academic Standards. It is a criterion-referenced test consisting of multiple choice, extended response and short answer questions for students in grades 3-8. Students receive a scaled score derived from a statistical transformation of the raw scores. The scaled scores represent a metric that is consistent across test forms and allows for comparisons across test administrations within subject and grade (KDE, 2015). The scores are categorized using cut points into four performance levels: Novice, Apprentice, Proficient, and Distinguished. Students earning Novice or Apprentice are below state benchmarks, while Proficient meets state benchmarks and Distinguished exceeds benchmarks. I used the K-PREP as the dependent variable for reading and math achievement for grades 6-8. I examined the percentage of students who earned a rating of Proficient or Distinguished, which meets or exceeds state benchmarks for academic achievement.

The KDE and a testing contractor collaboratively developed the KPREP to measure students' proficiency with the KY academic standards. The testing contractor used coefficient alpha estimates to measure the reliability of the assessment for each overall test and item type for each grade and subject. The reliability indices, model fit, and dimensionality studies provided consistent results, which indicate the generalizability of K-PREP scores (KDE, 2015). Additionally, the assessment is a valid measure of student achievement on the KY Academic Standards. There is a combination of multiple

choice, short answer, and extended response items for one domain of interest measuring the area of interest more fully than if only one type of response format was used (KDE, 2015). The use of different question types increases the validity of the KPREP.

State department officials also adopted a new assessment model at the high school level to measure reading and math proficiency. State department officials purchased assessments for English II, Algebra II, Biology and US History as part of ACT's Quality Core program. The state department of education uses these end-of-course assessments for Algebra II and English II in the state accountability model to demonstrate proficiency in reading and math at the high school level. These end-of-course tests (EOC) measure grade appropriate core academic content, basic skills, and higher-order thinking skills. Similar to the K-PREP, the EOC consist of multiple choice, multiple select, short answer, extended response, and essay items. I examined the percentage of students in each school earning a rating of Proficient or Distinguished, which mirrors the performance ratings for the middle school level.

The Quality Core End-of-Course Assessments measure the learning outcomes students need to attain to succeed in college. Each assessment includes problem-based items embedded in contexts that require practical applications of concepts, theories, principles, and processes (ACT, 2014). Two separate validity studies sought to determine which standards the respondents deemed essential in preparing students for college coursework and the studies indicated the EOC were valid measures of student achievement. The first study in 2005 was a survey of English, mathematics and science teachers from schools on the top 300 high-performing high schools in the nation. The respondents completed a survey to identify rigorous knowledge and skills taught in

college-preparatory courses. In a separate study, a panel of experts reviewed the high school survey results and compared them to the ACT Course standards. Both studies confirmed the validity of the EOC measures (ACT, 2014). Additionally, a study using national data was conducted in 2008 to ensure all forms of the test equated to the same scaled score. The researchers examined data from five tests, which include the Algebra II test and English 10 test, to determine the equating method to produce results comparable to the random group. They found the EOC tests for English II (.92) and Algebra II (.78) EOC were reliable measures for reading and mathematics for students who completed those courses (ACT, 2014).

In this section, I described the student outcome data used for my study. I acknowledge that the standardized assessments are a snapshot of students' performance at one particular time at the end of the school year. Standardized assessments are just one measure of students' academic abilities. However, district, state, and national educational leaders use these assessments as a measure of school and student success. Scholars and researched commonly use these data points to measure the quality of schools. I describe the setting for the study in the next section.

Setting

The school district in which I conducted the study is a large, urban school district in the southeastern United States. The school district's boundaries are coterminous with those of the county. The district is the largest in the state with a student population slightly below 101,000 students according to the district website for the 2015-16 school year. The school district is in the top 30 of the largest population of students in school districts in the United States based on 2016-17 enrollment data (Niche, 2017). There are

155 comprehensive schools in this district with 92 on the elementary level, 24 on the middle school level and 23 on the high school level. The district also has special schools including alternative schools for discipline and special schools serving only students with disabilities. Some schools have multiple grade levels within one building such as K-12 and 6-12. For the purpose of the study, I focused on secondary schools with grades 6-12.

The district has a diverse student population, recently becoming a minority-majority district with the combination of non-White student groups growing larger than the percentage of White students. Based on 2016-17 district data found on the district website the students are identified as White 45%, Black 37%, Latino 10% and Other 8%. Over half of the students are eligible for free/reduced lunch (62.3%) based on 2016-17 data.

In April 2013, the state Department of Education (DOE) notified the superintendent of the district that there was a significant discrepancy in the suspension rates. The DOE analyzed data from 2010-11, 2011-12 and trend data from the previous five years. The DOE cited the district in January 2011 and again the following year in February 2012 for disproportionate suspensions. School administrators suspended African-American students with disabilities three times the state rate of suspensions for the same category of students. The DOE required district staff to develop and implement a corrective action plan (CAP) to address the disproportionate suspension rates because of multiple citations.

An analysis of the district data revealed that school administrators were suspending all African-American students, not just African-American students with disabilities. District leaders identified 24 middle and high schools with disproportionate

suspension rates - 11 middle schools and 13 high schools. Two of the schools are comprised of both middle and high school grades, and the data are disaggregated by level. The district leadership mandated these schools to participate in PBIS training as a strategy to reduce suspension rates. It is important to note that during this same time, the state DOE categorized 16 of the 24 schools as Priority schools due to failure to meet academic outcomes on state achievement assessments for three or more years consecutively. For the purpose of this study, I examined the 24 schools who district leadership required to participate in PBIS training to determine if PBIS implementation fidelity improved discipline and academic outcomes.

Statistical Procedures

For the purpose of this study, I examined PBIS implementation fidelity for the three years immediately following PBIS training. I examined student outcome data from the year of training and the three years following training using the repeated measures ANOVA to determine if there was a statistically significant difference in outcomes over time. Repeated measures ANOVA is the natural design to use when the concern is with performance trends over time (Stevens, 2002). The purpose of using the repeated measures ANOVA is to compare trend data over a specific period. I wanted to determine if implementation fidelity, discipline, and academic outcomes improved over time.

