EXAMINATION OF THE RELATIONSHIP AMONG POSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS IMPLEMENTATION FIDELITY, SCHOOL CLIMATE, AND ACADEMIC ACHIEVEMENT

by

Kelly M. Vaillancourt

A Dissertation
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
of
Doctor of Philosophy
Education

Committee:

_____ Chair

_____

_____

_____ Program Director

_____ Dean, College of Education and Human Development

Date: _____ Fall Semester 2012
George Mason University
Fairfax, VA

Examination of the Relationship among Positive Behavioral Interventions and Supports Implementation Fidelity, School Climate, and Academic Achievement

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at George Mason University

by

Kelly Vaillancourt
Master of Arts, Certificate of Advanced Study
Appalachian State University, 2004
Bachelor of Arts
University of North Carolina at Chapel Hill, 2001

Director: Penelope Earley, Professor
College of Education and Human Development

Fall Semester 2012
George Mason University
Fairfax, VA

Dedication

This is dedicated to my urban family, who gave me unyielding support and motivation. You have been the best cheerleaders!

Acknowledgements

First, I would like to thank Dr. Penelope Earley for invaluable insight and support. Drs. Buehl and Mastropieri made me a better researcher and helped me realize that data and statistics aren't scary, and can actually be fun. I would like to thank my classmates at GMU, specifically Amanda Hartigan and Sarah Daily. I could not have asked for better study partners. My former co-workers allowed me to conduct this research in our school system and assisted in any way they could. Susan Gorin graciously granted me a temporary leave of absence to write. My colleagues at NASP encouraged me and covered for me while I was away. Erica, my best pal, biggest cheerleader, and favorite school psychologist. Dr. Jim Deni has pushed me to do great things since I was a first year graduate student in his class. Finally, to my friends and family who provided laughter, encouragement, support (and wine) when I needed it most.

Table of Contents

List of Tables

List of Figures

Abstract

EXAMINATION OF THE RELATIONSHIP AMONG POSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS, IMPLEMENTATION FIDELITY, SCHOOL CLIMATE, AND ACADEMIC ACHIEVEMENT

Kelly Vaillancourt

George Mason University, 2012

DissertationDirector: Dr. Penelope Earley

The relationship among PBIS implementation fidelity, school climate, and academic achievement was examined over a three year period. No statistically significant differences were found between schools that implement PBIS with "gold standard" fidelity and schools that implement PBIS on the variables of school climate and academic achievement over time. Data analysis did not reveal statistically significant differences in academic achievement scores for schools that implement PBIS with gold standard fidelity and those that do not. However, an overall main effect for time was revealed on the outcome variable of school climate. For both groups of schools, measures school climate increased over time with statistically significant increases found between the first and third year of implementation as well and between the second and third year of implementation. The increases in school climate were greater, in terms of mean scores of school climate surveys, for schools that implement PBIS with gold standard fidelity.

Chapter One: Introduction

The Individuals With Disabilities Education Act (IDEA) Amendments of 1997 (20 U.S.C. § 1400 *et seq*.) included the mandate for an Individualized Education Program (IEP) team to consider the use of positive behavior interventions and supports for any student whose behavior impedes his or her learning. This mandate was intended to address the negative outcomes, including high drop-out rates, associated with aversive and punitive discipline practices. The inclusion of this policy was influenced by federal and U.S. Supreme Court Cases that involved disciplinary practices used with special education students as well as emerging research documenting the negative outcomes associated with punitive discipline and the positive behavioral and academic outcomes associated with the use of positive behavioral supports. Influenced by this policy, a specific framework to incorporate positive behavioral interventions and supports for individual students as well as whole schools known as Positive Behavioral Interventions and Supports (PBIS) has emerged. PBIS is designed to address the behavioral needs of all students, not just those receiving special education services. Evaluations of this framework show positive outcomes in regards to student achievement, student behavior, and school climate; however, the research is, at times, biased and attributes these positive outcomes to PBIS without measuring fidelity of implementation.

Policy History of Positive Behavioral Interventions and Supports (PBIS)

In 1975, Education for all Handicapped Children Act (20 U.S.C. § 1400 *et seq.*) was created in response to findings from Congressional studies indicating that nearly half of the nation's eight million disabled children were not receiving appropriate educational services, and one in eight was completely excluded from the public school system. More specifically, the majority of those with unmet educational needs were children with emotional and behavioral difficulties (S. Rep. No. 94-168, 1975). The Individuals with Disabilities Education Improvement Act of 2004 (20 U.S.C. §1400 *et seq.*), which is the third significant amendment to this law, contains expanded regulations to ensure that students with one or more of 15 defined disabilities receive a Free and Appropriate Public Education (FAPE). The original version of the law, although not applicable only to students with behavioral and emotional disabilities, was created in response to reports that this population was being excluded from public education.

Evolution of Positive Behavior Interventions and Supports in IDEA

11/29/1975 -Education for all Handicapped Children Act (EHCA). In 1974, Congressional statistics indicated that 82% of children with emotional disabilities had educational needs that went unmet (S. Rep. No. 94-168, 1975**).** The Education for All Handicapped Children Act **(**EHCA), in response to reports that students with disabilities were being excluded from public schools, was designed to ensure that all students received a Free and Appropriate Public Education, regardless of their disability. Provisions included in this law were largely influenced by *Mills v .The Board of Education of the District of Columbia* (1972). As noted in the final decision of this case,

the court recognized the failure of the District of Columbia to provide publicly supported education to plaintiffs and other "exceptional" children, members of their class, and the excluding, suspending, reassigning and transferring of "exceptional" children form regular public classes without affording them due process of the law (*Mills v .The Board of Education of the District of Columbia*, 1972). The defendants argued educating these students was not possible without significant supplementary funding from Congress. The Court disagreed and found the Board of Education of the District of Columbia in violation of the Constitution of the United States as well as DC Code to provide all students with a publicly supported education. The argument of insufficient resources was not an adequate or appropriate reason to exclude children with disabilities from public education programs (*Mills v. The Board of Education of the District of Columbia*, 1972). EHCA included provisions to ensure that all students receive a Free and Appropriate Public Education, and that states will mainstream disabled children to the maximum extent possible (20 U.S.C. § 1400 *et seq.*). As a result of these policy concerns, the federal government required states to submit formal plans showing how the policies set forth in EHCA were met in order to receive federal funds to assist in educating students with disabilities. EHCA mandated an Individualized Educational Program (IEP) for every disabled student to ensure that his or her unique educational needs were being met.

EHCA to Individuals with Disabilities Education Act 1990.

Following the implementation of EHCA, students who were previously excluded due to their disability were being educated in the public school system. The subsequent increased population of students with disabilities in public schools influenced

investigations that focused on disciplinary practices employed with students identified as disabled versus students not identified as disabled. Multiple studies documented the continued use of aversive, punitive, and exclusionary measures to manage student behavior, particularly with disabled students (e.g. Ekstrom, Goertz, Pollack, & Rock, 1986; Rose, 1988). The most commonly reported responses to student misconduct included out of school suspension and detention; these techniques were more frequently used with students with disabilities. Further inquiry revealed that these techniques were used due to the reported inability of school staff to manage the behavior of children with significant behavioral disabilities (Ekstrom et al. (1986). Rose (1988) reported that although suspension and expulsion were the most frequently used disciplinary techniques, little empirical support existed regarding their effectiveness. Additionally, he noted that research did not indicate that the severity of the punishment matched the severity of the behavior infraction. Rose's study, designed to explore school disciplinary practices with handicapped learners, revealed that different disciplinary actions were used for non-handicapped students as compared to handicapped students, even if the behavioral violation was identical. He also found that behavioral expectations were vague, allowing for wide interpretation of what constituted a behavioral infraction in the school setting, which resulted in inconsistently applied discipline practices.

EHCA mandated that the individual academic needs of students with disabilities be met (20 U.S.C. § 1400 *et seq.*). As a result, research examining academic outcomes of students in special education emerged, including studies that specifically focused on high school graduation rates. An examination of academic outcomes of disabled students

revealed that 31% of students who dropped out of high school had previously been suspended (Ekstrom, et al. (1986). An extensive investigation of academic outcomes of students in special education indicated that students with disabilities were continuing to be excluded from public education via suspension and expulsion and that the drop-out rates of special education students far exceeded those of their non-disabled peers (U.S. Department of Education Office of Special Education Programs [OSEP], 1992).

The exclusion of children with disabilities was at the center of *Honig v. Doe* (1988), which was ultimately decided by the U.S. Supreme Court. This case involved two emotionally disturbed students who were suspended indefinitely for violent and disruptive conduct related to their disability. As noted in the decision of the case, the petitioner argued that local school districts retained residual authority to exclude disabled children for dangerous conduct; however, plaintiffs argued that Section 1415(e)(3) of EHA stated that the child shall remain in the current educational placement (*Honig v. Doe*, 1988). The Court ultimately sided with the plaintiffs, and in its decision, referenced *Mills v. The Board of Education of The District of Columbia* (1972) stating that it was Congressional intent to strip schools of the unilateral authority they had traditionally employed to exclude disabled students from school due to behaviors that result from their disability (*Honig v. Doe,* 1988).

1/23/1990: Education for All Handicapped Children Act Amendments of 1990, or Individuals with Disabilities Education Act (IDEA)

In 1990, EHCA was amended to extend programs of the original act, partially in reference to *Honig v. Doe* (1988). The most relevant revision as it relates to this policy is

the mandate that a student will receive a free and appropriate public education in the least restrictive environment. The Individuals with Disabilities Education Act (IDEA) states

> to the maximum extent appropriate, children with disabilities… are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily (20 U.S.C §300.114(a)(2)).

This moved the focus of education to the individual's specific needs rather than treating disabled students as a homogeneous group. In addition, IDEA included a directive for the Secretary of Education to conduct investigations regarding program and systems improvement specifically regarding early intervention services and practices designed to integrate children with disabilities with their non-disabled peers. The revision of this law also created a national clearing house for children and youth with disabilities to collect and disseminate information with regards to programs used to educate students with disabilities. This law indicated, via direct statement, that Congress recognized not only the need to provide stronger educational protections for students with disabilities, but also recognized that further research was needed to ensure that schools were educating these students in the appropriate manner (20 U.S.C. § 1400 *et seq.*).

IDEA 1990 to IDEA 1997.

Despite greater effort to appropriately educate students with disabilities in an inclusive environment, aversive and punishing behaviors continued to be the most

frequently used behavioral management techniques. As noted by Mayer (1995) and Mayer and Sulzer-Azaroff (1991), these types of approaches for punishing problem behaviors (without a proactive support system) were associated with increases in aggression, vandalism, truancy, and dropping out. Wehlage and Rutter (1986) reported that suspension and expulsion led to dropping out and increased academic disengagement. The Congressionally mandated National Longitudinal Transition Study of Youth (NLTS) and a technical report of the data released by The U.S Department of Education Office of Special Education Programs (OSEP) in 1992 indicated that students with a special education classification of seriously emotionally disturbed were 44% more likely to drop out than their non-disabled peers. In addition to the higher incidence of drop outs among special education students, there was a higher prevalence of the use of suspensions and other aversive discipline measures used with special education students (OSEP, 1992).

A study released by the Kansas State Board of Education in 1995 (Kansas State Board of Education, 1995) revealed that students with disabilities were twice as likely to be suspended when compared to their non-disabled peers. Additionally, 87% of the students with disabilities who were suspended were identified as students with behavioral and emotional disorders and/or learning disabilities. The report noted that although students with behavior disorders comprised one percent of the state's student population, they accounted for 11% of the total number of suspensions, and it was proposed that alternative disciplinary measures be explored with these students as a way of teaching them appropriate behaviors instead of simply removing them from school. Colvin,

Kame'enui, and Sugai (1993), based on their experience working with students with behavioral difficulties, postulated that that behavior problems were an offset of the lack of social skill knowledge children with disabilities often exhibit. Horner and Billingsley (1988) analyzed antecedents that triggered the behavior as well as the consequences that followed the behavior. They revealed that when children displayed inappropriate behaviors the reactive, consequence based strategies to eliminate the undesired behavior failed to teach the student an appropriate replacement behavior that served the same outcome. As a result, students were not learning appropriate behaviors; instead, their inappropriate behaviors were being punished with aversive and ineffective measures.

Beginning in the early 1990's, new behavioral management techniques were beginning to emerge. Horner, Dunlap, Koegel, et al. (1990) stated that new 'positive approaches' were emerging in an attempt to more effectively manage students with behavioral and emotional disabilities being instructed in the general education setting. Components of these positive approaches included analyzing the function of inappropriate behaviors and designing interventions based on the function of the behavior. As the use of these techniques became more prevalent, empirically based research involving these new practices began to surface. George Sugai, along with his colleagues, began to produce a literature documenting outcomes associated with the use of positive and proactive behavior management strategies. His findings lay the foundations of what would later be known as Positive Behavioral Interventions and Supports (PBIS). In order to effectively address student behavior, Sugai and Horner (1994) noted that behavior expectations and consequences must be explicitly stated,

consistently administered, and must address a student's behavior problem in a proactive or positive way. In addition, meaningful and positive behavior support plans that addressed the underlying function of inappropriate behavior were showing promise as a way of changing behaviors in a positive manner (Tobin & Sugai, 1996). Little empirical evidence for the effectiveness of aversive discipline measures exists, and these discipline practices appear to increase students' chances of engaging in more aggressive behaviors, as well as increase the likelihood these students will drop out of school (Mayer, 1995; Mayer & Sulzer-Azaroff, 1991). Despite evidence of negative outcomes associated with aversive behavioral management techniques, these methods were used at a disproportionate rate with special education students. This trend, as well as evidence suggesting the greater likelihood of special education students to drop out of high school (Kansas State Board of Education, 1995), and emerging research on positive behavioral supports (Sugai & Horner, 1994; Sugai & Lewis, 1996; Tobin & Sugai, 1996), led to inclusion of the use of positive behavioral interventions and supports in the 1997 version of the Individuals with Disabilities Act.

Empirical evidence supporting the promising outcomes associated with positive behavioral interventions and supports influenced the 1997 revision of IDEA; however, this body of research was limited to a small group of researchers. Much of the research was conducted by George Sugai, Rob Horner, and Terry Lewis. Sugai and Horner are the co-directors of the Center for Positive Behavioral Interventions and Supports in the Office of Special Education, and since 1998, as indicated on Sugai's vita (2009) they have been awarded approximately 25 million dollars in grant money to fund this center,

now named the Technical Assistance Center on Positive Behavioral Interventions and Supports. This number does not include the numerous other grants awarded to fund research regarding the outcomes associated with positive behavioral interventions. The research that influenced inclusion of this policy was generated by a small group of people with vested interest in demonstrating strong outcomes associated with the use of positive behavioral interventions and supports. Their research does indicate positive outcomes when these methods are employed, yet there is a lack of objective research conducted by those not associated with the Technical Assistance Center on Positive Behavioral Interventions and Supports.

1/27/1997: Individuals with Disabilities Education Act Amendments of 1997 (IDEA 1997)

IDEA 1997 states that "in the case of a child whose behavior impedes his or her learning or that of others, the child's IEP team must consider, when appropriate, strategies, including positive behavioral intervention strategies and supports, to address that behavior" (20 U.S.C. § 614 (d)(3)(B)(i)). Additionally, IDEA 1997 specifically mentions the regular education teacher, as a member of the IEP team, shall participate in the development of positive behavioral interventions and strategies as well as program modifications and support for school personnel ((20 U.S.C. § 614 (d)(3)(C)). This allowed for all school staff, not just those involved with special education, to be trained in these methods. IDEA 1997 states

> such research, demonstration, and practice in special education and related disciplines have demonstrated that an effective educational system now and in the

> future must create school-based disciplinary strategies that will be used to reduce or eliminate the need to use suspension and expulsion as disciplinary options for children with disabilities (20 U.S.C. § 651(a)(6)(H)).

Congressional response to public comment on IDEA 1997 stated that 20 years of research and experience has demonstrated that the education of children with disabilities can be made more effective by providing appropriate supports in the regular classroom to such children and supporting high quality, intensive professional development for all personnel who work with such children, providing incentives for whole school approaches and pre-referral intervention, and putting forth greater effort to prevent high dropout rates among students with disabilities (34 C.F.R. p. 12415 (1999)). The use of positive behavioral intervention strategies and supports was included in the revised law to address the exclusion of students with disabilities due to unaddressed behavioral issues as well as the evidence base supporting the effectiveness of such strategies (PBS and the law, n.d., para. 2).

IDEA 1997 to present.

In spite of measures in IDEA1997 to address both disciplinary concerns and the drop-out rate among children with disabilities, a study released by the U.S Department of Education National Center for Education Statistics (NCES) indicated that approximately 50% of students with a mental health disorder over the age of 14 drop out of high school, which is more than any other recognized disability category (U.S Department of Education National Center for Education Statistics, 2001). IDEA was revised in 2004

and renamed the Individuals with Disabilities Education Improvement Act (20 U.S.C. § 1400 *et seq*). Included in the amendment is the following:

> over 25 years of research and experience has demonstrated that the education of children with disabilities can be made more effective by…providing incentives for whole-school approaches, scientifically based early reading programs, positive behavioral interventions and supports, and pre-referral interventions to reduce the need to label children as disabled in order to address their learning and behavioral needs (20 U.S.C. § 601(A)(c)(5)(F)).