The first research question was to determine if the CAP schools implemented PBIS Tier I with fidelity over time. For this question, the independent variable was years of implementation and the dependent variable was implementation fidelity (continuous). All data used for the study were existing data. I collected PBIS implementation data from the BOQ and the TFI. I employed the repeated measures general linear models (GLM) to

determine if there were statistically significant differences in implementation fidelity over the time. I analyzed the fidelity data from the first year after training and two subsequent years using unadjusted repeated measures to determine if there was a significant difference over time ($p < .01$). Since I used the repeated measures ANOVA, I had to meet certain assumptions. I discuss the model assumptions in the following section.

The remaining research questions address discipline and academic outcomes. The independent variables were years of PBIS implementation (categorical) and the dependent variables were student outcomes (continuous). I collected student outcome data for the year of training (2013-14) and each year after the initial PBIS training and implementation (2014-17) for a total of four years. I analyzed the data using repeated measures ANOVA to determine if there was a statistically significant difference in discipline and academic outcomes after a year of PBIS training (2013-14) and three years of PBIS implementation (2014-17).

I compiled the discipline outcome data into an Excel spreadsheet and exported it into Statistical Analysis Package for the Social Scientist (SPSS) v. 22 software for statistical analysis. I employed the repeated measures GLM to determine if there were statistically significant differences in discipline outcome data after the years of training ($p < .01$). I reported mean rates and standard deviations for ODR and OSS for each year. I also ran analyses for each year to determine if there was a significant difference between ODR and OSS over the four years. Additionally, I used the repeated measures GLM to analyze student achievement data over the four-year period. I reported mean scores for both reading and math. I ran analyses for each year to determine if there were significant

differences in reading and math achievement as measured by annual state assessment scores ($p < .01$).

The repeated measures ANOVA produced multiple data sets to analyze. The tests of within-subjects effects table indicated if there was an overall significant difference between the means in PBIS implementation and student outcomes. When there was a statistically significant difference, I used the pairwise comparison table to determine in which years there was a significant difference. Since the repeated measures ANOVA runs several independent tests at the same time, I used the Bonferroni correction to indicate in which year there is a statistically significant difference. I calculated effect sizes using Eta squared because I was interested in overall differences in scores. The effect size indicates the size of the differences, which may provide practical significance depending on the results.

The unit of study was the district with a sample of 24 schools included in the study. Of the 24 schools, there are 11 middle schools and 13 high schools. There was data for three academic school years for PBIS implementation fidelity and four years of student outcome data maintaining statistical power. Statistical power is the probability of rejecting the null hypothesis when it is false (Stevens, 2007). If statistical power is high, the probability of concluding there is no effect when there is decreases. The size of the sample influences statistical power. Although the sample size for the number of schools for this study is small, the multiple years of data maintained statistical power, thus decreasing the chance of stating there is no effect when there is. I used an alpha level of less than .01 of significance to determine if the null hypotheses can be rejected.

The repeated measures ANOVA is an effective tool to analyze trend data over time and as indicated by previous studies similar to this proposed study. In their study of the effect of PBIS on student outcomes, Bradshaw et al., (2010) used repeated measures to determine if the outcomes behavioral increased for elementary students. Researchers in both Maryland (Barrett, Bradshaw & Lewis-Palmer, 2008) and Illinois (Simonsen et al., 2012) used the repeated measures ANOVA to evaluate statewide PBIS initiatives. These studies used repeated measures to determine if discipline outcomes improved over time due to PBIS implementation fidelity. Repeated measures is appropriate for this study based on previous research measuring outcomes after PBIS implementation.

Assumptions and Limitations

The study had to meet statistical assumptions associated with the repeated measures ANOVA. The independence of observation assumption may be violated as the schools participated in training together and had opportunities to share ideas on how to implement PBIS. To account for the potential of this error, a more conservative alpha level was set at .01. I used the Mauchly's test to determine if I met the assumption of sphericity. If the Mauchly's test indicated that I did not meet the assumption of sphericity, then I used the Greenhouse-Geisser correction to account for this type of error. The Greenhouse-Geisser correction is more conservative and decreases the likelihood of error.

The study was limited to one school district implementing PBIS instead of several districts. The district for the study is the only large, urban district in this particular state. The results of this study cannot generalize to other large, urban districts. Replication in other districts located in urban settings in other states might provide additional important

information regarding PBIS implementation and discipline outcomes. This study is also limited due to the narrow scope of focus. The purpose of the study is to examine discipline and academic outcome data in schools mandated to participate in PBIS training because of a state corrective action plan. The schools trained were at various levels of readiness for PBIS implementation. The schools did not opt into the training but were required due to their high disproportionate suspension rates. Some of the schools have also had high staff turnover rates since the initial training.

Additionally, schools may have improved discipline outcomes that I cannot specifically correlate to PBIS implementation fidelity. All of the schools in the study were under scrutiny due to high suspension rates. School administrators may have employed other measures in addition to PBIS to improve the discipline outcomes. Administrators may have increased the use of in-school suspension as an alternative to out-of-school suspension. More analysis may be needed to determine if other factors influenced discipline outcomes. Therefore, this study was limited because other factors may have influenced the discipline outcomes.

Finally, district staff changed PBIS fidelity measures during the study period, which prompts another limitation of the study. District staff used the BOQ for the first year of PBIS implementation and the TFI for the two subsequent years. School teams can use both measures to determine if the core features of PBIS are in place and to develop action plans. In their study on PBIS fidelity measures, Mercer et al. (2017) found that there were no statistically significant mean differences between the TFI and the BOQ. While there were no statistically significant differences, there are possible limitations to the change in fidelity measures. Both instruments measure the same PBIS core features,

but there may be differences in how school teams assessed specific core elements and differences in scores due to the number of questions in a particular domain.

CHAPTER 4

RESULTS

In this chapter, I describe the results of the study examining PBIS implementation fidelity and student outcomes in secondary schools in a single large, urban school district. The first purpose was to examine if schools under corrective action were implementing PBIS with fidelity over time. The second purpose was to examine if after PBIS implementation there was a statistically significant difference over time in student outcome variables such as (a) office discipline referrals, (b) out-of-school suspension, (c) reading achievement and (d) math achievement in secondary schools in an urban school district. I used the following research questions to guide study:

1. Is there a statistically significant increase in PBIS Tier I fidelity over time in schools who are under corrective action?
2. Is there a statistically significant decrease in office discipline referrals (ODR) after PBIS implementation?
3. Is there a statistically significant decrease in out-of-school suspensions (OSS) after PBIS implementation?
4. Is there a statistically significant increase in reading achievement after PBIS implementation?