This language is almost identical to what was stated in Congressional response to public comment surrounding IDEA 1997 (34 C.F.R. p 12415,1999), but alluded to the need of designing interventions for all students, including those with potential to be identified as special education students due to their behavior. Additionally, in a Congressional response dated August 14, 2006, it was stated that the "Act and the regulations placed a strong emphasis on research based preventions, including positive behavioral supports" (34 C.F.R. p 46683, 2006). As noted previously, the research that continued to influence special education law was largely generated by a small number of scholars, including George Sugai and Rob Horner, associated with the Center for Positive Behavioral Interventions and Supports.

Since the reauthorization of IDEA in 2004, the number of schools implementing this framework has increased. In October 2008 a total of 7,953 schools in 47 states, including the District of Columbia, were implementing PBIS (Spaulding, Horner, May, & Vincent, 2008). The website for the Office of Special Education Programs (OSEP)

Technical Assistance Center for Positive Behavior Interventions and Supports maintains a tracker of how many schools are implementing PBIS. As of August 2011, the website indicated 14,326 schools are implementing PBIS; this is almost double the number of schools that were implementing merely three years ago. One year later, in August 2012, this same website indicates that 16,232 schools are implementing PBIS (www.pbis.org). Political support and federal funding (see Figure 1.1) for PBIS has steadily increased. In 2012, there were two House Resolutions (H.R. 1648, 2011; H.R. 1995, 2011) being debated in the Committee on Education and the Workforce that specifically address the use of PBIS in schools. Two similar bills are being debated in the full Senate Committee on Health, Education, Labor, and Pensions (*S.* 506, 2011; S. 919, 2011). On March 10, 2011, a bill was introduced that would amend the Elementary and Secondary Education Act of 1965 (ESEA) to increase implementation of school wide positive behavioral interventions and supports (S. 541, 2011). Further discussion of the increased support for positive interventions and supports is presented in Chapter Five.

Figure 1.1. History of Federal Grant Funding for PBIS

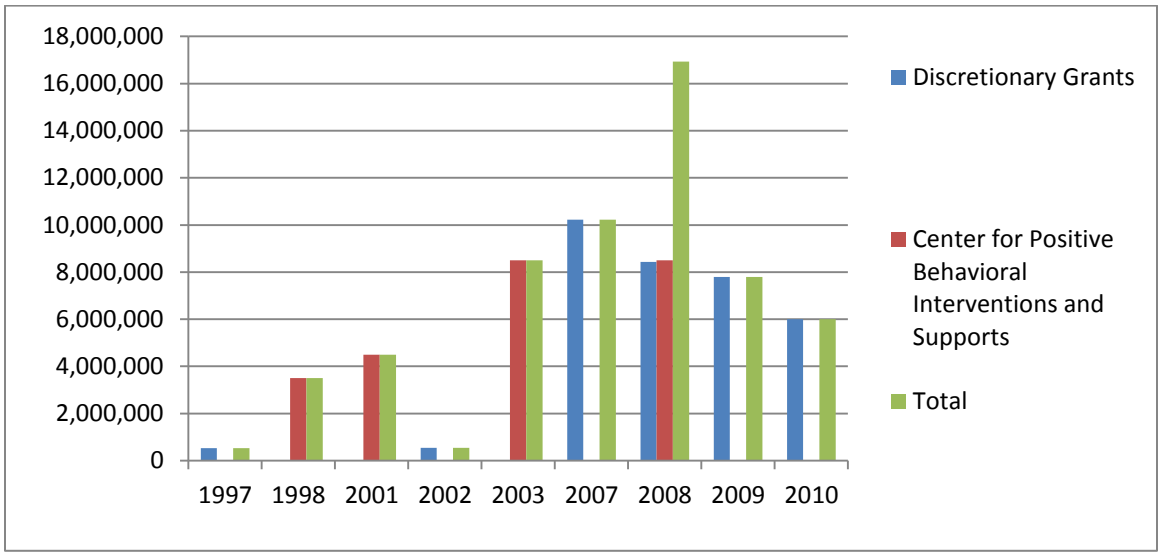

Figure 1.1. Data compiled from an OSEP grant database search conducted July 26, 2011. This graph indicates amount of discretional grants awarded by OSEP for the implementation of PBIS, the amount of funding given to the Center for PBIS, and total amount of grant funding for each year indicated. This figure does not include Race to the Top grants or grants awarded via NCLB. The OSEP Technical Center for PBIS was last funded in 2008 to last through fiscal year 2014.

What is PBIS?

Historically, behavior support in the school setting was reserved for children who frequently engaged in highly intense behaviors. However, over the past 20 years, there has been a shift towards preventative models as opposed to reactive models for all students (Horner, et al., 2009). Sprague and Horner (2007) describe PBIS as an evidence-based, data-driven framework used to reduce disciplinary incidents and support improved academic outcomes. Durand and Carr (1985) note that positive behavioral interventions and supports were initially developed as an alternative to aversive interventions used with students who had significant disabilities, although it has been applied successfully with

students with and without disabilities. PBIS is not a curriculum, but rather an application of a behaviorally based systems approach designed to improve the link between research based practices and the classroom (U.S. Department of Education Office of Special Education Programs Center on Positive Behavioral Interventions and Support [OSEP Center on PBIS], 1999a). PBIS emphasizes a continuum of scientifically-based[1] positive behavior supports, the use of data based decision making, teaching pro-social behaviors, implementing evidence-based behavioral practices with fidelity, screening all students for concerns, and monitoring all students' progress (OSEP Center on PBIS, 1999b).

At the core of PBIS is the belief that all children can learn and exhibit appropriate behavior (OSEP Center on PBIS, 1999a). Emerging research on PBIS supports the idea that that continual teaching, recognizing, and rewarding positive behavior reduces unnecessary disciplinary action and is associated with a climate of greater productivity, safety and learning (Bradshaw, Koth, Bevans, Ialongo, & Leaf, 2008). According to the Office of Special Education Center of PBIS, U.S. schools implementing PBIS are providing stronger behavioral supports to all students, and saving numerous instructional hours otherwise lost to discipline (OSEP Center on PBIS, 1999b). The framework of PBIS is best visualized with Figure 1.2 (www.pbis.org).

[1] The federal government defines scientifically-based research as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs." Six specific criteria must be met to be considered scientifically based (20 U.S.C 901(A)(B)(37)(i-vi)).

Figure 1.2. PBIS Framework

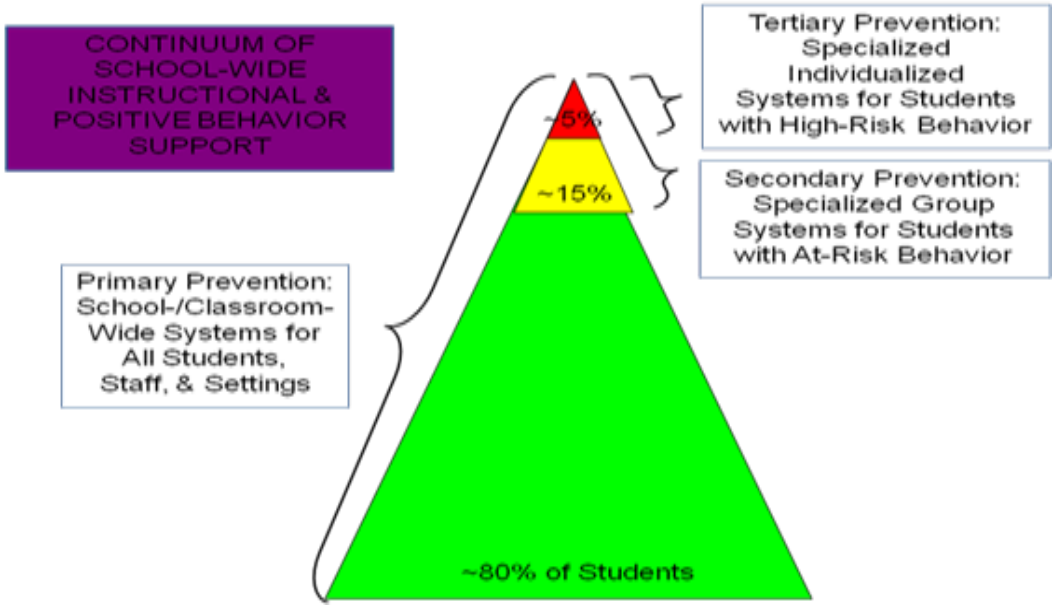

Figure 1.2. Framework of PBIS depicting the three-tiered approach to interventions and support. This figure is presented on the OSEP Center for PBIS website and is commonly used when demonstrating the framework of PBIS. It was retrieved on March 3, 2010 from www.pbis.org**.**

Primary prevention interventions are designed to reduce new cases of problem behavior. Secondary prevention is designed to reduce the number of current cases of problem behavior, and tertiary prevention addresses students with chronic and intense behavior problems. Students who are receiving secondary and tertiary intervention require a more individualized plan to increase positive behavior and to reduce negative behavior (Secondary level prevention, n.d.) A team based problem solving approach is used at all levels which enables input from multiple sources (OSEP Center on PBIS, 1999b).

Rationale and Purpose for Research

Extensive discussion and analysis of the literature as it relates to PBIS is presented in the following chapter. However, a review of the literature points to the fact that much of the research used to document both the problem of disciplinary measures in school settings, as well as the benefits of PBIS, involve those directly involved with the Office of Special Education Center for Technical Assistance for Positive Behavior Support, who partner with state districts to aid in the implementation and evaluation of PBIS in schools. Objective evaluations of PBIS implementation and the associated outcomes are emerging, but are somewhat difficult to locate. It is possible that this is, in part, due to the organizational structure of the implementation of this framework. States and districts are provided significant support from the Center for Technical Assistance for Positive Behavior Support as they evaluate PBIS in the first few years of implementation. It is possible that as states and districts become more autonomous, more objective research will be generated. Despite this, the need for empirical evidence in support, or dissent, of the outcomes associated with PBIS from those not directly involved in the creation of the framework is great.

The implementation of PBIS has been associated with a reduction in observable problematic behavior and office discipline referrals (e.g. Horner, Sugai, Todd, & Lewis-Palmer, 2005;) as well as increase in academic achievement as measured by end of grade standardized test scores (e.g. Eber, 2006). Positive gains in school climate have also been associated with PBIS (e.g. Washburn, Stowe, Cole, & Robinson, 2007). Extensive analysis of the literature associated with these variables is included in Chapter Two.

Thus, one purpose of this research was to examine the relationship between PBIS and the outcomes of academic achievement and school climate. Recent efforts at the federal level indicate efforts to improve school climate and reduce behavior concerns that emphasize the use of a proactive disciplinary approach (e.g. Lassen, Steele, & Sailor, 2006). PBIS operates under the assumption that school climate is influenced by peer interactions. Providing students with a set of common expectations, a common language, and a common set of consequences associated with defined behavioral expectations is associated with establishing a positive school climate (Lewis & Sugai, 1999). Climate data have been used as one measure of PBIS outcomes in part due to the relationship between the amount of negative student behavior and overall climate of the school. Recent research reveals that after controlling for school demographic characteristics, a positive relationship between school climate and academic achievement has been found (e.g. Kuperminc, Leadbeater, & Blatt, 2001). High achievement was associated with high teacher commitment, high expectations, emphasis on cooperation, consistency in administering rewards and punishments, consensus over curriculum and discipline, and clearly defined goals. These aspects of positive school climate are similar to key features in the PBIS framework.

Despite the positive outcomes associated with PBIS implementation, including a more positive school climate and increased academic achievement, measures of implementation fidelity are lacking in much of the published research. Frequently, it is reported that measures of PBIS implementation fidelity are collected, but no analysis regarding the relationship of treatment fidelity and outcomes attributed to PBIS is

provided (e.g. Illinois PBIS Network, 2010; NCDPI, 2010). It is not prudent to associate desired outcomes of decreased problem behavior, more positive school climate, and increased academic achievement to PBIS if there is no evidence that the PBIS framework was implemented and maintained with fidelity. Moreover, although, at times, data regarding fidelity of implementation are collected, inclusion of analysis regarding implementation fidelity is not consistent. Often data are collected during the first year of implementation, but not thereafter (e.g. Cohen, Kincaid & Childs, 2007; Scott, 2001). By examining fidelity in the first year only, the assumption is made that if PBIS is implemented with fidelity for one year, it is implemented with fidelity in subsequent years. This may be the case, but in order to accurately link outcomes with PBIS implementation, it must be demonstrated that the components of the framework were consistently implemented with fidelity. As a result of this gap in the literature, this research seeks to examine the differences between groups of schools that consistently implement PBIS with fidelity and those that do not on the outcomes of school climate and reading achievement. In addition, this relationship will be examined over time to determine if the effects on achievement and climate are sustained beyond the first year of implementation.

Research Questions and Hypotheses

Implementation of the PBIS framework has been associated with more positive school climate and increased academic performance. PBIS operates under the assumption that if student behavior improves then school climate increases, but this is assumption is theoretical in nature and has yet to be rigorously tested. Additionally PBIS

is associated with increased achievement, but the research examining the sustainability of these gains is mixed. In addition, when examining outcomes associated with PBIS, implementation fidelity over time is rarely examined; it is often assessed in the first year of implementation, but not thereafter. It is possible that one reason positive effects found after the first year of implementation do not sustain is due to a decline in fidelity of implementation. Fidelity is generally measured by an overall score on the School-wide Evaluation Tool (SET) or the Benchmarks Of Quality (BOQ), both of which will be detailed in Chapter Three. It is difficult to draw conclusions about the effectiveness of PBIS if fidelity of implementation is not routinely examined. Therefore, this study sought to answer the following research questions:

1. What is the relationship of PBIS implementation fidelity on the outcomes of school climate and student achievement?
    a. Are there differences between schools that do not consistently implement PBIS with fidelity and schools that do consistently implement PBIS on the outcomes of academic achievement and school climate?
    b. What is the effect of this relationship over time?

Based on the current body of literature, professional experience[2] and my own theoretical orientation, I expected that the measured outcomes on the variables of school climate and student achievement would serve to separate schools that fully implement PBIS and schools that do not fully implement PBIS, with higher scores being present in the schools that do fully implement PBIS. Based on the literature, I expected to find that

[2] I was previously employed at the school system in which this research took place. In addition, I served as a PBIS coach for a school that was included in this study.

the effect of PBIS implementation and school climate is stronger following the first year of implementation, but is not sustained over time. However, the literature is non-conclusive regarding the sustained effects of PBIS, and I acknowledged that this research may not provide evidence to support my hypothesis. In regard to academic achievement, I examined only the area of reading as measured by end of grade standardized test scores. Conversations with members of the Virginia Department of Education, as well as my own investigations and advice from administrators in my school district indicate that the English Standards of Learning (SOL) exam, which is given each year beginning in the third grade, has remained stable over the past five years. Scores from this exam provided the most academic data as examinations in other subject areas such as science, social studies, and writing are not administered each year. In addition, there have been numerous concerns with the level of difficulty and scoring of the Math SOL over the past few years, which provides a caution for its use in this study.

Definition of Terms

For the purpose of this study, the following terms and corresponding definitions were utilized.

Academic Achievement. Student performance on the Virginia Standards of Learning Reading exam.

School Climate: Teacher perceptions of the culture and climate of their school building as measured by the Perceptions of School Culture.

Fidelity of Implementation: The degree to which features of Positive Behavior Interventions and Supports are implemented in the school building as measured by

observers not employed in the school building as well as a combination of students, staff and administrators directly involved with Positive Behavior Interventions and Supports implementation at the school building.

Positive Behavior Interventions and Supports Implementation: Implementation is achieved when a school has actively chosen to implement Positive Behavior Interventions and Supports and has been assessed using the Schoolwide Evaluation Tool and/or the Benchmarks Of Quality.

Gold Standard Positive Behavior Interventions and Supports Implementation: Gold Standard implementation is defined by a score greater than or equal to 80 on the Benchmarks Of Quality. If the Schoolwide Evaluation Tool is used as the measure of fidelity, "Gold Standard" is defined as a score of greater than or equal to 80 on both the overall score as well as the subscale of Expectations Taught (Horner et al., 2004).

Chapter Two: Review of the Literature

A review of the literature revealed that much of the research documenting outcomes associated with Positive Behavioral Interventions and Supports (PBIS) implementation involve those directly involved with the Office of Special Education Programs Center for Technical Assistance for Positive Behavior Support, who partner with state districts to aid in the implementation and evaluation of PBIS in schools. Evaluations of PBIS implementation and the associated outcomes conducted by those not directly involved with the technical center are emerging, but the literature is currently dominated by scholars associated with the Center for Technical Assistance for Positive Behavior Support. This is, in part, due to the organizational structure of the Technical Assistance center that was depicted in Chapter One.

Positive outcomes associated with PBIS implementation include reductions in problematic behavior, increases in academic achievement, and a more positive school climate. Horner, Sugai, Todd, and Lewis-Palmer (2005), all of whom are involved with the creation of the PBIS framework, examined multiple schools and found that PBIS implementation is associated with reductions in the observable problem behavior as well as office discipline referrals. Additionally, PBIS implementation has been associated with academic gains in terms of standardized test scores (Eber, 2006). However, the number of variables associated with academic gains as well as reductions in problem behavior are great, and it is difficult to control for all of them. There is evidence to support the notion

that, when compared to schools that do not implement PBIS, greater gains are seen in the reductions of problem behaviors (Horner, Sugai, Todd,& Lewis-Palmer, 2005) as well as gains on standardized test scores (Eber, 2006). However, it is not prudent to attribute these outcomes solely to the implementation of PBIS.