5. Is there a statistically significant increase in mathematics achievement after PBIS implementation?

For this study, I aimed to determine if the school district had significant differences in PBIS implementation, improved discipline outcomes and student achievement over a four-year period. School district staff required the schools included in the study to participate in PBIS training due to disproportionate suspensions and a corrective action plan from the state education agency. In the sections below, I address each research question and include descriptive statistics, repeated measures ANOVA results and post hoc analyses in cases of statistical significance.

PBIS Implementation Fidelity

School district personnel measured PBIS implementation fidelity with the BOQ in Year 1 and the TFI in Years 2 and 3. The criteria for implementation fidelity is 70% for both the BOQ and the TFI. All schools included in the study reported PBIS implementation fidelity scores for each year of the study. I summarize the descriptive statistics for PBIS implementation fidelity for each year in Table 2. An examination of the mean scores by implementation year indicates that the total mean scores increased each year. The mean score for Year 1 indicates the district as a whole was not implementing PBIS with fidelity but improved and reached fidelity with scores 70% or greater in Years 2 and 3. The standard deviation from Year 1 to Year 2 decreased slightly indicating less variation in mean scores from year 1 to year 2. However, there is a larger variation from year 2 to year 3 indicating more variability in the mean scores for year 3. Due to the variability in scores, I calculated the range of the mean scores. A closer examination of the scores indicated that in the first year five schools reported PBIS

implementation scores at fidelity. By the third year, 19 schools reported PBIS implementation scores that met fidelity. Not all schools reported implementation data for each year in the study. In the first year, one school did not report implementation data. Another school did not report implementation data in the third year. This school closed at the end of the 2015-16 school year; therefore, there would not be data for 2017. I summarize the number of schools reporting implementation fidelity in Figure 1 to indicate the progress in implementation fidelity.

Table 2

Descriptive Statistics for PBIS Implementation Fidelity

Year	N	M	SD	Range
Year 1	24	50.54	20.68	7-51
Year 2	24	72.33	17.76	40-100
Year 3	24	77.42	25.93	30-100

Figure 1. Number of Schools Reporting Fidelity

I conducted the repeated measures ANOVA to examine PBIS implementation fidelity for the three academic school years after the initial year of PBIS training. The independent variable was the years of implementation, and the dependent variable was PBIS implementation fidelity as measured by the BOQ for year 1. District staff used the TFI for years 2 and 3 to measure implementation fidelity. I conducted the repeated measures ANOVA comparing the implementation fidelity scores at the end of each of the 3 years. The Mauchly's test revealed that I had violated sphericity ($\chi^2(2) = 15.22, p = .01$); therefore, I used the Greenhouse-Geisser correction. Since I did not meet the assumption of sphericity, I used a more conservative alpha level at $p < .01$. I found a statistically significant difference in PBIS implementation fidelity for the three years ($F(1.33, 30.68) = 15.42, p < .01$). The effect size ($\eta^2 = .40$) indicated a large difference in overall scores. The differences for PBIS implementation were both statistically significant and practically significant. I used the Bonferroni test to determine in which years there were statistically significant differences. The pairwise comparisons indicated statistically significant increases from Year 1 to both Years 2 and 3. The mean difference from Year 1 to Year 2 increased 21.79. The mean difference from Year 1 to Year 3 increased 26.88. There was not a statistically significant difference between Year 2 and 3. The results indicate that PBIS implementation fidelity had a statistically significant difference over time.

Office Discipline Referrals

Through this study, I sought to determine if student outcomes improved over time after PBIS implementation. I analyzed ODR rates to determine if there was a statistically significant difference over the four years included in the study. The first year of ODR

data was during the year of PBIS training and prior to full PBIS implementation. The subsequent three years are after PBIS training and implementation. I calculated ODR rates by dividing the total number of referrals per school by the total enrollment of each school. I used descriptive statistics to analyze the means and standard deviations for ODR and summarize the data in Table 3. An examination of the mean scores by implementation year indicates that the total mean scores of ODR decreased during the first year after PBIS training. However, after the initial year of PBIS implementation, the mean rates of ODR increased each year.

Table 3

Descriptive Statistics for Office Discipline Referrals

Years	N	M	SD
Year 0 (Baseline)	24	2.64	2.26
Year 1	24	2.46	1.67
Year 2	24	2.90	1.77
Year 3	24	3.92	2.92

Due to the increase in the mean rates for ODR, I examined the data to determine how many schools experienced a decrease in ODR from the previous school year. I display these data in Figure 2. In the first year after PBIS training, 14 schools experienced a decrease in the number of referrals from the previous school year. After the second year of training, 6 schools experienced a decreased amount of referrals and 8 schools decreased referrals from the previous year. One school did not have ODR data for 2016-17 as the school closed in 2015-16. One middle school did not have data for the

2013-14, 2014-15 and 2015-16 school years. District officials included the data for this particular middle school with the high school as the school has grades 6-12. District officials did not disaggregate the discipline data until the 2016-17 school year.

Figure 2. Number of Schools with Decreased ODR

I conducted the repeated measures ANOVA to determine if there was a statistically significant difference in ODR rates over the four years. The independent variable was years of implementation, and the dependent variable was office discipline referral rates calculated by total number of ODR divided by school enrollment. I conducted the repeated measures ANOVA comparing the ODR rates for the baseline year and at the end of each of the three years after PBIS implementation. The Mauchly's test revealed that I did not meet sphericity ($\chi^2(5) = 42.05, p = .01$); therefore, I used the Greenhouse-Geisser correction. There was not a statistically significant difference in ODR rates for the four years if using the more conservative alpha level ($F(1.67, 38.43) = 4.01, p < .01$). Based on the effect size measures, there was a large effect size ($\eta^2 = .15$) indicating overall practical significance for ODR rates. The ODR rates increased over

time after PBIS implementation with mean rates increasing each year. I hypothesized that ODR rates would decrease after PBIS implementation.