The North Carolina Department of Public Instruction released an evaluation of their state PBIS program in January 2010 (North Carolina Department of Public Instruction (NCDPI), 2010). NCDPI reported that rates of office discipline referrals were lower in schools that implemented PBIS when compared to those that are not. Additionally, a consistent decline in suspensions across all grade levels in schools that implemented PBIS was reported (NCDPI, 2010). These are promising data; however, it was noted in the evaluation report that only schools who implement PBIS were required to keep office discipline referral data in a standardized manner. All schools maintain suspension data in a consistent way, but only schools that implement PBIS are required to keep data regarding visits to the office. No information was provided to indicate how schools that did not implement PBIS track office referrals, making it difficult to accurately compare office discipline referral rates among schools that implement PBIS and those that do not. A report of PBIS initiatives in Illinois indicated similar data in that, schools who implemented PBIS had, on average, a 51% reduction in out of school suspensions (Illinois PBIS Network, 2010).

In addition to providing state wide data, NCDPI (2010) presented data from one elementary school and two middle schools that are implementing PBIS. All three schools showed a decline in office referrals and an increase in the number of students who passed

both the reading and math End of Grade assessment. North Carolina also implements Response to Intervention (RtI), which is a three tiered approach, similar to PBIS, that focuses on academic instruction and supports. It was not stated if the three schools highlighted in their evaluation report also implemented RtI; nor were data regarding the overall percentage of schools implementing PBIS in conjunction with. The schools in North Carolina that implement PBIS demonstrated declines in behavioral violations and suspensions, and increased academic achievement as measured by the state End of Grade assessment; however, data analyses employed did not examine the unique relationship between PBIS implementation and these outcomes making it difficult to ascertain the unique contribution, if any, PBIS implementation had on these outcomes.

Research examining PBIS implementation typically examines the incidence of office referrals and problem behavior, student academic achievement, and at times, school climate These studies generally attribute reductions in problem behavior and increases in achievement and school climate to PBIS implementation with little to mention or examination of the host of other variables that affect student behavior and achievement or school climate. Washburn, Stowe, Cole, and Robinson (2007), based on their review of the literature, concluded that PBIS is one effective approach for developing a more positive school climate when using the school as the unit of analysis. Additionally, correlations in increased standardized reading and math scores have been associated with PBIS implementation (Washburn, Stowe, Cole, & Robinson, 2007).

As evidenced in the cited literature above, the many PBIS evaluations focus on one indicator or pathway of success, which is most often a reduction in office referrals.

This is in part due to perceived lack of psychometrically sound measures to evaluate behavioral support systems (Kern & Manz, 2004), and is problematic due to the number of variables that could influence a reduction in office referrals. However, in light of evaluations that indicate a correlation between PBIS and academic achievement, positive student behavior, and school climate (e.g. Eber, 2006; Horner, Sugai, Todd, & Lewis-Palmer, 2005; NCDPI, 2010; Washburn, Stowe, Cole, & Robinson, 2007), research is emerging that examines the specific relationship between PBIS and these outcomes using metrics alternative to the office discipline referral. The following paragraphs will evaluate the emerging research as it relates to the use of ODRs, school climate, academic achievement, and fidelity of implementation in examining effects of PBIS.

Office Discipline Referrals (ODR)

The use of office discipline referrals (ODR) to monitor student behavior is encouraged and emphasized as part of the implementation of PBIS (e.g. Clonan, McDougal, Clark &Davison, 2007; Sugai et al., 2005; Sugai, Sprague, Horner, & Walker, 2000; Tobin, Sugai & Colvin, 2000). An ODR is any instance in which a student's behavior was severe and significant enough to warrant administrator intervention. Wright and Dusek (1998) note that advantages of using ODRs to monitor student and school level outcomes include the standard format in which behaviors can be documented and evaluated to provide consultative and intervention services. However, the format for documenting student behavior is often only standardized for schools that implement PBIS making it difficult to make comparisons among schools that do and do not implement this framework. Additionally, evaluations that examine the reduction of ODRs (e.g. Illinois

PBIS Network, 2010; NCDPI, 2010) do not report if the decline in ODRs is statistically significant over time. Although reduction in ODRs is a positive outcome, data regarding the significance of the decline, or calculations of an effect size, would enhance the argument that implementation of PBIS has a substantial effect on the reduction of problematic behavior. The published research used to guide evaluation metrics is generated largely by George Sugai and Rob Horner; and examination of ODR patterns has been recommended due to their ready availability and some empirical findings that ODRs are related to poor outcomes for students (Tobin & Sugai, 1999). The underlying assumption is that a reduction in ODR indicates an increase in positive student outcomes despite only measuring the incidence of problematic behavior.

Although the examination of office discipline referral (ODR) data is widely used, there are numerous limitations to using this metric when examining outcomes associated with PBIS. These limitations include potential teacher bias when documenting student behavior, variations in teacher tolerance to student behavior, and the lack of independent or objective data related to the behavior (Morrison & Skiba, 2001; Wright & Dusek, 1998). Reduction in the incidence of ODRs has been used as the primary indicator of school success, but the use of the ODR as a primary metric of success fails to give a complete picture of school functioning and does not provide any information on other important factors that PBIS seeks to address such as achievement and climate (Lassen, Steele, & Sailor, 2006). Additionally, it has been argued that the use of ODR data to indicate school success operates under an untested assumption that a consistent linear connection exists between student behavior and the occurrence of an ODR (Kern &

Manz, 2004). Although examination of data surrounding office discipline referrals is useful, it is inappropriate to use them as a stand-alone metric of success.

School Climate

Recent efforts at the federal level indicate efforts to improve school climate and reduce behavior concerns that emphasize the use of a proactive disciplinary approach (Lassen, Steele, & Sailor, 2006). Additionally, a positive school climate has been acknowledged as a prominent factor in effective schools (Brand, Felner, Shim, Seitsinger, & Dumas, 2003). Although there is not one common definition of school climate or school culture, it often referred to as personality of the school, school environment or school culture (Johnson & Stevens, 2006). School climate has also been defined as shared beliefs that set parameters of acceptable behavior and norms for the school (e.g. Kuperminc, Leadbeater, Eammons, & Blatt, 1997). Current school climate research indicates that one component of strong school climate is the presence of a comprehensive and consistent behavior system in part due to the theoretical link between school order and academic outcomes (Chen & Weikart, 2008). Lewis and Sugai (1999) indicated that providing students with a set of common expectations, a common language, and a common set of consequences associated with defined behavioral expectations, which are key features of PBIS, are associated with establishing a positive school climate. Given the associations between student behavior and school-wide behavioral systems, and school climate, it has can be logically inferred that implementation of PBIS could influence school climate.

In many cases, a decrease in the number of behavioral infractions is associated with a more positive school climate (e.g. Bohanan et al., 2006; Johnson & Stevens, 2006; Rubin, 2004; Washburn, Stowe, Cole, & Robinson, 2007), and the premise is that if overall student behavior improves, then school culture and climate improve, and subsequently, student achievement improves (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). However, improvement in student behavior is measured primarily by office discipline referrals, which is a measure of the frequency of inappropriate behavior and not truly a measure of increased positive behaviors. Lewis, Powers, Kelk, and Newcomer (2002) and Todd, Horner, Sugai and Sprague (1999) indicate that implementation of PBIS is an effective approach to both reduce problematic student behavior and increase school climate. Although student behavior is associated with school climate (e.g. Bohanan et al., 2006), it is not entirely appropriate to use a reduction in ODRs as a stand-alone metric to make the claim that school climate has increased. There is evidence to support the notion that PBIS implementation leads to improved student behavior which leads to a more positive school climate; however, to further support this argument, metrics other than examination of ODRs as they relate to school climate should be explored.

In 2008, The Center for Child and Family Policy at Duke University examined the relationship between PBIS implementation and school climate via alternative metrics to the ODR (Center for Child and Family Policy (CCFP), 2008). The authors noted that to their knowledge, their evaluation, which included eight schools in North Carolina, was the first published evaluation to find a positive association between the implementation of

PBIS and school climate, specifically in regards to the level of school-wide behavioral support systems. However, it was noted that these positive effects on school climate seemed to drop off after the first year of implementation and examining the quality and fidelity of PBIS implementation over time was an area in need of further exploration (CCFP, 2008). Although the authors examined schools in North Carolina, the results are dissimilar from the evaluation completed by the North Carolina Department of Instruction (NCDPI, 2010). This is both in part to the data metrics used, but perhaps influenced by the objectivity with which PBIS was evaluated. The Center for Child and Family Policy, according to their self- description, is concerned with influencing sound public policy. The Center has no direct ties to the Center for Technical Assistance for PBIS and can, therefore, remain objective in their analysis and reporting of possibly unfavorable data.

The eight schools included in the study completed by CCFP were considered to be "gold-standard" and implemented the seven major components of the PBIS framework. These were listed as 1) an agreed upon approach to discipline; 2) positive statement of purpose; 3) positively stated behavior expectations; 4) procedures for teaching the expectations; 5) continuum of procedures for encouraging displays and maintenance of these expectations; 6) procedures for discouraging rule-breaking behavior; 7) procedures for monitoring and evaluating the effectiveness of the discipline system (CCFP, 2008). The authors indicated that these schools met "national criteria" but did not specify what these criteria were. The seven major program components identified align with the components measured by the Schoolwide Evaluation Tool,

which is a measure of PBIS implementation created by Rob Horner and his colleagues (Horner et al., 2004); however, it cannot be assumed that this was the metric used to determine what the authors identified as "gold standard" schools.

Information regarding school climate was obtained via web-based surveys administered to teachers at the eight identified schools with a response rate of 49%. The survey was developed by combining questions from The Effective Behavior Support Self-Assessment Survey, created by George Sugai in 2000 and the Classroom Climate Scale developed by Vessels in 1998. The resulting survey contained the following scales and corresponding alpha coefficients: School-Wide Systems (.95); Classroom-wide Systems Your Class (.94); Classroom-wide systems Other Teachers' Classes (.93); Targeted Interventions in Place (.94); School Climate (.89) (CCFP, 2008). Data regarding academic performance, grade promotion, short term suspension rates and teacher retention rates were obtained from the North Carolina Education Research Center.

Regression analyses indicated that the four predictors of 1) school-wide behavioral support systems in place; 2) classroom-wide behavioral support systems in place in your classroom; 3) classroom-wide behavioral support systems in place in others teachers classrooms; and 4) targeted interventions to support students accounted for 69% of the total variance in school climate. Of these four factors, only school-wide behavioral support systems had a positive and statistically significant relationship to school climate (CCFP, 2008). These results are based solely on teacher perceptions and do not include

administrator or student perceptions. However, their data suggest that the school-wide positive behavioral support system has the most influence on school climate.

The authors compiled data to form seven school level variables: reading score, math score, short term suspension, third and fourth grade promotion, composite performance, and one year teacher turnover rate. These data were obtained from the eight schools considered to be "gold standard" as it related to PBIS implementation. A second subsample was created from schools that ever implemented PBIS, and excluded special education schools and magnet schools (CCFP, 2008). The data that the authors collected are maintained in a standardized way across all schools, which makes for more accurate comparisons among schools.

There was no statistically significant change in outcomes over time of PBIS implementation for any of the eight "gold standard" schools. However, the authors acknowledge that power was limited due to the small sample size and the small number of time points from the implementation of PBIS and the current study. In examining the other sub-sample of schools, a statistically significant increase in overall academic performance, rates of promotion, and interestingly, increased suspensions were found after the first year, but there was no evidence indicating these results were sustained beyond the first year (CCFP, 2008). Although a small sample size likely resulted in statistical non-significance, it is possible that although there were not significant changes in outcomes over time, the effects were sustained. Yet, with the second sample of "non-gold standard" schools measured over time, all significant effects found appeared to drop off after the first year, perhaps suggesting that fidelity of implementation is a contributor

to outcomes. It appears that implementation of PBIS has positive effects on schools' levels of academic achievement and school climate, but if it is not implemented with fidelity, these effects are not sustained. Replication of this evaluation in other states and districts would be helpful in clarifying the importance of both time and implementation fidelity as it relates to PBIS and associated outcomes.

This study highlights areas in need of further research. Although specific criteria for "gold-standard" status were not provided, the factors outlined by the authors are almost identical to those measured by the Schoolwide Evaluation Tool (SET). The School-wide Evaluation Tool (SET) has been developed as a way to measure levels of PBIS implementation and fidelity. The SET contains 28 items that are organized into seven subscales that are representative of the key features of PBIS: 1) school wide behavioral expectations are defined; 2) these expectations are taught to all children in the school; 3) rewards are provided for following the expectations; 4) a consistently implemented continuum of consequences for problem behavior is put into place; 5) problem behavior patterns are monitored and the information is used for ongoing decision-making; 6) an administrator actively supports and is involved in the effort; and 7) the school district provides support to the school in the form of functional policies, staff training opportunities, and data collection opportunities. A positive and significant relationship exists between the factor of school-wide support systems and school climate in the gold standard schools. Yet, what is interesting, is that in regard to academic and behavioral outcomes, there were no statistically significant differences between the gold-standard and non-gold-standard schools. In addition, the positive effects that were

associated with PBIS implementation appear to drop off after the first year. Although levels of implementation were used to initially form the comparison groups of schools, fidelity data were not examined over time. It is possible that the positive effects associated with PBIS appear to disappear over time because due to decreases in implementation fidelity. In addition, given the positive academic and behavioral outcomes discovered in the subset of schools that were not considered "gold standard" examination of school climate in these schools would have been beneficial. Does fidelity influence the relationship between PBIS and school climate? This is a question that has yet to be fully examined.

School Climate and Achievement

Following the enactment of the No Child Left Behind Act of 2001 (20 U.S.C. § 6301 *et seq.*), strong emphasis was placed on student achievement, student safety, and school climate. A variety of factors can influence academic achievement and recent focus on the racial achievement gap has demonstrated that race and a student's socioeconomic status are predictors of student achievement. However, numerous studies indicate, that although race and SES do contribute variance in measures of student achievement, when these factors are controlled, school climate contributed the most unique variance to student achievement (e.g. Brookover et al., 1978; Hoy & Hannum, 1997; Wang, Haertel, & Walberg, 1997). Similar results were reported by Kuperminc, Leadbeater, and Blatt (2001) in their review of 40 studies of school climate. The authors reported that over half of those studies found a positive relationship between climate and achievement. The authors reported that high achievement was associated with high teacher commitment,

high expectations, emphasis on cooperation, consistency in administering rewards and punishments, consensus over curriculum and discipline, and clearly defined goals; many of these relationships remained after controlling for school characteristics.

Just as there are numerous definitions of school climate, there are numerous ways in which this construct is measured and quantified. One of the most frequent ways school climate is measured is via surveys administered to school administrators, staff, and students. Johnson and Stevens (2006) examined the relationship between student achievement and teacher perception of school climate. Utilizing structural equation modeling (SEM) to test school climate as a predictor of student achievement, it was found that school climate contributed nine percent of the variance in student achievement. However, this model did not examine the influence of student and school characteristics. A second model indicated that community context variable appeared to mediate the relationship between school climate and student achievement. Although a positive relationship remained with these variables were examined, the influence of school climate on student achievement was stronger in schools with high socio-economic status than it was for schools with lower socio-economic status. This is promising research, to be sure; however, there is need for further examination of the relationship between school climate and achievement.

Fidelity of Implementation

Implementation fidelity, like school climate, has been defined in several different ways. In intervention research, fidelity is generally defined as strategies that monitor and enhance the accuracy and consistency of an intervention to ensure that it is being

implemented as planned, to all participants over time (Bellg et al., 2004). In examining outcomes associated with school based programs, Dusenbury, Brannigan, Falco, and Hansen (2003) defined implementation fidelity as "the degree to which teachers and other program providers implement programs *as intended by the program developers"* (italics in original). Given that many of the measures used to examine fidelity of implementation of PBIS are created by those intimately involved with the creation of the framework, definition of fidelity set forth by Dusenbury and her colleagues is most closely related to this research. However, despite the subtle differences in definitions of implementation fidelity, one thing is certain: if fidelity is not measured, outcomes cannot be confidently attributed to an intervention or to a program. Despite a wealth of research documenting positive effects associated with PBIS, there is a need for the inclusion of data regarding fidelity of implementation. Concerns regarding the lack of fidelity data have been raised in research published by various scholars examining PBIS (e.g. Bradshaw et al., 2009; Lassen, Steele, & Sailor, 2006), yet despite the acknowledgement for the need of fidelity data, it is rarely evaluated in conjunction with outcomes attributed to the implementation of PBIS. Although they acknowledge that their use of fidelity data lacked specificity and was only descriptive in nature, Lassen Steele, and Sailor (2006), used fidelity data to demonstrate that levels of PBIS implementation in one middle school increased over time, while frequency of problem student behavior decreased. They report that their inclusion of fidelity data was a call for more extensive use of fidelity measures in future research.

The need for examination of implementation fidelity has been acknowledged, yet this review of the literature, as well as a literature review conducted by Cohen, Kincaid and Childs (2007) found that measures of fidelity are not consistently used in research evaluating PBIS outcomes. Most recently, Mitchell, Stormont, and Cage (2011) investigated the effectiveness of Tier 2 interventions within the PBIS framework. Their review of the literature revealed that less than one third of published research they examined measured fidelity of PBIS implementation.

In their review NCDPI (2010) and the Illinois PBIS Network (2010) reported that schools routinely collected data that measured fidelity of PBIS implementation but did not detail the way in which fidelity was measured and provided no analysis regarding the relationship of implementation fidelity and outcomes attributed to PBIS. It is not prudent to attribute desired outcomes of decreased problem behavior and increased academic achievement to PBIS if there is no evidence that the PBIS framework was implemented and maintained with fidelity. Scott (2001) and Metzler, Biglan, Rusby, and Sprague (2001) each collected data regarding fidelity during the first year of PBIS implementation, but not during subsequent years. Data regarding reduction in problem behaviors were examined over multiple years; yet, data regarding fidelity were not examined over the same time frame. By examining fidelity in the first year only, the assumption is made that if PBIS is implemented with fidelity for one year, it is implemented with fidelity in subsequent years, despite research indicates that implementation fidelity generally deteriorates over time (Bickman et al., 2009). This may be the case, but in order to accurately link outcomes with PBIS implementation, it

must be demonstrated that the components of the framework were implemented with fidelity.

It is possible that one reason for the lack of fidelity measures in education research is that it is generally disregarded by The What Works Clearinghouse (WWC) which is the only group that provides information regarding intervention and program effectiveness that is endorsed by the U.S. Department of Education. Stockard (2010) completed a systematic review of the WWC that included personal communication with leaders in the WWC. Her inquiry revealed that WWC places an emphasis on replicated findings when giving interventions and programs a high rating of effectiveness. This is problematic in that it makes the incorrect assumption that if outcomes associated with a particular intervention are replicated that the intervention must be effective. This logic does not take into account the possibility that the intervention may have been consistently implemented inappropriately, and therefore, the outcomes are not related to the intervention at all. Identifying effective interventions and programs are of great interest to policy makers and educators, and many rely on the WWC when determining new initiatives to implement in a school building, district, or entire state. The WWC indicates that PBIS is "moderately" effective in addressing student behavior (Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008); however, given their lack of attention to fidelity of implementation, their conclusion that PBIS is an effective intervention is questionable at best and further highlights the need to examine fidelity in conjunction with associated outcomes of PBIS.

When fidelity is measured, there are two common assessments, the School-Wide Evaluation Tool (Horner, et al., 2004), as previously described, and The Benchmarks of Quality (BOQ)(Kincaid, Childs, & George, 2005). Horner et al. (2004) reported that the SET meets basic psychometric criteria to be used as a measurement tool, has high inter-observer agreement, strong test-retest reliability, and is sensitive to changes made over time. The SET is designed to assess the primary prevention level of PBIS. Implementation of primary prevention changes the structure of the school from a reactive model of responding to student needs, to a comprehensive model of prevention and support. The primary prevention level of PBIS consists of the universal structures designed to support positive behaviors, prevent inappropriate behaviors, create common language, and a set of clear expectations for the school. In addition, implementation of primary prevention results in creation of a consistent system for documenting and responding to positive and negative behaviors. Primary prevention is designed to support all students in the building (Primary prevention, n.d). The Schoolwide Evaluation Tool (SET) is administered by a trained observer who through a series of observations of the school building and interviews with administrators, teachers, and students, evaluates the degree to which a school is implementing the key features of PBIS. A total SET score of 80% indicates successful implementation (Horner et al., 2004).

There are numerous critiques of the SET. Most notably, the argument by Cohen, Kincaid, and Childs (2007) is that schools can receive a score of 80% on the SET, indicating PBIS implementation, without some of the critical features of PBIS in place. When results of the SET are used as a metric of implementation fidelity, only the overall

score is used. Although schools are rated and scored in seven different areas of PBIS, the total score is computed by taking the mean of seven subscales (Horner et al, 2004). A score of 80 can be obtained even if schools are only partially implementing the key features of PBIS, which is problematic and raises the hypothesis that there are portions of the framework that are more important than others. The SET was created and validated by the same people who created the framework and measures what they believe to be the key features; it is possible that the use of this measure, and the ability to obtain a score of 80 without certain key features, is a way to promote and justify the use of the entire PBIS framework.

Kincaid, Childs, and George (2005) developed the Benchmarks of Quality (BOQ), a 53 item rating scale that measures the degree of fidelity with which a school is implementing PBIS. These 53 items correspond to 10 subscales: PBS Team, Faculty Commitment, Effective Discipline Procedures, Data Entry, Expectations and Rules, Reward System, Lesson Plans, Implementation Plans, Crisis Plans, and Evaluation. The BOQ was developed based on the critical elements of PBIS as identified by Terry Lewis and George Sugai.

Kincaid, Childs, and George (2005) report overall internal consistency measured with Cronbach's alpha of .96; individual scales range from .43 to .87. To determine concurrent validity, BOQ scores were correlated with SET scores, which indicated a correlation of .51. It was also reported that 13 of the 28 pilot schools that scored above 80% on the SET (which indicates PBIS implementation) did not score 80% on the BOQ, which suggests that the BOQ may be a better indicator of schools implementing with

high fidelity than the SET; in addition, it measures features of PBIS not measured by the SET that include faculty buy in, lesson plans, crisis plans, and evaluation.

A current review of the literature did not reveal additional studies that validated the BOQ, which would be beneficial because currently it appears that the only data regarding the validity and reliability of this measure were derived from a small sample of schools, and by the creators of the measure. Additionally, as with the SET, there is little information regarding the influence of individual subscales on the overall score. Is the full framework, as described by Sugai and Horner, necessary, or are there certain features that can be implemented in isolation that result in desired outcomes?

PBIS and Academic Achievement

The logic behind PBIS is that improved student behavior impacts school climate, and in turn, school climate impacts student achievement. State level evaluations of PBIS (e.g. NCDPI, 2010) have shown increases in achievement following the implementation of PBIS. Additionally, research published by Fleming et al. (2005), McIntosh, Chard, Boland and Horner (2006), and Nelson, Benner, Neill, and Stage (2006) indicate that improvements in student behavior and school climate were related to improvement in academic outcomes. The primary metric used to report academic achievement outcomes is student performance on standardized tests. An increase in test scores is described as increased student achievement. Academic achievement is primarily described as student performance on standardized tests, and an increase in test scores the primary metric used to indicate levels of academic achievement; however, data surrounding levels of student engagement and high school graduation rates are also used as indicators of achievement.

Pellerin's (2000) findings were consistent with earlier research by Wehlage and Rutter (1986) in that schools that focused on punitive means of discipline had higher rates of student disengagement, and ultimately drop out. Schools with more positive climates in terms of discipline practices have higher rates of student engagement, and ultimately stronger performance. Other studies (e.g. McCurdy, Mannella, & Eldridge, 2003; Metzler, Biglan, Rusby, & Sprague, 2001) reported data indicating that schools that implement PBIS demonstrate a significant reduction in office referrals as well as increases in academic achievement and social and school climate. The interconnected relationships between PBIS, improved student behavior, school climate and student achievement as well as the need to examine the specific effect that PBIS implementation has on these constructs is the basis for this research.

Conceptual Framework

Two underlying assumptions of PBIS are 1) implementing a framework that involves clear behavioral expectations for students as well as a consistent system for responding to and supporting problem behavior will improve school climate and 2) more positive school climate and school order results in improved academic achievement. Examination of these assumptions reveals positive outcomes in terms of decreased problematic behavior, increased school climate, and improved academic achievement following the implementation of PBIS. Bradshaw, Koth, Thornton, and Leaf (2009) indicated that there is some evidence that changes in school organization and culture as a result of PBIS could be a mediating factor in student achievement. In addition, despite the documented positive associations of PBIS implementation, there is a need for

examination of fidelity of implementation over time to more extensively examine the relationship of PBIS implementation to school climate and student achievement. To address these gaps in the literature, this research examines the relationship between PBIS implementation fidelity, school climate, and academic achievement. The Center for Child and Family Policy (2008) revealed different effects on school climate and student achievement between "gold standard" schools and non gold-standard schools, and these effects appeared to drop off over time. In an effort to further investigate the relationship among fidelity of implementation, school climate, and academic achievement, schools included in this research were divided into two groups: schools that consistently implement PBIS in a gold standard way and schools that do not. This allowed for more specific examination of implementation fidelity. Figure 2.1 depicts the framework for this research.

Figure 2.1. Conceptual Framework

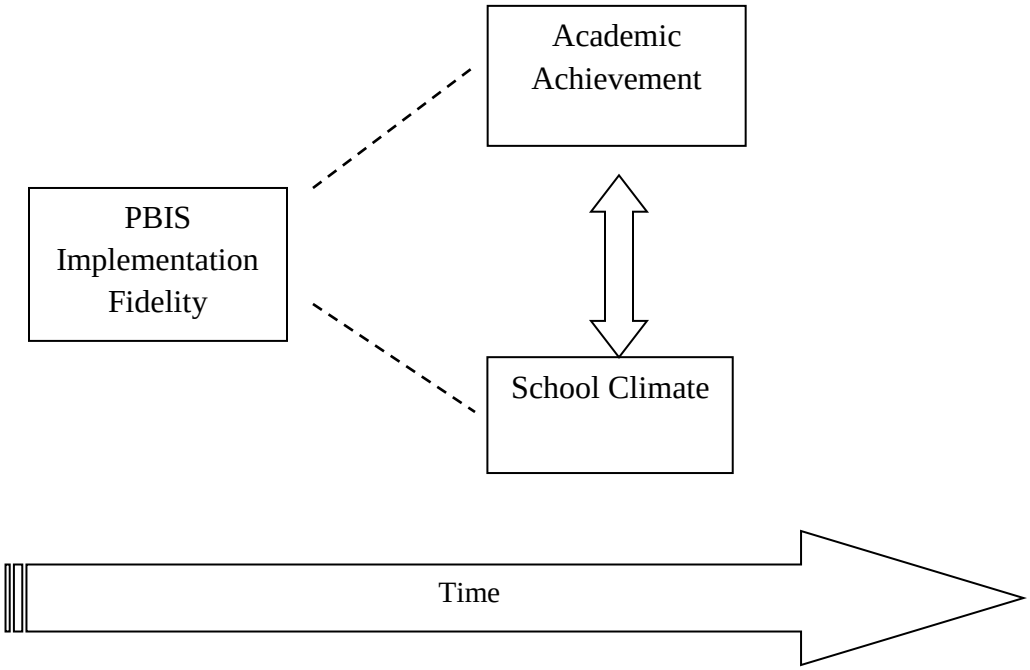

Figure 2.1. The relationship among PBIS Implementation Fidelity and Academic Achievement and School Climate is unknown, but one was hypothesized to exist. In addition, it was hypothesized that Academic Achievement and school climate interact with one another. The relationship among these variables may change over time. This research examined the following research questions:

1. What is the relationship of PBIS implementation fidelity on the outcomes of school climate and student achievement?
    a. Are there differences between schools who do not consistently implement PBIS with fidelity and schools that do consistently implement PBIS on the outcomes of academic achievement and school climate?
    b. What is the effect of this relationship over time?

Hypotheses

It was hypothesized that the data would reveal more positive indicators of teacher perception of school climate and higher scores on student examinations of reading achievement among schools who consistently implement PBIS with fidelity over time when compared to those who do not consistently implement with fidelity. In addition, it was expected that data would reveal that the effect of PBIS implementation on school climate and academic achievement is stronger during the first two years of implementation, with these effects being sustained among the schools who implement with "gold standard" fidelity. Among the schools who do not consistently implement with fidelity, the impact, if any, on school climate and student achievement was not expected to be sustained.

Data Measures

Despite the fact that the examination of office discipline data referral (ODR) data is encouraged, and typically used in PBIS research, these data were not utilized in this study. Research documents numerous limitations in using this metric (Morrison & Skiba, 2001; Wright & Dusek, 1998). Specific to this study is the lack of the standardized manner in which these data are collected[3]. The school district in which this research was conducted does not standardize the way ODR data are collected across the schools that implement PBIS; the standardization of data collection is unique to each school building. All schools are required to report the number of ODRs and suspensions; however, there is

[3] I served on the Positive Behavior Interventions and Supports Coordination Team from August 2010-September 2011 in the county in which this research was conducted. Much of my knowledge of how PBIS was implemented, how fidelity was measured, and how the school climate survey was completed is based on this experience. Information gathered via interview with district level administrators will be cited as such.

variance between schools regarding what constitutes an ODR making it difficult to make comparisons between schools. Reduction of problem behavior and increases in positive student behavior have been associated with a more positive school climate; however, given the nature of my research questions, and the differences with which these data are collected across the schools included in this study, ODR data were not examined.

School climate. The Perceptions of School Culture (POSC) (Cowley, Voelkel, Finch, & Meehan, 2005) was used to measure school climate. The school district in which this research was conducted administers this survey to each school's staff on a yearly basis. Participation is voluntary. Although individual building principals periodically distribute informal surveys to their staff, the POSC was the only standard county-wide measure of school climate available. Psychometric data of the POSC is presented in Chapter Three. The POSC is most frequently used to provide building principals and their staff information about their school; however, as stated in the technical manual, it is an appropriate measure to evaluate an entire school district, region, or state. Development of the POSC was based on a model presented in a training module created by Walsh et al. in 2003 (Cowley, Voelkel, Finch, & Meehan, 2005). This model contained the following dimensions of school culture and climate: Ability and Achievement; Effort and Efficacy; Power and Control; Physical Environment; Policies and Procedures; Vision; Mission; Distributed Accountability; Relationships. Based on analysis of field tests and pilot tests, six scales are included in the POSC: Collaborative Working Relationship; Student-Centered Vision, Mission, and Policies; Student Responsibility for Learning; Teacher Responsibility for Learning; Inviting Physical

Environment; Students and Parents as Decision Makers. The survey authors' examination relevant literature, as well as other measures of school climate and school culture and found support for the included six dimensions of school culture.

Fidelity of PBIS implementation. Two measures of implementation fidelity were used in this research. The Schoolwide Evaluation Tool (SET) and the Benchmarks of Quality (BOQ) are utilized by the county in which this research was conducted. These two measures were used to identify the level of fidelity with which schools were implementing PBIS. Further explanation of how these measures is presented in Chapter Three.

Academic achievement. Student scores on the Virginia Standards of Learning Reading assessment were used to measure academic achievement.

Chapter Three: Methodology

The purpose of this research was to answer the following questions:

1. What is the relationship of PBIS implementation fidelity on the outcomes of school climate and student achievement?
    a. Are there differences between schools who do not consistently implement PBIS with fidelity and schools that do consistently implement PBIS on the outcomes of academic achievement and school climate?
    b. What is the effect of this relationship over time?

In order to answer these questions, data regarding PBIS implementation fidelity, school climate, and student achievement were necessary. The county in which this research was conducted routinely collects these data, and Table 3.1 summarizes the data sources used to quantify each variable.

Table 3.1

Variables, Data Sources and Data Acquisition.

Variable	Data Source	Data Acquisition
Academic Achievement	SOL Examination Scores; Reading Warehouse	LCPS Data
School Climate	Perceptions of School Culture Survey Responses	LCPS Data
Implementation Fidelity	School-Wide Evaluation Tool Benchmarks of Quality	Behavior Support Coordinator

All of the data needed to examine my research questions were collected and provided to me shortly following the end of the 2010-2011 school year. Detailed descriptions of the measures and how they were administered appear later in this chapter.

Research Design

Given the nested nature of the available data, in order to examine the direction and strength of the relationships between PBIS Fidelity of Implementation, School Climate, and Academic Achievement, multilevel modeling is the most appropriate method to utilize. However, there were concerns regarding the available sample size. At the time this research was conducted, a maximum sample size of 30 schools was available given the selection criteria. Mass and Hox (2005) conducted numerous statistical simulations to determine the influence of various sample sizes on the accuracy of regression coefficients, variance estimates and standard errors. Kreft and De Leeuw (1998) note that a sample size of 50 is a frequently used in school research, with 30 being cited as the smallest acceptable number. Based on their analysis of 27,000 simulations,

Mass and Hox (2005) determined that a sample size of 30 groups resulted in standard errors that were approximately 15% too small with a non-coverage rage of 8.9% indicating that the 95% confidence interval is too short to use with this small of a sample size. When the sample size is increased to 50, non-coverage drops to 7.3%, which was deemed acceptable. These estimates resulted from simulated design characteristics, yet the authors concur with Kreft and De Leeuw in that a level two sample size of 30 could be acceptable, but is not recommended.

Given the limited size of the available sample, as well as the likelihood that some schools would not meet the selection criteria and would therefore not be included in the study, utilization of this method was not deemed appropriate. Therefore, to examine the relationship among PBIS implementation fidelity, school climate, and student achievement, a repeated measures MANOVA was determined to be an appropriate method of analysis. A MANOVA helps determine if changes in the independent variable have significant effects on the dependent variable. In this case, the use of MANOVA allowed for examination of differences in fidelity of PBIS implementation on the outcomes of school climate and student achievement. Specific to this study, a repeated measures MANOVA provided information about PBIS implementation fidelity and the dependent measures of school climate and student achievement. Although the original intent of the study was to look at both directionality and strength of the relationship among the three variables of implementation fidelity, school climate, and academic achievement, the sample size did not allow for that type of analysis. However, the use of

a repeated measures MANOVA allowed for analysis of fidelity, especially fidelity of implementation over time, which was of particular importance in this research.

Participants

Schools. The sample of schools used in this research was drawn from a suburban district in Northern Virginia. At the start of the 2010-2011 school year, 63,220 students were enrolled in the school district in which this research was conducted. At the beginning of the 2010-2011 school year, this school district operated 79 schools: 52 elementary schools (Grades K-5), 13 middle schools (Grades 6-8), 12 High Schools (9-12) and two instructional centers. Of those 79 schools, 35 schools, as well as the Juvenile Detention Center and the Young Adult Program were identified as schools implementing PBIS (S. Rynkewitz, personal communication, December 7, 2010).

Based on literature presented in Chapter One and Chapter Two, the following criteria were created for inclusion in this research.

1) The school had been implementing PBIS for at least three years, including the 2010-2011 school year to allow for analysis of change and effect over time.
2) The school had been evaluated using the Schoolwide Evaluation Tool.
3) The school had been evaluated using the Benchmarks of Quality.
4) The school must have participated in the administration of the Perceptions Of School Culture survey for each year that PBIS implementation is examined.