Out-of-School Suspension

The next outcome variable in the study was out-of-school suspensions (OSS). I calculated OSS rates by dividing the total number of suspension events per school by the total enrollment for each school to get a rate for each school. I used descriptive statistics to analyze the means and standard deviations of OSS for all four years, which I summarize in Table 4. An examination of the mean scores by implementation year indicates that the total mean rates for OSS increased each year. Each year the mean rate of OSS increased from the previous year. The mean OSS rates were highest in Year 3 after PBIS training. The standard deviation increased after the baseline year suggesting more variation in the mean OSS rates. Due to variation in mean OSS rates, I examined the number of schools, which decreased suspensions from the previous school year and summarized the data in Figure 3. The first two years after PBIS training, 8 schools experienced decreased suspensions from the previous school year. In the third year of PBIS implementation, 10 schools experienced decreased suspensions from the previous school year.

Table 4

Descriptive Statistics for Out-of-School Suspension

Years	N	M	SD
Year 0 (Baseline)	24	.29	.19
Year 1	24	.43	.25
Year 2	24	.50	.27
Year 3	24	.52	.26

Figure 3. Number of Schools with Decreased OSS

I conducted the repeated measures ANOVA to examine OSS rates both before and after PBIS training and implementation. I analyzed OSS rates for the year before training and for three years after PBIS training. The independent variable was years of PBIS implementation, and the dependent variable was out-of-school suspensions calculated as the number of suspension events per school divided by total enrollment per school. As with the previous outcome variable, I used the Mauchly's test to determine if

I met the assumption of sphericity. Since I did not meet Mauchly's test of assumption ($\chi^2(5) = 21.21, p = .01$), I used the Greenhouse-Geisser correction to determine if there was a significant difference. There was a statistically significant difference in OSS events for the four years ($F(2.11, 48.59) = 7.60, p < .01$), with OSS rates increasing each year. Additionally, there was practical significance based on the effect size measure ($\eta^2 = .25$). This large effect size indicates large overall differences in scores over the years.

I conducted post hoc analyses to determine for which years of PBIS implementation there were statistically significant differences. The post hoc analyses with Bonferroni correction indicated the significant difference occurred between the baseline year and years 2 and 3. The mean difference from the baseline year increased .22 in Year 2. Additionally, the mean difference from the baseline year increased .24 in Year 3. I hypothesized that OSS rates would decrease over the study period, instead the rates increased. There was a statistically significant increase in OSS rates from the baseline year to the second and third years of PBIS implementation.

Reading Achievement

The first academic outcome variable is reading achievement. I measured Reading achievement by using the percentage of students scoring Proficient or Distinguished on the annual state assessment. I analyzed data from the year prior to PBIS training and the three years after PBIS training. I summarize descriptive statistics for reading achievement scores by years of implementation in Table 5. The mean reading scores did not increase or decrease and remained consistent over the four years. The mean scores decreased slightly from the baseline year to Year 1 of implementation. There is an increase from Year 1 to Year 2 and then another decrease from Year 2 to Year 3. The standard

deviation from year to year does not vary greatly suggesting that the mean scores were not widely spread over the four years. Due to the flat mean scores, I examined individual school scores to determine if schools increased reading proficiency over the 4 years. I summarize the number of schools with increases in reading proficiency in Figure 4. I found that 13 schools increased the percentage of students meeting reading proficiency by at least 1% from the Baseline year to Year 1 of PBIS implementation. In the following year, 11 schools increased their reading proficiency by at least 1% in Year 2 of PBIS implementation. In the final year studied eight schools increased from the previous year.

Table 5

Descriptive Statistics for Reading Achievement

Years	N	M	SD
Year 0 (Baseline)	24	35.52	14.48
Year 1	24	34.90	15.04
Year 2	24	36.06	15.34
Year 3	24	35.03	16.68

Figure 4. Number of Schools with Increased Reading Proficiency

I conducted the repeated measures ANOVA to examine reading achievement for each year of implementation, seeking to determine if there was a statistically significant difference in reading achievement PBIS implementation. The independent variables were years of implementation, and the dependent variable was reading achievement scores as measured by the percentage of students earning a rating of proficient or distinguished on the state assessment. The Mauchly's test indicated that I did not meet the assumption of sphericity ($\chi^2(5) = 13.63, p = .02$); therefore, I used the Greenhouse-Geisser correction. There was not a statistically significant difference in the means for reading achievement during the years of the study ($p > .01$). The statistical significance findings were consistent with the descriptive statistics, which indicated very little change in reading achievement during the four-year period. Since there was no statistical significance, I did not conduct the post hoc analyses.

Mathematics Achievement

The final outcome variable I analyzed was mathematics achievement as measured by scores from the state assessment. I measured mathematics achievement by using the percentage of students scoring Proficient or Distinguished on the annual state assessment. I summarize descriptive statistics for mathematics achievement scores by years of PBIS implementation in Table 6. The mean mathematics scores did not increase or decrease significantly and remained consistent over the four years. The mean scores indicate a decrease from the baseline year to Year 1. There was a slight increase from Year 1 to Year 2, but then a decline in Year 3. The standard deviation for Year 3 is also greater than the previous years suggesting more variation in mean scores than in previous years. Due to variation in mean scores, I examined the individual scores. I summarize the

number of schools with increase math proficiency in Figure 5. In the area of mathematics, 14 schools increased the percentage of students meeting proficiency from the baseline year to Year 1 after PBIS implementation. In Year 2, 11 schools increased proficiency from the previous year and eight increased proficiency scores in Year 3. Each year of the study the number of schools with increased mathematics proficiency decreased.

Table 6. *Descriptive Statistics for Mathematics Achievement*

Years	N	M	SD
Year 0 (Baseline)	24	30.15	14.12
Year 1	24	26.99	13.80
Year 2	24	29.80	14.93
Year 3	23	25.45	15.23

Figure 5. Number of Schools with Increased Math Proficiency

As with the previous outcome measures, I conducted the repeated measures ANOVA to examine math achievement prior to PBIS training and three years after implementation to determine if there was a statistically significant difference. The independent variable was years of PBIS implementation and the dependent variable was math achievement scores as measured by the percentage of students earning a rating of proficient or distinguished on the state assessment. The Mauchly's test indicated that I did not meet the assumption of sphericity ($\chi^2(5) = 11.75, p = .04$); therefore, I used the Greenhouse-Geisser correction. There was no statistically significant difference between the means for the different years of PBIS implementation ($p > .01$). Since I did not find a statistically significant difference at the desired alpha level, I did not conduct post hoc analyses.