The final sample was smaller than anticipated. A total of 15 schools met the established criteria and are included in this study. The final sample of schools included 12 elementary schools, and three middle schools. Two elementary schools and one

middle school included in this study receive Title I funding. Title I is a formula grant authorized in the No Child Left Behind Act of 2001 (20 U.S.C, Title 1(A)) that provides funds to schools with high percentages of low income students. Initial planned data analyses did not involve examination of characteristics of individual schools on the variables of student achievement and school climate, as that is not the intent of this research. However, these data are presented in Appendix A to demonstrate the diversity of schools included in this data analysis.

In this particular school system, schools are evaluated using the Schoolwide Evaluation Tool (SET) prior to implementation of PBIS and at the end of the first year of implementation. A score of 80 on the SET indicates implementation (Horner et al., 2004). Once schools obtain a score of 80 on the SET, PBIS fidelity of implementation is measured using the Benchmarks of Quality at the end of subsequent school years. If the schools have not met the benchmark of 80 following the first year of implementation, they are evaluated using the Schoolwide Evaluation Tool halfway through the next school year and every six months after until a score of 80 is reached. This is standard practice in this particular school system, but may not reflect how fidelity of implementation of PBIS is measured in every school district.

School staff. Completion of the Perceptions of School Quality is voluntary and anonymous. Demographic data regarding the school staff that completed the school climate surveys are presented in Appendix B. It should be noted that the demographics of the survey respondents should not be considered reflective of the entire faculty and staff.

Students. Beginning in the third grade, students take the Virginia Standards of Learning Reading Examination. Data released to me did not link individual student demographic data or identifying information to a specific score. In addition, the Virginia Department of Education does not maintain information regarding specific subgroups (e.g. special education, limited English proficient) if a school had less than 50 students in these subgroups, which is the case for many of the schools included in this study. Therefore, data regarding the specific students who participated in the Virginia Standards of Learning Reading Assessment were not available. However, the intent of this research was not to examine academic achievement of specific subgroups of students in individual schools.

Measures

PBIS fidelity of implementation.

School Wide Evaluation Tool (Horner et al, 2004). The School-wide Evaluation Tool (SET) has been developed as a way to measure levels of PBIS implementation fidelity. The SET is completed by trained observers and takes approximately two hours to complete. Administration of the SET includes interviews of administrators, teachers, staff, and students. School policies, training materials, and existing data systems are also reviewed. The SET produces an overall score, with internal consistency documented at α=.96. The SET contains 28 items, organized into seven subscales that are representative of the key features of PBIS. The subscales, with corresponding with corresponding Cronbach's alpha coefficients are: 1) school wide behavioral expectations are defined (α=.64); 2) these expectations are taught to all children in the school (α=.92); 3) rewards

are provided for following the expectations (α=.78); 4) a consistently implemented continuum of consequences for problem behavior is put into place(α=.63); 5) problem behavior patterns are monitored and the information is used for ongoing decision-making (α=.85); 6) an administrator actively supports and is involved in the effort (α=.91); and 7) the school district provides support to the school in the form of functional policies, staff training opportunities, and data collection opportunities (α=.56).

Validity of the SET was measured by correlating SET scores with scores from the EBSSAS. The EBSSAS is completed by all school staff for initial and annual assessment of effective behavior support systems in their school. The survey examines the status and need for improvement of four behavior support systems: (a) school-wide discipline systems, (b) non-classroom management systems (e.g., cafeteria, hallway, playground), (c) classroom management systems, and (d) systems for individual students engaging in chronic problem behaviors. No information was provided regarding the EBASS; however, my own investigation revealed that the EBSSAS was created by some of the same individuals who created the SET. The EBSSAS contains 44 questions that each relates to one of the four systems areas (Sugai, Horner, & Todd, 2003). A Pearson *r* was calculated at .75 which was deemed sufficient to indicate that the SET was a valid instrument for measuring PBIS implementation. To determine if the SET was sensitive to implementation changes, a paired t-test comparing SET score prior to implementation and SET scores after implementation was conducted. Results t=7.63 (df=12), $p \leq .001$, indicated that, according to the authors, the SET is sensitive to implementation changes (Horner, et. al, 2004).

Administration of the SET. In the county in which this research was conducted, the SET was administered by the Behavior Support Coordinator. Administration of the SET includes a review of the school's discipline handbook, school improvement plans, office discipline referral forms, and various other information. In addition, the evaluator tours the school, interviews the administrator and randomly selects students and teachers to interview. Once the SET is scored by the Behavior Support Coordinator, a follow up meeting is scheduled with school administrators and/or members of the PBIS team to review the results. The SET is publically available at the Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports website (www.pbis.org) and is presented in Appendix C.

Benchmarks of Quality (BOQ) (Cohen, Kincaid, and Childs, Unpublished Instrument, University of Florida). The BOQ is a 53 item rating scale that measures the degree of fidelity that PBIS is being implemented within a school. It is a self- evaluation tool that takes into account multiple staff members' perceptions of PBIS implementation. This instrument produces an overall score as well as scores for ten subscales. The manual for this instrument provides the following information on these subscales, with corresponding Cronbach's alpha coefficients: PBS Team (α=.43), Faculty Commitment (α=.75), Effective Discipline Procedures (α=.81), Data Entry (α=.74), Expectations and Rules (α=.76), Reward System (α=.87), Implementation Plan (α =.79), Lesson Plans (α=.87), Crisis Plans (α=.83), and Evaluation (α=.83). Overall, the BOQ demonstrates strong reliability (α=0.96). The subscale of PBS Team has low reliability, which was not addressed in the manual. It is possible that the small number of items (three) is a

contributing factor to low reliability. Test-retest as well as inter-rater reliability is above .90.

To determine concurrent validity, total scores on the BOQ were correlated with total scores on the School-wide Evaluation Tool, which is another measure of PBIS implementation. BOQ scores, on average, were 15 points lower than scores on the SET. In addition, many schools that obtained scores above 80 on the SET failed to score about 80 on the BOQ indicating that the BOQ may more sensitive and be able to better discriminate between high fidelity of implementation and low fidelity of implementation.

Administration of the BOQ. In the county in which this research was conducted, the BOQ is completed by the PBIS team and scored by the Behavior Support Coordinator[4]. A copy of the BOQ rating form and scoring rubric is included in Appendix D and Appendix E respectively. Each school year, prior to the administration of the Standards of Learning Assessments, each PBIS coach that serves a school that will be evaluated with the BOQ is trained on how to administer and do the initial scoring. The PBIS coach distributes the Team Member Rating Form to each member of the PBIS team. The PBIS coach, based on his or her personal judgment, completes the Benchmarks of Quality Scoring Form. Finally, the PBIS Coach completes the Team Scoring Form, which takes into account all of the team members' responses as well as the coach's scoring form. This information is then given to the Behavior Support Coordinator who, using scoring software for this tool, completes the final scoring and reports this information back to the PBIS coach.

[4] For one school included in this study, I was the coordinator for the BOQ administration.

School Climate.

***Perceptions of School Culture (Cowley, Voelkel, Finch, & Meehan, 2005*).** The Perceptions of School Culture (POSC) is a survey designed to measure the perceptions of school staff on various dimensions of school culture, also referred to as school climate. Respondents to this survey include teachers, administrators, counselors, and any other staff that is employed at the school full time. Itinerant staff who serve more than one school do not complete this measure. The survey complete contains 62 Likert-type items with responses ranging from 1 (not at all) to 5 (very much). The final data are reported at the school building level. Each of the 62 questions relates to one of six subscales: Collaborative Working Relationship; Student-Centered Vision, Mission, and Policies; Student Responsibility for Learning; Teacher Responsibility for Learning; Inviting Physical Environment; Students and Parents as Decision Makers. In addition, three demographic questions regarding gender, role in the school, and years of experience were asked. Full definitions of each of the subscales are located in Appendix F. The reported Cronbach's alpha coefficient for the full instrument, as reported in the technical manual of this instrument, is α=.98. Reliability coefficients for each subscale are presented in Table 3.2. As will be discussed further, the scale of Inviting Physical Environment was not included in the calculation of the school climate variable. These five questions relate to the physical appearance and overall sanitation of the building and does not relate to systems within the school that were hypothesized to be impacted by PBIS. Implementation of this framework would not affect physical changes to the building.

Therefore, this scale, in its entirety was not included in the creation of the school climate variable.

Administration of the POSC. In the county in which this research was conducted, the POSC was first administered at the end of the 2008-2009 school year. School employees are not required to complete the POSC and participation is voluntary. Each year, prior to the administration of the Virginia Standards of Learning examinations, school principals are informed that the survey is available and an email is sent to all school faculty in the county asking for their participation. At their discretion, principals can encourage staff to participate; however, participation is completely voluntary and school administrators are not aware of individual staff member's decision to complete or not complete the survey. The POSC is completed on-line and all responses are kept confidential. The Department of Research provides each principal with a report of the results.

Table 3.2

POSC subscales and corresponding reliability coefficient.

Subscale Name	Cronbach's Alpha
Collaborative Working Relationships	.98
Student-Centered Vision, Mission, and Policies	.98
Student Responsibility for Learning	.98
Teacher Responsibility for Learning	.98
Collaborative Working Relationships	.98
Inviting Physical Environment	.93
Students and Parents as Decision Makers	.93

Office Discipline Referrals. As previously mentioned, the use of office discipline referrals (ODR) to monitor student behavior is encouraged and emphasized as part of the implementation of PBIS (e.g. Clonan, McDougal, Clark &Davison, 2007; Sugai et al., 2005; Sugai, Sprague, Horner, & Walker, 2000; Tobin, Sugai & Colvin, 2000). Reduction in the incidence of ODRs has been used as the primary indicator of school success, but the use of the ODR as a metric of success fails to give a complete picture of school functioning and does not provide any information on other important factors that PBIS seeks to address such as achievement and climate (Lassen, Steele, & Sailor, 2006). In addition, in the county in which this research was conducted, there is not a standard procedure guiding office discipline referrals. Therefore, this was not a data source used in this research.

Academic Achievement. Student performance on the Virginia Standards of Learning (SOL) Reading examination was used to measure student achievement in this

research. The SOL Reading examination is a multiple choice exam that is administered every year beginning in grade three. For elementary schools included in this study, the variable of academic achievement was created from all third, fourth, and fifth grade student scores on the Virginia SOL Reading examination. For middle schools included in this study, the variable of academic achievement was created from all sixth, seventh and eighth grade student scores on the Virginia SOL Reading examination. The Standards of Learning examinations (SOL) are administered to each student in May and June of each school year. Each year, the Virginia Department of Instruction designates a window of time in which the SOL examinations can be administered; each individual school chooses the specific day in which each SOL exam will be given. Students with severe handicaps and students who have been in the United States for two years or less do not participate in the SOL examination.

Collection Methods

HSRB approval for this research was obtained in May 2011. Subsequently, I was given limited access to the [name extracted] Public Schools Data Warehouse. For each of the schools and school years included in this research, student scores on the Virginia Standards of Learning Reading examination were extracted once they became available. A research assistant for the school system, provided me with the Perceptions of School Culture data for the schools and school years included in the sample, which were kept in a data system I was not given access to. Data regarding PBIS implementation fidelity are maintained by the Behavior Support Coordinator. The Behavior Support Coordinator provided Schoolwide Evaluation Tool (SET) and Benchmarks Of Quality (BOQ) data,

beginning with the 2007-2008 school year. Data for all schools that had implemented PBIS for at least three years were provided. All data were kept in a Microsoft Excel file and an SPSS data file. These files were maintained on a computer protected by a password and were only accessible by me. Only schools that met the selection criteria were included in the data analysis, the data for schools that were not included were deleted. Demographic data about specific subgroups of students who participated in the SOL examinations were not released.

The Schoolwide Evaluation Tool (SET) is completed at the end of a school's first year of implementation by the Behavior Support Coordinator or a trained observer appointed by the Behavior Support Coordinator. If a school reaches a score of 80 on the SET, the following year, the Benchmarks of Quality is used as the measure of fidelity. If a school does not reach a score of 80 on the SET, this measure is utilized to assess fidelity again the following year.

If a school reached a score of 80 on the SET after the first year of implementation, each subsequent year of implementation, the Benchmarks of Quality (BOQ) is used to measure implementation fidelity. The BOQ is completed in the Spring prior to the administration of the SOL assessment. Members of the school based PBIS team, administrators, and the PBIS coach complete the *Team Member Rating Form*. The PBIS coach compiles score from all the Team Member Ratings Forms and completes the Team Summary and BOQ scoring form. Final scoring is the responsibility of the Behavior Support Coordinator.

Data Analysis

A repeated measures MANOVA was conducted to answer the following research questions:

1. What is the relationship of PBIS implementation fidelity on the outcomes of school climate and student achievement?
    a. Are there differences between schools who do not consistently implement PBIS with fidelity and schools that do consistently implement PBIS on the outcomes of academic achievement and school climate?
    b. What is the effect of this relationship over time?

Original plans for this research involved examining four years of data for each school included in the sample: the year prior to implementation of PBIS as well as the first, second, and third year of implementation. This decision to examine three years of PBIS implementation was made after examining the potential sample size of available schools. At the end of the 2010-2011 school year, there were 22 schools that had implemented PBIS for 3 or more years and this potential sample size was deemed sufficient. However, after examining the available data and determining which schools met the selection criteria, the sample size was reduced to 15. In addition, it became evident that examination of school climate for the year prior to PBIS implementation was not possible for the 15 schools included in the sample, because these data did not exist. However, academic achievement data for the year prior to PBIS implantation was available. The research questions remained the same; however, as a result of the missing data, only three years of data were included in the analysis.

Analyses included a repeated-measures MANOVA to determine what, if any, overall effects were present. To examine the effect of time, effect sizes for each year also were calculated to determine if effects on school climate and student achievement were sustained, or appeared to drop off after a certain time point. If statistical significance was not found, effect sizes would still be calculated. It is possible that, due to the sample size, these data will not reveal statistically significant results. However, it is possible that small effect sizes would be revealed. This was important to examine to guide future research in this area.

Variables

Independent variable. At the heart of this research was examination of fidelity over time, therefore, Level of PBIS Implementation served as the independent variable. As previously indicated, the county in which this research was conducted utilizes two measures of PBIS implementation fidelity, the SET and the BOQ. The criteria created for inclusion in this research ensured that all schools examined were evaluated on the independent variable as well as each of the dependent variables. These schools must have been evaluated on these criteria over multiple years to allow for the examination of the effect of time. Two levels of the independent variable were formed: implementer, and gold standard implementer. Schools who met the criteria for inclusion into this study were separated into two groups. "Gold standard" implementation was defined by a score greater than or equal to 80 on the BOQ. If the SET was used as the measure of fidelity, "gold standard" was defined as a score of greater than or equal to 80 on both the overall score as well as the subscale of Expectations Taught (Horner et al, 2004). Schools that

met these criteria for each of the three years of implementation examined were assigned to the group "gold standard implementer." Schools that had implemented PBIS, but did not consistently meet these criteria were assigned to the "implementer" group. Only schools who met the criteria delineated at the beginning of this chapter were placed in one of these two groups. The composition of the two groups and SET and BOQ scores are shown in Table 3.3.

Formation of the groups in this way allowed the construct of fidelity of implementation can be analyzed. It has been argued that PBIS implementation increases school climate and student achievement. The Center for Child and Family Policy (2008) found that the effects on school climate and student achievement were different between "gold standard" schools and non- gold standard schools, and these effects appeared to drop off after the first year of implementation. This research design adds to the knowledge base surrounding the fidelity of PBIS implementation as it relates to school climate and achievement and can help determine if the effects on school climate and achievement are the same for schools who do not implement PBIS in the way the developers intended (or do not incorporate the entire framework), and those schools that do.

Table 3.3

Gold Standard and Implementer Groups.

Gold Standard	Type	Population	FR	SE
School A	Elementary	703	13	9
School B	Elementary	762	13	15
School C	Elementary	857	21	13
School D	Elementary	823	0	6
School E	Elementary	530	11	11
School F	Elementary	632	18	13
School G	Elementary	606	55	10
Implementer				
School H	Elementary	694	26	13
School I	Middle	1138	5	10
School J	Elementary	849	5	15
School K	Elementary	161	7	21
School L	Elementary	471	37	10
School M	Middle	743	9	8
School N	Middle	897	57	11
School O	Elementary	719	8	14

Information presented is reflective of the third year of PBIS implementation as posted in June 2011 on the school's website. FR=percentage of population that receives free and reduced lunch; SE=percentage of students receiving special education.

Dependent variables.

Student achievement. The variable of student achievement was created from student performance on the Virginia Standards of Learning Reading examination. This is given each year beginning in the third grade. For each school that was included in this study student scores were combined to form an average score for each grade level that was administered this exam. Each grade level average was summed and the mean of these scores became the student achievement score for the school.

School climate. The POSC contains 62 questions, each of which individually correspond to one of six subscales (Cowley, Voelkel, Finch, & Meehan, 2005). The subscale of Inviting Physical Environment was not used as it pertains to the physical aspects of the school building. Implementation of PBIS would not impact the physical structures of the school and was not included in the creation of the school climate variable. I was provided the mean response score for each question. To create the variable, a mean score for each scale, as defined by the POSC, was calculated and the average of these five scores become the metric used to measure school climate. The resulting figure ranged from 1-5. Reliability analysis is presented in Chapter Four. The 2010-2011 administration of the POSC contained two additional scales that were not part of the original instrument. For those schools in which 2010-2011 school climate data are examined, these questions were not included in the creation of the school climate variable.

Statistical Software

All data analyses were conducted using PASW Statistics 18.

Chapter 4: Data Analysis and Results

The purpose of this research was to examine the relationship of PBIS implementation fidelity on the outcomes of school climate and student achievement over time. Prior to answering the research questions, it was necessary to demonstrate correlation between the variables of academic achievement and school climate. These data are presented in Table 4.1. In addition, only certain items of the school climate survey were used in this research; therefore, it was necessary to ensure the reliability of the survey data used in this research was sufficient. One subscale was omitted due to questions that did not relate to this research. A second scale was omitted because it was not administered for each year this research examined. Only questions that were included in each of the three administrations of the POSC were used in this analysis. Reliability for the school climate data used in this data analysis are presented in Table 4.2. The subscales and corresponding survey questions are outlined in Appendix F.

Table 4.1

Zero Order Correlations for school climate and academic achievement.

Variable	1	2	3	4	5	6
(1) School Climate Year 1	--	.807*	.693*	.226	.498	.395
(2) School Climate Year 2		--	.888*	.119	.481	.386
(3) School Climate Year 3			--	.024	.348	.234
(4) Achievement Year 1				--	.864*	.831*
(5) Achievement Year 2					--	.829*
(6) Achievement Year 3						--

* $p<.001$

Although further explored in later data analysis among groups of schools that consistently implement PBIS with fidelity as compared to those that do not, it is important to note that statistically significant correlations exist between the school climate scores between year 1 and year 2 as well as year 2 to year three. Statistically significant correlations also exist between academic achievement scores from year 1 to year 2 and year 2 to year 3 of PBIS implementation. However, the correlations between school climate and academic achievement are not as strong.

Table 4.2

Cronbach's Alpha Coefficients for the Perceptions of School Culture Instrument

Subscale	2008-2009	2009-2010	2010-2011
Collaborative Working Relationships	.998	.981	.973
Student Centered Vision, Mission, and Policies	.983	.961	.983
Student Responsibility for Learning	.976	.988	.960
Teacher Responsibility for Learning	.989	.984	.985
Scales Combined	.994	.989	.993

These coefficients represent the data that was used in this data analysis.

Implementation Fidelity, School Climate and Student Achievement

In order to examine the relationship between PBIS implementation fidelity (as measured by scores on the Schoolwide Evaluation Tool and the Benchmarks of Quality) on the outcomes of school climate (measured by mean scores on the Perceptions of School Culture) and student achievement (measured by student scores on the Virginia Standards of Learning Reading examination) over time a repeated measures Multivariate Analysis of Variance was conducted. Box's Test of Equality of Covariance Matrices indicates that the assumption of homogeneity of covariance of matrices is met (p=.066). Results of the omnibus MANOVA, which are summarized in Table 4.3, do not indicate a statistically significant difference on the outcomes of school climate and student achievement over time between implementers of positive behavior intervention and supports and those who implement positive behavioral supports and interventions with gold standard fidelity, Λ=.785, F (2, 12) =1.647, p=.233, partial eta squared = .215.

Power to detect this effect is .280, which is likely the result of a small sample size. However, there is a statistically significant main effect of the within subjects factor of years of implementation, Λ =.360, F (4,10)= 4.444, p<.05, partial eta squared=.640. Power to detect this effect is .770.

Table 4.3

Summary of Omnibus Multivariate Analysis of Variance

Effect	Λ	F	df	p	η_p^2	power
Between Subjects						
Implementer	.785	1.647	2	.233	.215	.280
Within Subjects						
Year	.360	4.444	4	.025*	.640	.770
Year*Implementer	.454	3.001	4	.072	.546	.582

**=p<.05, power is measured by partial eta squared.*

The overall MANOVA did not produce statistically significant results, and Mauchly's Test of Sphericity indicated that the assumption of sphericity was not violated for the dependent variable of achievement (W=.775, χ^2=3.058, df=2, p=.217). However, the assumption was violated for the dependent variable of school climate (W=.539, χ^2=7.427, df=2, p<.024). Therefore, in order to more fully examine the effect of years of implementation between gold standard implementers and implementers on the outcomes of school climate and student achievement, univariate analysis was used.

Examination of the univariate analysis indicates that the effect of time of implementation does not yield statistically significant overall results on the dependent variable of academic achievement [F (2, 26)=1.985, p=.158]. However there is a statistically significant difference on the dependent variable of school climate [F(2,26)=7.488, p<.01]. Although there is not a statistically significant difference between the groups, there does appear to be a relationship between implementation of PBIS and school climate. Therefore, estimated marginal means and pairwise comparisons were examined as a way to gain some descriptive information that could be used to guide future research. These data are summarized in Table 4.4.

Table 4.4

Summary of Estimated Marginal Means of Academic Achievement and School Climate

Measure	Implementer	n	Year	Mean	Standard Error
Achievement	**Implementer**	8	1	492.50	5.53
			2	493.25	5.26
			3	495.00	6.65
	Gold Standard	7	1	489.14	5.98
			2	497.86	5.63
			3	490.00	7.32
	Overall Mean	15	1	490.821	4.09
			2	495.554	3.85
			3	492.500	5.01
School Climate	**Implementer**	8	1	3.69	.11
			2	3.84	.09
			3	3.93	.09
	Gold Standard	7	1	3.99	.12
			2	4.00	.10
			3	4.13	.10
	Overall Mean	15	1	3.84	.08
			2	3.91	.07
			3	4.03	.07

Possible achievement scores range from 200-600; possible climate scores range from 1-5.

Omnibus pairwise comparisons indicate a statistically significant mean increase of 4.73 points in academic achievement, as measured by scores on the Virginia Standards of Learning Reading examination between the first year of PBIS implementation and the second year of PBIS implementation (p=.02). There were overall mean increases on student achievement scores of 1.68 points from year one to year three of PBIS

implementation, and a mean decline of 3.05 points between the second and third year of implementation; however, neither of these were statistically significant.

Pairwise comparisons reveal different results in regards to school climate. There is a mean increase of .08 points on school climate measures from the end of the first year of PBIS implementation and the end of the second year of implementation. This increase is not statistically significant. There is a statistically significant mean increase of .17 points between the second and third year of implementation (p=.004) and a statistically significant increase of .20 points between the first and third year of PBIS implementation (p=.01). School climate did increase across all years of implementation, for both groups.

Although statistically significant differences between groups was not revealed in the omnibus MANOVA, examination of the marginal mean scores reveal that in regards to school climate both groups demonstrated increases in school climate measures for each year of implementation. Despite non-significance, the gold standard implementers earned higher scores on school climate surveys each year as compared to those schools that are labeled implementers. Therefore, it is useful to examine the effect size. Univariate analysis of implementation status on the outcome of academic achievement indicates an effect size, as measured by partial eta squared, of .002, which is considered very small (Dimitrov, 2009). Implementation status of PBIS on the outcomes of school climate reveals an effect size, measured by partial eta square, of .175. This means that 17.5 percent of the variance in school climate scores can be attributed to fidelity of implementation and indicates that more positive gains are seen in school climate in those schools that implement PBIS with gold standard fidelity.

Post hoc analyses. Results of the primary data analysis did not reveal statistically significant differences on the outcome variable of academic achievement after the first, second, and third year of implementation between groups that implemented PBIS with gold standard fidelity and those that did not. However, this researcher was interested in what, if any, differences in academic achievement existed between the year prior to PBIS implementation and the first three years of implementation. Academic achievement data was available for the year prior to PBIS implementation for all schools included in the planned analysis. A repeated measures MANOVA was run to examine the relationship of PBIS fidelity of implementation on the dependent variable of academic achievement over time. In this analysis, four years of academic achievement data were examined: the year prior to PBIS implementation, year one of implementation, year two of implementation, and year three of implementation. Results of the multivariate analysis of variance do not indicate a significant effect of the number of years of implementation on the outcome of academic achievement, Wilks' Λ=.588, $F(3,11)=2.57$, p=.11, partial eta squared=.412. In addition, over time, there are no significant differences between schools that implement PBIS with fidelity and those that do not, Wilks' Λ=.632, $F(3,11)=2.135$, p=.154, partial eta squared=.368. Marginal differences existed between the implementers and non-implementers in terms of average SOL scores in the year prior to implementation, (Implementer=493.63; Gold Standard=493.714). However, for both groups, academic achievement scores were higher in the year prior to implementation when compared to academic achievement scores after the first year of implementation (See Table 4.4). Examining achievement scores pre-implementation did not add new insight to the data

analysis. Rather, it further indicated that implementation of PBIS does not result in a statistically significant difference in academic achievement in years following implementation.

Author's Note

In an effort to remain transparent as possible, it should be noted that following the initial planned analyses, which are reported above, data analyses were with a different formation of groups. Based on the initial data, and further scrutiny of schools' scores on the SET and BOQ, it was revealed that two schools who were placed in the "implementer" group had met the benchmark score of 80 on the SET and the BOQ for two out of the three years this research examined. These schools missed the cut score of 80 by two points for one year that this research examined. It was hypothesized that schools could have been inflating the mean scores on measures of school climate and academic achievement for the "implementer" group. Therefore, the groups were re-formed with these two schools included in the "gold-standard" group. Although the statistical values were slightly different, the same overall and main effects were revealed, and therefore all analyses were conducted using the original formation of the groups of schools.

Summary

Results of this research indicate that there are no statistically significant differences in the outcomes of student achievement and school climate among groups that implement PBIS with gold standard fidelity and those that do not. Due to the small sample size, it is possible that low power contributed to these results. Given the two

levels of the independent variable, a sample size of 20 would have been sufficient. However, the final sample size was 15, with slightly unequal group sizes. Further research should be conducted with a much larger sample size. However, despite these results, other purposes of this research related to the effect of time on student achievement and school climate. In terms of academic achievement scores, there was not a significant increase or decrease over time for either group, and analysis reveals a small effect size of implementation fidelity on this outcome. These results could be related to a variety of factors that will be discussed in the following chapter. However, although the results of this research do not provide extensive data, it lends some support to the notion that factors in a school, other than PBIS implementation, contribute to academic achievement.

Results regarding school climate support the idea that PBIS implementation results in increased school climate, over time, for schools that implement PBIS and those that implement PBIS with gold standard fidelity. Although no statistically significant differences were found between these two groups, analyses of effect sizes reveal that implementation status contributes 17.5% of the variance in school climate scores. Schools who implement PBIS with gold standard fidelity had higher mean scores on measures of school climate than schools who simply implemented PBIS. This suggests that the school climate shows greater improvement among schools that consistently implement PBIS with fidelity as compared to schools that do not consistently implement PBIS with gold standard fidelity. Possible reasons for this and potential implications will be discussed in the following chapter.

Chapter Five: Conclusions

Interpretation of Results

Data analysis did not reveal significant differences on the outcomes of student academic achievement and school climate, over time, between schools that consistently implement PBIS with gold standard fidelity, and those that implement PBIS, but with inconsistent fidelity. PBIS implementation has been associated with academic gains in terms of standardized test scores (e.g. Eber, 2006; NCDPI, 2010); however, this research does not support that claim. The results also do not lend support to previous research that indicates that student achievement is related to school climate (e.g. Kuperminc, Leadbeater, & Blatt, 2001). In this sample, relationships between school climate and student achievement were small. There were no significant gains or losses in student achievement, from year to year, or when examining academic achievement scores from pre-implementation to the third year of implementation. This finding was particularly interesting, and somewhat unexpected, due to the results regarding school climate.

School climate research indicates that one component of strong school climate is the presence of a comprehensive and consistent behavior system in part due to the theoretical link between school order and academic outcomes (Chen & Weikart, 2008). Lewis and Sugai (1999) noted that key features of PBIS, which include providing students with a set of common expectations and consequences associated with defined

behaviors, are associated with establishing a positive school climate. Given the associations between student behavior school-wide behavioral systems, and school climate as well as the relationship between school climate and academic achievement, it has can be logically inferred that implementation of PBIS could influence school climate and student achievement. Although these data did not indicate gains in academic achievement, statistically significant gains were noted for school climate. Scores on a measure of school climate increased for both groups of schools, for each year this research examined.

An overall main effect of time was revealed which seems to indicate that it is not solely the implementation of the PBIS framework that leads to improved school climate outcomes. Efforts associated with implementation of this framework must be sustained over time. Previous research conducted by the Center for Child and Family Policy found positive associations between implementation of PBIS and school climate; however, they also found that these increases in school climate appeared to drop off after the first year. The researchers questioned if this was related to fidelity of implementation (CCFP, 2008). Examination of fidelity of implementation was a goal of the research discussed in this paper. Data analysis indicated that although school climate did increase from year one to year two of implementation in both groups, the increases were statistically significant when comparing year two to year three, as well as comparisons of year one to year three. Results of this research indicated that although school climate did increase from year one to year two of implementation in both groups, the increases were statistically significant when comparing year two to year three, as well as comparisons of

year one to year three. The effects of PBIS on school climate are not as noticeable after the first year, but these data indicate that effect do not drop off, they appear to get stronger over time. It takes time to fully change the culture of a school, and these data seem to support that.

Although no statistically significant differences in school climate were revealed between schools that implement PBIS with gold standard fidelity and those schools that do not, fidelity of implementation does appear to play a role in improving school climate. Both groups of schools examined showed increases in measures of school climate; however, school climate scores, as measured by the Perceptions of School Culture, were consistently higher for the group that implemented PBIS with gold standard fidelity. Further analysis indicates that 17.5 % of the variance in school climate can be attributed in implementation fidelity. Although further research is needed in the area of fidelity, these data indicate that outcomes, at least in the area of school climate, are stronger when the PBIS framework is implemented with gold standard fidelity.

Generalizations

There are numerous factors that prevent generalizability of these results to the broader population. These results may be useful to the suburban school system in which this research was conducted, and this research does reveal opportunities for influence further research. However, the small sample size, less than ideal research design, and lack of statistically significant findings indicate that generalizing these results beyond this local school would be unwise. Historically, evaluation of implementation efforts have focused on the elementary and middle school level (Flannery & Sugai, 2009), and this

research is not different. This research utilized data primarily from elementary schools, although three middle schools were included in the sample. At the time this research was conducted, the school district from which these data were drawn operated 52 elementary schools, 13 middle schools, and 12 high schools. Data from a high school were not included in the analysis; these results should not be applied when discussing potential benefits of PBIS implementation at this level. It would be appropriate to reference the results of this study in conjunction with a larger body of research in the context of elementary school outcomes associated with PBIS; caution should be applied when discussing the results as it pertains to middle schools.

The results of this research both lend support to and contradict previous research examining the relationship among PBIS implementation, academic achievement and school climate. Previous studies found increases in student achievement following implementation of PBIS (e.g. Eber, 2006). This analysis does not support this claim; however, due to limitations that will be discussed later, there is not strong enough evidence to refute this claim outright. In the county in which this research took place, caution should be used when making the claim that PBIS implementation results in higher academic achievement without additional data to support the argument. To this researcher's knowledge, this is the first analysis that did not reveal academic gains following implementation of PBIS.

In regard to school climate, these data support previous research that links implementation of PBIS to improved school climate (e.g. CCFP, 2008) and these results could be applied to schools who have been implementing PBIS for three years. Although

data indicates that school climate increases which each subsequent year of PBIS implementation, generalizing these findings beyond a three year time frame is cautioned. Further longitudinal research is needed to determine if improvements in school climate are sustained, or if they plateau or drop off over time.

Caution should be used when applying these results to other school districts. This research was conducted in a large, suburban district in Northern Virginia with an above average socio-economic status. Although there the majority of schools that are classified as Title 1 in this district, indicating low socio-economic status, were included in the data analysis, this school system may not be representative of a large, inner city school district with a high population of students living in poverty. Conversely, this school district is not representative of a rural school district.

Limitations

Sample. The size of the sample was less than ideal. A sample size of 20 was considered to the adequate for the data analysis chosen. However, due to missing data as well as a set of criteria that must be met to be included in this research, the sample size was reduced to 15. The available sample size also contributed to limitations with the research design. Further research in this area should employ a larger number of schools if possible.

Research design.

Existing Sources. One of the most significant limitations to this study is the fact that it is not experimental, but an analysis of secondary data. Although the data set allowed for examination of the research questions, it did not allow for continuous

collection fidelity of implementation data or the formation of a control group. Secondly, due to the fact that the data was gleaned from a secondary source, the examination of subgroups of students was not a possibility. Positive behavior interventions and supports originated in special education law. It is possible that, in terms of academic achievement, statistically significant differences when comparing the population of special education students to students in general education, as a result of implementation of PBIS. Future research should examination academic achievement among subgroups of students in schools that do and do not implement PBIS with gold-standard fidelity.

Data analysis procedures. Another significant limitations to this study is the data analysis procedures used to answer the research questions. Given the nested nature of the variables, as well as the desire to examine strength and direction of the relationship between fidelity of PBIS implementation, academic achievement, and school climate, multi-level modeling would have yielded the most robust results. Mass and Hox (2005) indicated that a sample size of 50 would be acceptable for this type of analysis. Preliminary data exploration made it clear that a sample of that size was not available. The sample size also prevented the use of multiple regression analysis to examine the relationship between distinct features of PBIS implementation and school climate. Previous research examined the relationship between specific components of PBIS and school climate. Analysis indicated that implementation of school-wide behavioral support systems, which is one component of the PBIS framework, had a positive and statistically significant relationship to school climate (CCFP, 2008). A larger sample size

would have allowed for further analysis on the relationship between specific features of PBIS, implementation fidelity of these components, and school climate.