CHAPTER 5

DISCUSSION

The purpose of this study was to determine if secondary schools in an urban district were implementing PBIS with fidelity over time and to determine if student outcomes improved after PBIS implementation. The district that served as the context of the study was cited by the state department of education for disproportionate suspensions for African-American students with disabilities. District personnel reviewed discipline data and determined that there were disproportionate suspensions for all African-American students not just students with disabilities. District administrators required 24 schools to participate in PBIS training as part of a corrective action plan from the state department of education in the 2013-14 school year. For this study, I analyzed PBIS implementation for three years after the initial training year. Additionally, I analyzed student achievement and discipline data for the year of training and the three years immediately following PBIS training to determine if student outcomes improved during the four-year time period. Overall results indicate that PBIS implementation increased over time, but overall student outcomes did not improve.

In order to determine if PBIS is effective, one has to examine the implementation data. I examined PBIS implementation fidelity for three years after PBIS training to

determine if schools were implementing PBIS with fidelity. Results indicated that overall fidelity of PBIS implementation improved significantly over the three years and that the number of schools reaching fidelity increased each year. These results suggest PBIS implementation takes time and schools require ongoing support to sustain PBIS implementation. This is consistent with an evaluation of PBIS in the state of Florida. Childs et al. (2010) analyzed the PBIS statewide initiative and found the percentage of schools implementing PBIS Tier I increased each year of a three-year study. Furthermore, this is consistent with the conceptual framework proposed by the OSEP Center on Positive Behavioral Interventions and Supports (2005) that successful implementation and long-term sustainability of PBIS requires a multiyear investment. PBIS implementation fidelity requires time for school staff to make systemic changes to address problem behavior in schools. Since urban schools face many complex challenges, a multiyear plan is necessary to ensure sustained implementation. School and district administrators need to plan for ongoing training, coaching, and support for school staff to sustain positive behaviors.

In addition to examining PBIS implementation data, I examined office discipline referrals and out-of-school suspensions to determine if discipline outcomes improved over time. The results indicated that both office discipline referrals (ODR) and out-of-school suspensions (OSS) increased overall during the four-year period. While there was an overall increase in ODR and OSS, some schools had decreased numbers in their ODR and OSS rates from previous school years. Previous research has found a positive relationship with PBIS implementation and improved discipline outcomes (Childs et al., 2010; Freeman et al., 2016; Lassen et al., 2006). However, the results of this study are not

consistent with previous research regarding PBIS and discipline outcomes. After the initial year of PBIS implementation, both ODR and OSS rates increased. I believe that schools reverted back to old practices once district administrators faded the spotlight on their discipline data. By Year 2 and 3, there was less pressure on school administrators because district discipline data indicated some improvement in the first year after PBIS implementation. As district administrators paid less attention to school discipline data, school administrators reverted back to previous practices prompting a significant increase in OSS by Year 3 of PBIS implementation.

There are other factors besides the fade of focus on discipline data that could have prompted increased ODR and OSS rates. Schools may have started using better data collection procedures after the PBIS training. A central component of PBIS implementation is data collection and analysis. Schools may have started entering ODR and OSS information more accurately into the district database. Rates of inappropriate behavior may increase as school personnel focus on data and systematically record and organize behavioral violations in the school building (Flannery et al., 2014). Additionally, the ODR datasets demonstrated variability over the four years. These variances in mean ODR rates could be due to factors such as the size of the school or the school discipline policies. Large secondary schools may require more time to observe improved results due to needed buy-in from teachers and administrators as compared to smaller schools (Bohannon et al., 2006). Furthermore, the use of ODRs to measure student behavior is less precise than measures that are more objective i.e., direct observation. School staff members have various tolerance levels for minor problem behaviors. Student misbehavior that results in ODRs may vary from school to school

along with the fidelity of their use. There can be inconsistencies from school to school in the types of incidents that result in an office referral, which may produce variability in the data. The increased OSS rates may also be associated with improved data collection procedures. School staff may have changed their data collection procedures after PBIS training yielding more data that are accurate. Prior to PBIS training, school administrators may not have entered suspensions into the student database consistently when they students home due to behavior.

Finally, I examined academic achievement in the areas of reading and mathematics as measured by the percentage of students meeting or exceeding benchmarks on the state assessment. I analyzed academic achievement data for the year prior to PBIS training and three years after the training. While I observed some improvements in certain schools, I did not observe overall statistically significant differences in reading or mathematics achievement. The relationship between PBIS implementation and academic achievement in previous research produced mixed results with some studies indicating increased academic performance and others indicating no relationship between PBIS and academic performance. In an evaluation of PBIS in Illinois, Simonsen et al. (2012) analyzed data in over 400 schools to compare outcomes for schools who were implementing PBIS with fidelity and schools who were not. They found significant differences in math scores for schools who were implementing PBIS with fidelity but did not find significant differences in reading scores (Simonsen et al., 2012). Additionally, Bradshaw et al. (2010) conducted a longitudinal analysis of PBIS in 37 elementary schools to determine the impact on implementation fidelity, discipline outcomes, and academic achievement. They compared data for schools who were

implementing PBIS to schools who were not implementing PBIS. Their analysis indicated no difference in third-grade math, third-grade reading or fifth-grade reading (Bradshaw et al., 2010). However, they did find that fifth graders in PBIS schools demonstrated greater gains as compared to the comparison school students, but there was not a significant difference. PBIS is a framework focused on improving behavior management systems rather than academic outcomes. The relationship between PBIS implementation and academic outcomes is a result of changes in behavior problems and may take longer to observe significant differences in academic outcomes.