The size of the available sample did not allow for the formation of a control group. The main goal of this research was to examine the relationship among fidelity of implementation of PBIS, academic achievement, and school climate over time. I postulated that there is a possibility that something similar to the placebo effect occurs in schools who superficially implement PBIS. Perhaps due to pressure from district administrators, a principal agrees to implement PBIS in his building despite no real intention to implement the framework in the way it was intended. This principal decides to focus only on the component of PBIS that deals with teaching and modeling appropriate behavior without providing data- driven behavioral supports to students struggling with behavior. This school continually scores low on measures of implementation fidelity; however, improvements in school climate and staff morale are evident. This is an extreme example, but does appearance of implementation have an effect on school climate? Results of this analysis did not reveal statistically significant differences on school climate scores between the gold standard implementers and the implementers. Analysis of the relationship between fidelity of implementation and school climate would have been more comprehensive, and the idea of a placebo effect could be explored if a control group is part of future research design.

Measures.

School climate. One measure of school climate was available for this research. Preliminary planning for this research included evaluation of school climate data in the

year prior to implementation of PBIS as well as three subsequent years. It was not until after HSRB approval was obtained and data were released to me that I was notified that school climate data for the 2007-2008 year were not available. Therefore, the research design had to be slightly altered and the ability to fully answer one of the research questions was diminished. In addition, the unavailability of school climate data prior to this school year further restricted the size of the available sample. Positive and significant increases in school climate over time were revealed in the data analysis, yet it is difficult to attribute how much, if any, of those gains can be attributed to PBIS implementation fidelity as no measure of school climate prior to implementation was available.

The instrument used to measure school climate is completed solely by teachers, administrators, and other classified staff (i.e. paraprofessionals, secretaries) that are employed full time at the school. However, this particular instrument does not allow for examination of responses across different roles at the school. It would be interesting to compare perceptions of school climate among administrators as compared to teachers, following the implementation of a new framework. Secondly, the data set did not allow for examination of a response rate. It is possible that the results related to school climate are based on a small percentage of staff perceptions, further limiting the ability to generalize the results. Lastly, data measuring student perception of school climate did not exist. This district has plans to administer a student school climate survey. Further research should utilize this information.

Academic achievement. This research utilized student scores on the Virginia Standards of Learning examination in reading as a measure of academic achievement.

When student achievement data were released to me there was no way to link any demographic information about a student to the particular school. Post hoc data analyses could have examined academic achievement between general education and special education students. However, this was not a possibility.

Implications

Implications for future research. The results of this study highlight the need to include examination of fidelity of implementation in research evaluating outcomes associated with PBIS. This research provides some evidence indicating that fidelity of implementation plays a role in improving school climate, but the results are by no means conclusive. The review of the literature conducted as part of the preparation for this research revealed a clear lack of research that included examination of fidelity of implementation when evaluating outcomes associated with PBIS, despite many scholars indicating the need for examination of fidelity (e.g. Bradshaw et al., 2009; Lassen, Steele, & Sailor, 2006). Since this research began, there has been an increased focus on fidelity of implementation not only in PBIS but in other multi-tiered systems of support. A colleague, who is a university professor, indicated that in the past year, fidelity of implementation has been a topic of an increasing number of doctoral dissertations. (K. Minke, August, 14, 2012). A simple search for "positive behavior interventions and supports+fidelity" in the ERIC database revealed seven peer reviewed articles published in the last 12 months that examined fidelity of implementation as part of their evaluation of PBIS. As a result, the literature review presented in Chapter 2 is rendered incomplete. Of those seven articles, however, only one contained analysis of fidelity as it relates to

outcomes of PBIS. Simonsen et al.(2012) acknowledged the lack of research that examined fidelity, and incorporated fidelity into their research of school wide PBIS in the state of Illinois. Their research revealed that when PBIS was implemented with fidelity (as indicated by a score of 80 on the SET), students demonstrated higher social skills and increased achievement on standardized tests measuring math skills when compared to schools that did not implement PBIS with fidelity. Their research revealed results similar to this research in that no significant differences in reading achievement scores were found among schools that implemented PBIS with fidelity and those that do not. It is unclear if further research will include examination of fidelity of implementation; however, a gap in the literature continues to exist and including fidelity in future research will help to provide credibility to the claims regarding positive outcomes associated with PBIS.

In addition to examining fidelity, future research should examine factors that support sustained fidelity of implementation, such as type and frequency of professional development. Bradshaw, Reinke, Brown, Bevans and Leaf (2008) found that schools who received training on PBIS implementation scored higher on the Schoolwide Evaluation Tool than schools who did not receive training. However, what has not been examined is the type of professional development that supports sustained fidelity. In the district where this research took place, schools receive training on the features of PBIS implementation before they implement the framework in their school. This training takes place over the course of two days in the summer. A half day of training is conducted six months later, followed by one day at the end of the school year. There are numerous

professional development opportunities related to PBIS offered throughout the year, but they are voluntary. School administrators offer professional development in their individual buildings several times a year on topics of their choosing. Further information about factors that help sustain implementation fidelity would provide valuable information to school and district administrators as they plan for cost effective and beneficial professional development for staff.

Results of this research also highlight the need for further longitudinal studies on PBIS and the associated outcomes of academic achievement and school climate. Further research should include a large enough sample of schools to support the use of multi-level modeling to examine the strength and direction of the relationship among specific aspects of PBIS implementation, school climate, and academic achievement. This research should also include measures of students' perceptions of school climate. Utilization of a control group is difficult in education research, and as more schools begin to implement PBIS, forming a control group will be challenging. However, to the extent possible, further research should include a control group. It is highly possible that there are numerous schools that have strong academic achievement and school climate that do not implement PBIS. More specific information about the features of PBIS that significantly influence school climate and student achievement can be gleaned when schools who do not implement PBIS.

Lastly, this research, as well as the current body of literature, focused on outcomes related to the primary level, commonly referred to as Tier 1, of PBIS implementation. Tier 1includes the universal support structures that are in place for

every student. These core features include a clear and defined set of behavioral expectations, teaching and modeling of these behaviors, reinforcement for appropriate behavior, appropriate and consistently applied consequences for inappropriate behaviors, a range of behavioral supports for minor behavioral difficulties, and the use of data to drive decision making. Tier 2 and Tier 3 involve designing, implementing, and evaluating individualized and intensive behavioral supports for challenging students. Schools are encouraged to avoid implementing Tier 2 and Tier 3 until they have consistently and successfully implemented Tier 1. At a recent meeting, George Sugai noted that there is a common misconception in the literature and in practice that Tier 1 implementation is synonymous with PBIS implementation. In addition, much of the research, this study included, highlighting positive outcomes associated with PBIS is actually examining outcomes associated with Tier 1 implementation. PBIS was never intended to be a single tier concept; however, the Technical Center for Positive Behavior Interventions and Supports only advances information and research that is sufficient for each tier (S. Skalski, August 23, 2012); as noted above the research base is focuses on Tier 1. Currently, as noted on the Technical Assistance Center for Positive Behavior Interventions and Support website (www.pbis.org), there are currently two separate randomized control trials in progress that focus on Tier 2 implementation. To date, there is no research planned or in progress that focuses on evaluation of all three tiers of implementation.

Implications for local policy. As a result of the mandates included in the No Child Left Behind Act of 2001 (20 U.S.C. § 6301 *et seq.*) was passed, student

achievement has become synonymous with standardized test scores. Because of the punitive sanctions schools face if students do not perform well on these standardized tests, schools often look for a quick fix that will provide immediate effects. The district in which this research was conducted was no exception. In fact, there is the expectation that 100% of schools in this district will be implementing PBIS by the end of 2013[5]. Although results of this research revealed increases in scores on a school climate survey following PBIS implementation, data analysis did not support the claim that academic achievement, in terms of student performance on standardized tests, improves after PBIS implementation. School districts are being forced to serve a growing student population with a shrinking budget; therefore, financial and personnel resources must be used in the most cost-effective way possible. The results of this research may cause decision makers to think twice before deciding to spend money to implement this framework if a more effective alternative is available. However, the issue of school climate as it relates to safe schools, positive conditions for learning, and anti-bullying initiatives has gained considerable attention. This research provides support for the claim that PBIS implementation is associated with improved school climate, especially when PBIS is implemented for several years. In addition, school climate scores are higher among schools that implement PBIS with fidelity. Although the literature has not addressed factors that increase and sustain fidelity, Bradshaw and her colleagues (2008) reported that schools that received training in PBIS obtained higher ratings on measures of implementation fidelity when compared to schools that did not receive training. It will be

[5] Information obtained as a member of the PBIS Administrative Team in 2011.

important for local decision makers to ensure that sufficient resources to support long term professional development are available to support new and existing initiatives to implement PBIS.

Future of PBIS

Chapter One provided a history of positive behavioral interventions and supports in federal policy. This section will attempt to predict the policy future of positive behavioral interventions and supports. It is important to note that "PBIS" refers to the three tiered framework. Positive behavioral interventions and supports include a wide range of structures and supports to support student behavior that are encompassed in the implementation of PBIS. A number of other frameworks that are very similar to PBIS and incorporate positive behavior interventions and supports exist, although they are not as widely recognized as PBIS. For example, Project Achieve helps schools to implement Positive Behavior Support Systems as part of the school turnaround process (www.projectachieve.com). Although the federal government provides funding for the Technical Assistance Center on Positive Behavior Interventions and Supports, in policy documents and proposed legislation, reference to a specific framework is avoided. Instead the phrase 'positive behavior interventions and supports' and more recently, 'multi-tiered systems of support' are used to refer to the PBIS framework without calling it such.

Despite inconclusive research examining the outcomes associated with implementation of PBIS, national education associations, civil rights groups, advocates, members of Congress, and the Department of Education continue to advocate for policies

that encourage the implementation of positive behavior interventions and supports. The inclusion of positive behavior interventions and supports was first written into statute to ensure that students with significant behavioral difficulties were properly supported in school. Now, many consider positive behavior interventions and supports as key to education reform initiatives and there is strong support to see it included in education policy that serves all students.

In 2008, approximately 8,000 schools were implementing PBIS (Spaulding, Horner, May, & Vincent, 2008). The OSEP Technical Assistance Center on Positive Behavior Interventions and Supports, as of August 2012, reports that there are 16,232 schools are implementing PBIS (www.pbis.org). In four years, the number of schools implementing this framework has doubled. Given the increased attention that PBIS, and other efforts to implement multi- tiered systems of support that utilize positive behavior interventions and supports, has received in the past year, it is likely that this number will continue to increase.

Current federal initiatives. As noted in Chapter One, a large amount of money from a combination of federal grants and funding from the American Recovery and Reinvestment Act, was made available to support the implementation of positive behavioral interventions and supports. Recently, the U.S. Department of Education released the application for the latest round of the Race to the Top grant competition. This is a competitive grant and applicants earn points for demonstrating how they plan to address a variety of competitive priorities. Although PBIS is not specifically referenced, competitive preference priority is given to applicants who propose to augment school

resources to provide additional supports to address the social, emotional, and behavioral needs of students (U.S. Department of Education, 2012a). Many states have embraced utilization of positive behavior interventions and supports as an effective policy to address bullying, school climate, the school to prison pipeline, and disproportionality and it is probable that applications for this grant will include plans to implement or expand positive behavioral interventions and supports. In addition to the large sums of federal money awarded to states and districts to implement this program, the federal government has awarded George Sugai and his colleagues three separate five year grants to operate the Technical Assistance Center on Positive Behavior Interventions and Supports. The center is currently in its 14th year of funding (Sugai & Simonson, 2012).

Positive behavioral interventions and supports was originally included in the Individuals With Disabilities Act of 1997 and remained in the reauthorization of the law in 2004 (20 U.S.C. § 1400 *et seq.).* In October 2011, the Senate Committee for Health, Education, Labor, and Pensions voted the Elementary and Secondary Education Reauthorization Act of 2011(unnumbered bill, 2011) of out committee. Section 1112 of Title 1 Part A of this proposed legislation, requires districts to outline plans to identify and implement effective methods….including positive behavioral interventions and supports. The Library of Congress maintains a website known as Thomas (www.loc.thomas.gov) in which the public and search for legislation currently being considered by Congress. A search of Thomas revealed that as of August 2012, nine bills that promote the use of positive behavioral interventions and supports have been introduced in the 112th Congress. This policy originally addressed the needs of students

who were receiving special education; however, it is now being viewed a policy that has the potential to enhance outcomes for all students.

Although the use of positive behavioral interventions and supports is encouraged in various pieces of legislation, it only remains legally mandated in IDEA. However, the United States Department of Education has promoted its use as a way to address a wide number of issues. In May 2012, the U.S. Department of Education released a resource document to help states and local school districts who were interested in revising policies and practices related to seclusion and restraint. The second page of the documents states "schools must do everything possible to ensure all children can learn…to accomplish this, schools must make every effort to structure safe environments and provide a behavioral framework, such as the use of positive behavior interventions and supports" (U.S. Department of Education, 2012b). Over the past several years the issue of bullying has been a prominent topic of discussion. To address the growing concerns surrounding the implications of bullying, the U.S. Department of Education and the U.S. Department of Health and Human Services cohosted the Federal Partners in Bullying Prevention Summit in 2010. This event brought together government officials, researchers, policymakers, and education practitioners to discuss ways to effectively address the problem of bullying in the schools. Additionally, the U.S. the Department of Education released a technical assistance memo detailing 11 key components of effective bullying policy. This document encouraged implementation of school wide supports to reduce bullying (US Department of Education, 2011). Emerging research indicates that positive behavioral interventions and supports is an effective way to decrease bullying (e.g.

Bradshaw & Waasdorp, 2009; Ross & Horner, 2009) and the OSEP Technical Assistance Center on Positive Behavior Interventions and Supports (www.pbis.org) provides a bullying prevention manual for elementary students and one for middle school students that is free and available to the public. Additionally, stopbullying.gov, operated by the Department of Health and Human Services promotes the use of positive behavior interventions and supports as an effective way to address bullying in schools.

The concept of positive behavioral interventions and supports is rooted in special education research. However, over the past several years, as noted in the previous paragraphs, PBIS has moved beyond the world of special education as is viewed as a framework that can help address a wide range of challenges preventing students from learning. Inclusion of language promoting the use of positive behavioral interventions and supports in the most recent attempt by the United States Senate to reauthorize the Elementary and Secondary Education Act of 1965 solidifies that this is no longer special education policy and demonstrates the desire of many to continue to align policies in IDEA with policies in ESEA. Positive behavior interventions and supports, as a federal policy, is only 15 years old, and it is probable that it will remain in the next reauthorization of IDEA and be included in the reauthorization of IDEA. The advancement of this policy is directly related to the work of a large number of national organizations that advocate for the use of positive behavioral interventions and supports in policy, as well as in practice.

Advocacy. Numerous national advocacy and professional organizations, that represent a diverse group of stakeholders, explicitly support positive behavior

interventions and supports in schools. The National Education Association (NEA) is the largest professional organization in the United States, and their mission is to advance public education from preschool through college. NEA is viewed as being influential to education policy decisions and they have an official policy position supporting the use of PBIS and advocated for the inclusion of positive behavioral interventions and supports in the Senate attempt to reauthorize ESEA (National Education Association, 2012). The Council for Exceptional Children represents over 35,000 professionals who work with students with disabilities. Their public policy agenda for the 112th Congress includes advocating for federal policies that result in the implementation of initiatives such as PBIS and policies that promote positive school climates. (CEC, n.d). Numerous groups that represent the interests of administrators have also made promoting positive behavior interventions and supports a priority. The National Association of State Directors of Special Education (NASDE) advocates for the use of these supports for children in special education as well as those in the general education setting and promotes the inclusion of language encouraging the use of positive behavior interventions and supports in the reauthorization of ESEA (NASDE, 2010).

Support for positive behavior interventions and supports extends beyond education groups. The Bazelon Center for Mental Health Law, which works to protect the rights of adults and children with mental disabilities, formed the School Success for All Coalition. One of the primary objectives of this coalition was to promote the adoption of school-wide positive behavior supports in the reauthorization of ESEA (School Success for All Coalition, 2010). Although this coalition included many groups affiliated

with education, it also included groups such as First Focus, whose main focus is to ensure that children and families are a priority in federal budget and policy decisions, and The Advocacy Institute who is dedicated to improve the lives of people with disabilities.

The goal of many organizations and advocacy groups is to ensure that language promoting the use of positive behavioral interventions and supports appears in the reauthorization of ESEA and future reauthorizations of IDEA. It is unclear when reauthorization of either of these bills will occur; therefore, as mentioned previously, numerous smaller pieces of legislation promoting the use of positive behavioral interventions and supports have been introduced in the 112th Congress. Senate Bill 541 (2011), the Achievement Through Prevention Act, seeks to align IDEA with ESEA and increase the implementation of positive behavior interventions and supports to improve student achievement, reduce the over-identification of students with disabilities, and reduce discipline problems. The National Association of Secondary School Principals (NASSP) does not have a specific policy or position statement regarding the use positive behavior interventions and supports. NASSP, like other organizations, maintain positions on more broad issues such as student achievement, mental and behavioral health, or improving outcomes for students with disabilities. Despite the lack of a specific policy or position statement regarding positive behavior interventions and supports NASSP, in conjunction with the following organizations, signed on to a letter dated April 12, 2011 to express support for this bill[6]: American Psychological Association, American School Counselor Association, Association of University Centers on Disability, Learning

[6] This list of co-signers is not exhaustive. Please see the letter for a full list of organizations.

Disabilities Association of America, National Association of Secondary School Principals, National Association of School Psychologists, National Center for Learning Disabilities, National Disability Rights Network, National PTA, United Neighborhood Centers for America, and the U.S Psychiatric Rehabilitation Association (NASSP, n.d). These groups represent a diverse group of constituents, including administrators, practitioners, and parents further indicating the increasing popularity of this framework across a large network of stakeholders, despite the inconclusive empirical evidence of its effectiveness.