The PBIS framework outlines systems and practices school staff can implement to prevent problem behavior which can lead to improved academic outcomes. I hypothesized that student outcomes would improve after PBIS implementation and did not get the anticipated results. PBIS can be a challenge to implement in urban schools with students who have high needs due to poverty, violence, limited resources or differences in languages. Furthermore, Bohanon et al. (2006) noted the following challenges to PBIS implementation in high schools within urban areas: establishing school-wide acknowledgement system; teaching expected behaviors in high schools; managing implementation logistics; enacting consistent policies; and using ODR forms to track data effectively. Students in urban areas tend to have high mobility rates, often changing schools multiple times in a school year as a result of limited resources or poverty. Many of the schools included in this study are schools with high rates of poverty and high rates of student mobility. When school staff experience new students to their buildings frequently, it may be difficult to teach the school expectations and allow for new students to adjust to a different routine. The school staff may react with exclusionary

methods instead of using preventive practices and interventions. The combination of large numbers of students in secondary schools and complex needs of students in urban schools presents a challenge to implement and sustain PBIS.

In addition to the complex needs of students in urban schools, staff turnover is another challenge to implementing PBIS. Several of the schools included in the study had changes in administration over the four year period. One particular school did not have a principal to work an entire school year during the study period. This particular school had interim principals for most of the study period as district administrators had a difficulty recruiting a principal for the school. Additionally, many of the priority schools had changes in school leadership because of continued priority status due to failure to meet state benchmarks. A major influence of implementing PBIS is the support of the school administration. Lack of consistent school leadership poses challenges to implementing PBIS. The school staff need administrators who will lead them in promoting positive behaviors in students.

Limitations

A number of limitations may have influenced the results of this study. First, there were a small number of schools included in the study. Although repeated measures ANOVA is an effective statistical procedure for trend data, the small sample of schools may have influenced statistical significance and effect sizes. Results of future studies with more schools could yield different results. Secondly, the schools included in this particular study did not elect to implement PBIS. Their participation was mandatory in response to a corrective action from the state department of education. These schools may not have been ready to implement PBIS as intended. Thirdly, this study is limited to

one school district. Although the students and schools may be similar to other urban schools in other states, the training and supports provided for PBIS may differ. Some states are further along in PBIS implementation and have systems in place to sustain implementation.

Data quality is another limitation influencing the results of the study. Due to the self-report of PBIS implementation data, caution must be used in interpreting results. The PBIS implementation data were self-report data and susceptible to unreliable reporting by school teams. It is important to acknowledge this because self-report scores have the potential for inflated scores due to staff perceptions of how they are implementing PBIS. Due to pressure regarding discipline practices, school teams may have scored themselves higher on benchmarks to indicate certain procedures were in place when in fact they were not. While there is the potential for inflated fidelity scores, I did not observe a trend of inflated scores for the schools overall. Some schools did not reach fidelity during the study period. Additionally, some schools did not report fidelity until the final year. However, I do not have conclusive evidence to indicate that the school staff did not inflate their fidelity scores. In addition to limitations with PBIS data quality, it is challenging to compare ODR and OSS data as procedures may vary from school to school. The types of incidents that prompt a referral or suspension could vary among schools. There factors that are unknown in regards to the quality of the data prompting a limitation for this study.

Finally, the school district changed fidelity measures during the study period posing threats to internal validity. In the first year of PBIS implementation, the district used the BOQ and changed to the TFI for years 2 and 3. While the BOQ and TFI have

demonstrated convergent validity (Mercer et al., 2017), there is the possibility of differences in fidelity scores due to differences in the content of response items. The TFI has 15 questions and the BOQ has 53 questions to determine if PBIS core features are in place. The BOQ has more response items to assess PBIS core features than the TFI with more than one question for most of the 15 items on the TFI. For example, the TFI has one question regarding teaching expectations and the BOQ has eight questions addressing this area. The only area in which both fidelity measures have one response item is regarding team composition. The significant increase in fidelity scores from Year 1 to Years 2 and 3 may be related to the change in items on the TFI and not due to improved implementation fidelity. The change in instruments to measure implementation fidelity is another limitation of this study.

Implications for Policy and Practice

Due to the complexities of urban schools, Utley and Sailor (2002) suggest that there are other needs that influence the implementation and responsiveness of PBIS in urban schools. Cultural responsiveness; prevention focus; collaboration in proactive, teaching-focused interventions; team-driven action planning; data-based decision making; and active participation from district leaders are all factors that can positively influence PBIS implementation in urban schools (Utley & Sailor, 2002). School administrators and staff need to be able to relate to the multiple cultural contexts of the students and families in their schools. Students in urban settings may experience trauma and may come to school displaying disruptive behavior. Teachers need to work to understand the root causes of problem behaviors and not misinterpret the behaviors as deviant. By building relationships with students and developing a sense of belonging with

students, school staff can prevent problem behaviors. Additionally, teachers should employ culturally responsive teaching practices to maximize learning opportunities for all. These factors would improve the overall culture and climate of the school, thereby reducing problem behaviors. In the district of study, the superintendent has identified culture and climate as a priority for students and staff. School and district leaders should collaborate with families and community members to develop an understanding of the culture of the students and communities they serve. In addition, they should seek their involvement in meeting the educational and social needs of students in urban environments. School and district leaders need to develop their cultural competence to foster success for their students.

Research indicates school administrators disproportionately suspend African-American students as compared to their White peers. In addition to increasing cultural competence, school staff need to acknowledge any implicit bias towards certain ethnic groups and take steps to remove inequities. The school district for this study recently adopted a racial equity plan to address ongoing inequities in academic and discipline outcomes among students of color. The district leadership committed to using diverse curriculum resources and teaching practices to reduce achievement gaps. They also committed to providing mandatory ongoing professional development for school and district staff regarding racism and implicit bias. School and district leaders must be willing to have difficult conversations regarding students of color and the history of their treatment in society and even more specifically in schools. To increase achievement for all students, school and district leaders will need to implement practices that are inclusive of all students.

In addition to cultural responsiveness, school administrators need to use a proactive approach by using their data to plan for problem behavior and develop systems to prevent problem behavior. School discipline teams should analyze their discipline data to determine where problem behaviors are occurring; identify the teachers who refer students the most; and identify the frequently suspended students. If school staff know where problem behaviors occur most frequently, they can plan for the behavior. School teams may need to remove physical barriers to improve traffic flow in hallways, reteach routines, and increase adult active supervision. School administrators should know which teachers refer students more frequently than other teachers to determine if classroom practices are aligned with the vision for positive behavior. Administrators must be willing to train, coach, and support teachers who do not display effective classroom management. Finally, school administrators must identify the students who incur the most discipline referrals and suspensions. The administrators can use their data to identify students who are in need of Tier II and Tier III interventions. Administrators cannot simply identify the students, but must also provide the interventions for the students. School staff should implement the Tier II and III interventions consistently to improve student behavior. A proactive and positive approach to discipline are necessary to support students and improve results.