Conclusion

Positive behavior interventions and supports originated as a policy initiative in the IDEA 1997. Since that time, a Technical Assistance Center of Positive Behavioral Interventions and Supports with 11 units across the United States was formed. The reauthorization of IDEA in 2004 maintained language relating to the use of positive behavioral supports, and similar language was included in the most recent attempt by the US Senate to reauthorize the Elementary and Secondary Education Act. Currently, over 16,000 schools are implementing the PBIS framework. Although the original intention of PBIS related to discipline and supporting challenging behavior of students with disabilities, a large number of advocacy and professional organizations promote the use of PBIS to address not only behavior, but school climate, bullying, academic achievement and drop- out prevention. Despite criticisms of the research indicating positive academic, behavior and school climate outcomes, such as a lack of objectivity in the literature, and the absence of examinations of fidelity, PBIS continues to garner

support in both policy and in practice. Results of this study do not support the argument that PBIS implementation results in increased academic achievement. The data indicate that PBIS implementation does have a positive effect on school climate; however, more longitudinal research, that incorporates examination of fidelity, is needed to support the claims that PBIS truly is the key to ensuring success for all students.

Appendices

Appendix A

Demographic data were obtained from the Virginia Department of Education School Report Card (www.p1pe.doe.virginia.gov), which publically maintains this information for the past three school years. Individual characteristics of schools were not used in initial data analysis; these data are presented to simply show the diversity schools used in this study.

Table A1
Characteristics of Schools Included in Data Analysis

	2009-2010	2010-2011
School A		
Total Population	703	667
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Did Not Make AYP
School B		
Total Population	747	763
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP
School C		
Total Population	778	814
Title 1 Status	No	No
Annual Yearly Progress Status	Did Not Make AYP	Did Not Make AYP
School D		
Total Population	953	868
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP
School E		
Total Population	554	547
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP

	2009-2010	2010-2011
School F		
Total Population	211	225
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP
School G		
Total Population	550	608
Title 1 Status	Yes	Yes
Annual Yearly Progress Status	Made AYP	Made AYP
School H		
Total Population	656	673
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP
School I		
Total Population	1059	1057
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Did Not Make AYP
School J		
Total Population	838	860
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP
School K		
Total Population	184	171
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP
	2009-2010	2010-2011
School L		
Total Population	422	426
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP
School M		
Total Population	1228	1326
Title 1 Status	No	No
Annual Yearly Progress Status	Did Not Make AYP	Did Not Make AYP

	2009-2010	2010-2011
School N		
Total Population	851	859
Title 1 Status	Yes	Yes
Annual Yearly Progress Status	Did Not Make AYP	Did Not Make AYP
School O		
Total Population	686	727
Title 1 Status	No	No
Annual Yearly Progress Status	Made AYP	Made AYP

Appendix B

For each year of school climate data that was released for use in this research, a summary of demographic information regarding the survey respondents was .This information is self –reported and may not be indicative of the demographics of the entire school staff as participation is voluntary.

Table B1
Characteristics of Respondents who Completed the Perceptions of School Culture

	2008-2009	2009-2010	2010-2011
School A			
Total Respondents	13	28	31
Sex			
Female	85%	93%	97%
Male	15%	7%	3%
Position			
Regular Classroom Teacher	38%	57%	55%
Counselor, Librarian/Media Specialist, or Administrator	8%	7%	6%
Other	54%	36%	39%
Years of Experience			
More than 20 years	8%	14%	10%
10-19 years	23%	32%	45%
5-9 years	46%	25%	29%
1-4 years	23%	29%	16%
School B			
Total Respondents	23	27	41
Sex			
Female	87%	93%	90%
Male	13%	7%	10%
Position			
Regular Classroom Teacher	48%	44%	56%
Counselor, Librarian/Media Specialist, or Administrator	9%	11%	12%
Other	43%	44%	32%

	2008-2009	2009-2010	2010-2011
Years of Experience			
More than 20 years	4%	7%	10%
10-19 years	48%	33%	41%
5-9 years	30%	48%	39%
1-4 years	17%	11%	10%
School C			
Total Respondents	43	74	49
Sex			
Female	95%	93%	92%
Male	5%	7%	8%
Position			
Regular Classroom Teacher	42%	39%	57%
Counselor, Librarian/Media Specialist, or Administrator	9%	7%	4%
Other	49%	54%	39%
Years of Experience			
More than 20 years	28%	26%	18%
10-19 years	23%	24%	51%
5-9 years	35%	30%	20%
1-4 years	14%	20%	10%
School D			
Total Respondents	19	44	37
Sex			
Female	100%	86%	89%
Male	0%	15%	11%
Position			
Regular Classroom Teacher	53%	59%	59%
Counselor, Librarian/Media Specialist, or Administrator	11%	7%	11%
Other	37%	34%	30%
Years of Experience			
More than 20 years	21%	16%	16%
10-19 years	26%	27%	16%
5-9 years	37%	20%	51%
1-4 years	16%	36%	16%

	2008-2009	2009-2010	2010-2011
School E			
Total Respondents	24	48	31
Sex			
Female	88%	90%	90%
Male	12%	10%	10%
Position			
Regular Classroom Teacher	38%	42%	55%
Counselor, Librarian/Media Specialist, or Administrator	17%	6%	13%
Other	46%	52%	32%
Years of Experience			
More than 20 years	38%	15%	23%
10-19 years	42%	48%	52%
5-9 years	12%	29%	23%
1-4 years	8%	8%	3%
School F			
Total Respondents	10	7	20
Sex			
Female	100%	71%	90%
Male	0%	29%	10%
Position			
Regular Classroom Teacher	40%	29%	50%
Counselor, Librarian/Media Specialist, or Administrator	10%	29%	10%
Other	50%	43%	40%
Years of Experience			
More than 20 years	20%	14%	5%
10-19 years	30%	43%	55%
5-9 years	40%	29%	35%
1-4 years	10%	14	5%
School G			
Total Respondents	45	57	53
Sex			
Female	91%	91%	92%
Male	9%	9%	8%
Position			
Regular Classroom Teacher	40%	40%	45%
Counselor, Librarian/Media Specialist, or Administrator	7%	5%	2%
Other	53%	55%	53%

	2008-2009	2009-2010	2010-2011
Years of Experience			
More than 20 years	27%	21%	30%
10-19 years	20%	21%	19%
5-9 years	38%	33%	26%
1-4 years	16%	25%	25%
School H			
Total Respondents	17	43	35
Sex			
Female	88%	91%	91%
Male	12%	9%	9%
Position			
Regular Classroom Teacher	35%	35%	37%
Counselor, Librarian/Media Specialist, or Administrator	18%	2%	9%
Other	47%	63%	54%
Years of Experience			
More than 20 years	24%	14%	17%
10-19 years	12%	28%	31%
5-9 years	35%	33%	29%
1-4 years	29%	26%	23%
School I			
Total Respondents	28	50	69
Sex			
Female	79%	80%	81%
Male	21%	20%	19%
Position			
Regular Classroom Teacher	46%	58%	49%
Counselor, Librarian/Media Specialist, or Administrator	21%	6%	10%
Other	32%	36%	41%
Years of Experience			
More than 20 years	32%	22%	28%
10-19 years	25%	28%	26%
5-9 years	18%	24%	28%
1-4 years	25%	26%	19%

	2008-2009	2009-2010	2010-2011
School J			
Total Respondents	36	51	61
Sex			
Female	92%	88%	90%
Male	8%	12%	10%
Position			
Regular Classroom Teacher, Counselor, Librarian/Media Specialist, or Administrator	39%	51%	38%
	17%	10%	7%
Other	44%	39%	56%
Years of Experience			
More than 20 years	28%	16%	13%
10-19 years	31%	43%	36%
5-9 years	22%	24%	31%
1-4 years	19%	18%	20%
School K			
Total Respondents	14	26	37
Sex			
Female	93%	88%	92%
Male	7%	12%	8%
Position			
Regular Classroom Teacher	43%	27%	35%
Counselor, Librarian/Media Specialist, or Administrator	7%	12%	11%
Other	50%	61%	54%
Years of Experience			
More than 20 years	43%	19%	22%
10-19 years	7%	35%	43%
5-9 years	29%	31%	14%
1-4 years	21%	15%	22%
School L			
Total Respondents	15	25	20
Sex			
Female	100%	84%	80%
Male	0%	16%	20%
Position			
Regular Classroom Teacher	53%	56%	80%
Counselor, Librarian/Media Specialist, or Administrator	7%	4%	10%
Other	40%	40%	10%

	2008-2009	2009-2010	2010-2011
Years of Experience			
More than 20 years	7%	28%	20%
10-19 years	53%	36%	50%
5-9 years	13%	28%	20%
1-4 years	27%	8%	10%
School M			
Total Respondents	30	48	36
Sex			
Female	83%	81%	81%
Male	17%	19%	19%
Position			
Regular Classroom Teacher	63%	69%	61%
Counselor, Librarian/Media Specialist, or Administrator	3%	8%	8%
Other	33%	23%	31%
Years of Experience			
More than 20 years	20%	17%	14%
10-19 years	33%	31%	39%
5-9 years	27%	27%	31%
1-4 years	20%	25%	17%
School N			
Total Respondents	35	74	83
Sex			
Female	86%	78%	76%
Male	14%	22%	24%
Position			
Regular Classroom Teacher	46%	62%	47%
Counselor, Librarian/Media Specialist, or Administrator	9%	7%	7%
Other	46%	31%	46%
Years of Experience			
More than 20 years	23%	22%	22%
10-19 years	20%	30%	36%
5-9 years	34%	26%	27%
1-4 years	23%	23%	16%

	2008-2009	2009-2010	2010-2011
School O			
Total Respondents	33	38	38
Sex			
Female	97%	100%	100%
Male	3%	0%	0%
Position			
Regular Classroom Teacher	39%	32%	47%
Counselor, Librarian/Media Specialist, or Administrator	9%	5%	5%
Other	52%	63%	47%
Years of Experience			
More than 20 years	30%	16%	16%
10-19 years	18%	29%	29%
5-9 years	30%	24%	34%
1-4 years	21%	32%	21%

Appendix C

School-wide Evaluation Tool[7]
(SET)

Implementation Guide

School _____ **Date** _____

District _____ **State** _____

Step 1: Make Initial Contact
A. Identify school contact person & give overview of SET page with the list of products needed. B. Ask when they may be able to have the products gathered. Approximate date: _____ C. Get names, phone #'s, email address & record below. Name_____ Phone_____ Email_____ **Products to Collect** 1. _____ Discipline handbook 2. _____ School improvement plan goals 3. _____ Annual Action Plan for meeting school-wide behavior support goals 4. _____ Social skills instructional materials/ implementation time line 5. _____ Behavioral incident summaries or reports (e.g., office referrals, suspensions, expulsions) 6. _____ Office discipline referral form(s) 7. _____ Other related information
Step 2: Confirm the Date to Conduct the SET
A. Confirm meeting date with the contact person for conducting an administrator interview, taking a tour of the school while conducting student & staff interviews, & for reviewing the products. Meeting date & time: _____
Step 3: Conduct the SET
A. Conduct administrator interview. B. Tour school to conduct observations of posted school rules & randomly selected staff (minimum of 10) and student (minimum of 15) interviews. C. Review products & score SET.

[7] Obtained from www.pbis.org.

Step 4: Summarize and Report the Results
A. Summarize surveys & complete SET scoring. B. Update school graph. C. Meet with team to review results. Meeting date & time: _____

School-wide Evaluation Tool

(SET)

Scoring Guide

School _____ **Date** _____

District _____ **State** _____

Pre _____ **Post** _____ **SET data collector** _____

Feature	Evaluation Question	Data Source (circle sources used) P= product; I= interview; O= observation	Score: 0-2
A. Expectations Defined	1. Is there documentation that staff has agreed to 5 or fewer positively stated school rules/ behavioral expectations?(0=no; 1= too many/negatively focused; 2 = yes)	Discipline handbook, Instructional materials **P** Other _____	
	2. Are the agreed upon rules & expectations publicly posted in 8 of 10 locations? (See interview & observation form for selection of locations). (0= 0-4; 1= 5-7; 2= 8-10)	Wall posters **O** Other _____	
B. Behavioral Expectations Taught	1. Is there a documented system for teaching behavioral expectations to students on an annual basis?(0= no; 1 = states that teaching will occur; 2= yes)	Lesson plan books, Instructional materials **P** Other _____	
	2. Do 90% of the staff asked state that teaching of behavioral expectations to students has occurred this year?(0= 0-50%; 1= 51-89%; 2=90%-100%)	Interviews **I** Other _____	
	3. Do 90% of team members asked state that the school-wide program has been taught/reviewed with staff on an annual basis?(0= 0-50%; 1= 51-89%; 2=90%-100%)	Interviews **I** Other _____	

	4. Can at least 70% of 15 or more students state 67% of the school rules? (0= 0-50%; 1= 51-69%; 2= 70-100%)	Interviews Other _____	**I**	
	5. Can 90% or more of the staff asked list 67% of the school rules? (0= 0-50%; 1= 51-89%; 2=90%-100%)	Interviews Other _____	**I**	
C. **On-going System for Rewarding Behavioral Expectations**	1. Is there a documented system for rewarding student behavior? (0= no; 1= states to acknowledge, but not how; 2= yes)	Instructional materials, Lesson Plans, Interviews Other _____	**P**	
	2. Do 50% or more students asked indicate they have received a reward (other than verbal praise) for expected behaviors over the past two months? (0= 0-25%; 1= 26-49%; 2= 50-100%)	Interviews Other _____	**I**	
	3. Do 90% of staff asked indicate they have delivered a reward (other than verbal praise) to students for expected behavior over the past two months? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	**I**	
D. **System for Responding to Behavioral Violations**	1. Is there a documented system for dealing with and reporting specific behavioral violations? (0= no; 1= states to document; but not how; 2 = yes)	Discipline handbook, Instructional materials Other _____	**P**	
	2. Do 90% of staff asked agree with administration on what problems are office-managed and what problems are classroom–managed? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	**I**	
	3. Is the documented crisis plan for responding to extreme dangerous situations readily available in 6 of 7 locations? (0= 0-3; 1= 4-5; 2= 6-7)	Walls Other _____	**O**	
	4. Do 90% of staff asked agree with administration on the procedure for handling extreme emergencies (stranger in building with a weapon)? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	**I**	

E. **Monitoring & Decision-Making**	1. Does the discipline referral form list (a) student/grade, (b) date, (c) time, (d) referring staff, (e) problem behavior, (f) location, (g) persons involved, (h) probable motivation, & (i) administrative decision? (0=0-3 items; 1= 4-6 items; 2= 7-9 items)	Referral form (circle items present on the referral form)	**P**	
	2. Can the administrator clearly define a system for collecting & summarizing discipline referrals (computer software, data entry time)? (0=no; 1= referrals are collected; 2= yes)	Interview Other _____	**I**	
	3. Does the administrator report that the team provides discipline data summary reports to the staff at least three times/year? (0= no; 1= 1-2 times/yr.; 2= 3 or more times/yr)	Interview Other _____	**I**	
	4. Do 90% of team members asked report that discipline data is used for making decisions in designing, implementing, and revising school-wide effective behavior support efforts? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	**I**	
F. **Management**	1. Does the school improvement plan list improving behavior support systems as one of the top 3 school improvement plan goals? (0= no; 1= 4th or lower priority; 2 = 1st- 3rd priority)	School Improvement Plan, Interview Other _____	**P** **I**	
	2. Can 90% of staff asked report that there is a school-wide team established to address behavior support systems in the school? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	**I**	
	3. Does the administrator report that team membership includes representation of all staff? (0= no; 2= yes)	Interview Other _____	**I**	
	4. Can 90% of team members asked identify the team leader? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	**I**	
	5. Is the administrator an active member of the school-wide behavior support team? (0= no; 1= yes, but not consistently; 2 = yes)	Interview Other _____	**I**	
	6. Does the administrator report that team meetings occur at least monthly? (0=no team meeting; 1=less often than monthly; 2= at least monthly)	Interview Other _____	**I**	

	7. Does the administrator report that the team reports progress to the staff at least four times per year? (0=no; 1= less than 4 times per year; 2= yes)				Interview Other _____ **I**	
	8. Does the team have an action plan with specific goals that is less than one year old? (0=no; 2=yes)				Annual Plan, calendar Other _____ **P**	
G. **District-Level Support**	1. Does the school budget contain an allocated amount of money for building and maintaining school-wide behavioral support? (0= no; 2= yes)				Interview Other _____ **I**	
	2. Can the administrator identify an out-of-school liaison in the district or state? (0= no; 2=yes)				Interview Other _____ **I**	
Summary Scores:	A = /4	B = /10	C = /6	D = /8	E = /8	
	F = /16	G = /4	Mean = /7			

Administrator Interview Guide

Let's talk about your discipline system

1) Do you collect and summarize office discipline referral information? Yes No If no, skip to #4.
2) What system do you use for collecting and summarizing office discipline referrals? (E2)
   a) What data do you collect? _____
   b) Who collects and enters the data? _____
3) What do you do with the office discipline referral information? (E3)
   a) Who looks at the data? _____
   b) How often do you share it with other staff? _____
4) What type of problems do you expect teachers to refer to the office rather than handling in the classroom/ specific setting? (D2)
5) What is the procedure for handling extreme emergencies in the building (i.e. stranger with a gun)? (D4)

Let's talk about your school rules or motto

6) Do you have school rules or a motto? Yes No If no, skip to # 10.
7) How many are there? _____
8) What are the rules/motto? (B4