The results of this study did not indicate that academic outcomes improved significantly after PBIS implementation. Teachers' instructional strategies, student motivation, and student test-taking abilities are predominant factors contributing to academic outcomes. PBIS may yield improved academic outcomes for students by reducing the rates of behavior problems in the classroom, which could increase

opportunities for learning (Scott & Barrett, 2004). While the results of the study did not indicate significant differences in academic achievement, some schools observed increases in achievement scores. As schools implement PBIS, the school teams will also need to analyze classroom procedures to determine if classroom management strategies have increased opportunities for students to learn. Additionally, school administrators will need to observe teacher practices to ensure teachers are using evidence-based practices to meet student needs. School administrators must be willing to provide ongoing support for teachers who display ineffective teaching methods for students.

The extent to which schools implement PBIS with fidelity is important for school staff, administrators, district leaders and policymakers. School leaders should view PBIS as a system to incorporate and enhance all behavioral efforts within a school and not as one more initiative. One strategy for improving the likelihood that a school will sustain implementation is to incorporate PBIS into the school improvement plan to address school climate (Warren et al., 2003). The school improvement plan could identify professional development activities, identify a team to support implementation, and serve as an example of how data may inform decision-making. Assessing fidelity and using data to inform action planning can increase sustainability and decrease the likelihood of abandoning effective practices (McIntosh, Kim, Mercer, Strickland-Cohen & Horner, 2015). School PBIS teams must use their fidelity data for continuous improvement in PBIS implementation.

Future Research

One of the outcome variables I examined was out-of-school suspension. I examined the number of suspension events as reported in the student information system

instead of the number of suspension days. The number of suspension days and the number of students contributing to the suspensions may have been more comprehensive data points for analysis. The suspension events could have prompted just one day out of school versus extended days of five or more. The number of suspension days provides more information on the number of days a student is out of school and missing instruction. Additionally, if I had looked at the number of students who were suspended this may have provided better insight into the discipline needs of the schools. The number of students suspended may have been small when compared to the total enrollment of the schools. These students may need the more intensive supports provided in PBIS Tiers II and III. Future research could focus on the number of students who are suspended to determine if it is the same students who are being suspended. Additionally, more research is needed on the number of suspension days to determine how much instructional time is lost due to suspension and the impact on students.

Data collection procedures is another area in which we need more research. While I analyzed school and district data that had been verified by district personnel, I did not examine individual school data collection procedures to determine if data collection procedures changed after PBIS training. School personnel may have made changes in their data collection procedures due to a better understanding of data collection from PBIS training. Future studies could factor in data collection procedures prior to training to determine if schools or districts made changes in their data collection procedures to define and organize their data after PBIS training. Furthermore, other data sources beyond discipline data could be examined such as attendance and student

satisfaction surveys. These data could point to whether schools are implementing positive behavioral strategies.

Future studies could focus on schools who choose to implement PBIS. District administration mandated that the schools included in this study to participate in PBIS training by the district due to their discipline data. Schools who decide to participate in PBIS training and implementation may have better results because there is a desire to learn how to make positive changes for students. If the school team is ready and willing to implement PBIS with fidelity, then outcomes may be more likely to improve. The schools included in this study did not elect to participate in PBIS training and may not have been ready to make systemic changes in supporting student behavior. Moreover, the study results suggest a need to examine both quantitative and qualitative data regarding PBIS implementation. Interviews with staff would yield more data regarding understanding and perceptions of PBIS implementation. Qualitative data may answer questions related to implementation fidelity and provide details regarding staff buy-in and administrator support. Qualitative data could provide greater insight into barriers and successes of PBIS implementation.

This study is one approach to examining PBIS implementation in schools. As PBIS implementation continues to expand across schools and districts, additional factors should be examined. This study focused on PBIS Tier I but did not consider the other tiers in the framework. Future studies should examine the number of students who require Tier II and III interventions, especially in urban settings. Students in urban settings have complex needs due to environments in which they may live. The students may require intensive supports to make positive changes in behaviors. Additionally, the staff may

require more training and technical assistance to meet the complex needs of students living in urban settings. Future studies could also examine more closely classroom PBIS implementation to determine if teachers and administrators using positive approaches to behavior. Future studies could analyze more closely teacher behaviors in the classroom environment to determine if they are teaching desired behaviors and recognizing positive behaviors. These studies could analyze teacher response to student misbehavior to determine which behaviors ultimately lead to referral or suspension. It would be helpful to include administrator practices once students are referred to analyze their practices when responding to negative behaviors. The results could provide information regarding minor behaviors and teachers' abilities to respond to minor behaviors. Additionally, the results could inform on administrator practices to determine if the focus on exclusionary discipline.

Furthermore, this study used extant data to analyze PBIS implementation fidelity and student outcomes. Future research could use a true experimental design to examine PBIS implementation fidelity. The use of self-report PBIS implementation data limits this study as previously described. With the use of external researchers measuring PBIS core features, there is less probability of inaccurate fidelity data. Algozzine et al., (2014) indicated the TFI is a more reliable instrument when completed by an external coach. The use of external evaluators for PBIS implementation can yield more accurate data because they can be more objective in their analysis. Additionally, instead of using ODR and OSS data to measure discipline future researchers should actually observe student behaviors to determine if there is an improvement after PBIS implementation. Teachers and school administrators may have biases towards different students based on previous experiences.

External researchers will not have the same context as the school staff and can observe student behavior more objectively. A true experimental design with external researchers would be a more robust study of PBIS implementation and student outcomes.

The purpose of this study was to determine if schools implemented PBIS with fidelity and if student outcomes improved over time. I concluded that there was a statistically significant increase in PBIS implementation. Although there were significant gains in PBIS implementation, the district did not reach fidelity as a whole. Additionally, there were significant increases in ODR and OSS. While some schools had decreased discipline events from year to year, there were no significant improvements districtwide. Finally, academic achievement scores did not significantly improve and remained flat. All of these factors indicate the district leaders need to examine PBIS implementation closely to identify schools requiring more support and coaching. Additionally, district leaders need to analyze discipline data to determine the student supports needed to make changes.

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APPENDIX A: Benchmarks of Quality

<p>School-wide Benchmarks of Quality: SCORING FORM (Revised)</p> <p>School Name: _____</p> <p>District: _____</p> <p>Coach's Name: _____ Date: _____</p>					
<p>STEP 1: Each team member uses the Scoring Guide to determine appropriate point value. Circle ONLY ONE response.</p> <p>STEP 2: Coach: Indicate the most frequent response of you and each of your team members. If there is a tie, report the higher score.</p>					
Critical Elements	STEP 1				
PBIS Team	1. Team has administrative support	3	2	1	0
	2. Team has regular meetings (at least monthly)		2	1	0
	3. Team has established a clear mission/purpose			1	0
Faculty Commitment	4. Faculty are aware of behavior problems across campus through regular data sharing		2	1	0
	5. Faculty involved in establishing and reviewing goals		2	1	0

	6. Faculty feedback is obtained throughout year		2	1	0
Effective Procedures for Dealing with Discipline	7. Discipline process described in narrative format or depicted in graphic format		2	1	0
	8. Discipline process includes documentation procedures			1	0
	9. Discipline referral form includes information useful in decision making		2	1	0
	10. Problem behaviors are defined	3	2	1	0
	11. Major/minor behaviors are clearly differentiated		2	1	0
	12. Suggested array of appropriate responses to major (office-managed) problem behaviors			1	0
Data Entry & Analysis Plan Established	13. Data system is used to collect and analyze ODR data	3	2	1	0
	14. Additional data collected (attendance, grades, faculty attendance, surveys) and used by PBIS Leadership Team			1	0
	15. Data analyzed by PBIS Leadership Team at least monthly		2	1	0
	16. Data shared with team and faculty monthly (minimum)		2	1	0
Expectations & Rules Developed	17. 3-5 positively stated school-wide expectations are posted around school	3	2	1	0
	18. Expectations apply to both students and staff	3	2	1	0
	19. Rules/procedures are developed and posted for specific settings (settings where data suggest they are needed)		2	1	0
	20. Rules/procedures are linked to expectations			1	0
	21. Staff are involved in development of expectations and rules/procedures		2	1	0
Reward/Recognition Program Established	22. A system of rewards has elements that are implemented consistently across campus	3	2	1	0
	23. A variety of methods are used to reward students		2	1	0
	24. Rewards are linked to expectations	3	2	1	0
	25. Rewards are varied to maintain student interest		2	1	0
	26. Ratios of acknowledgments to corrections are high	3	2	1	0
	27. Students are involved in identifying/developing incentives			1	0
	28. The system includes incentives for staff/faculty		2	1	0

Lesson Plans for Teaching Expectations/ Rules	29. A behavioral curriculum includes teaching expectations and rules/procedures		2	1	0
	30. Lessons include examples and non-examples			1	0
	31. Lessons use a variety of teaching strategies		2	1	0
	32. Lessons are embedded into subject area curriculum		2	1	0
	33. Faculty/staff and students are involved in development & delivery of behavioral curriculum			1	0
	34. Strategies to share key features of PBIS initiative with families/community are developed and implemented			1	0
Implementation Plan	35. A curriculum to teach the components of the discipline system to all staff is developed and used		2	1	0
	36. Plans for training staff how to teach expectations/rules		2	1	0
	37. A plan for teaching students expectations/rules and procedures/rewards is developed, scheduled & delivered	3	2	1	0
	38. Booster sessions for students and staff are planned, scheduled, and implemented		2	1	0
	39. Schedule for rewards/incentives for the year is planned			1	0
	40. Plans for orienting incoming staff and students are developed and implemented		2	1	0
	41. Plans for involving families/community are developed and implemented			1	0
Classroom Systems	42. Classroom rules are defined for each of the school-wide expectations and posted in classrooms		2	1	0
	43. Classroom routines and procedures are explicitly identified for activities where problems often occur		2	1	0
	44. Expected behavior routines in classroom are taught		2	1	0
	45. Classroom teachers use immediate and specific praise		2	1	0
	46. Acknowledgment of students demonstrating adherence to rules and routines occurs more frequently than acknowledgment of inappropriate behavior		2	1	0

Evaluation	47. Procedures exist for tracking classroom behavior problems		2	1	0
	48. Classrooms have a range of consequences/interventions for problem behavior that are documented and consistently delivered		2	1	0
	49. Students and staff are surveyed about PBIS		2	1	0
	50. Students and staff can identify expectations and rules		2	1	0
	51. Staff use referral process (i.e., office managed vs. teacher managed) and forms appropriately	3	2	1	0
	52. Staff use reward system appropriately	3	2	1	0
	53. Outcomes (behavior problems, attendance, etc.) are documented and used to evaluate PBIS Action Plan	3	2	1	0
<div> <div></div> <div>/ 107 = <div></div> Benchmarks Score</div> </div>					

Benchmarks of Quality TEAM SUMMARY

School _____ Date _____ Total Benchmarks Score _____

Areas of Strength

Critical Element	Description of Areas of Strength

Areas in Need of Development

Critical Element	Description of Areas in Need of Development

APPENDIX B: Tiered Fidelity Inventory Action Plan

Tier I					
Subscale	Item	Current Score	Action(s)	Person(s) Responsible	Timeline
Teams	1.1 Team Composition				
	1.2 Team Operating Procedures				
Implementation	1.3 Behavioral Expectations				
	1.4 Teaching Expectations				
	1.5 Problem Behavior Definitions				
	1.6 Discipline Policies				
	1.7 Professional Development				
	1.8 Classroom Procedures				
	1.9 Feedback and Acknowledgment				
	1.10 Faculty Involvement				

	1.11 Student/Family/Community Involvement				
Eval	1.12 Discipline Data				
Evaluation	1.13 Data-based Decision Making				
	1.14 Fidelity Data				
	1.15 Annual Evaluation				

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November 2016

REFEREED JOURNALS

BOOKS AND SYMPOSIA

INVITED PRESENTATIONS: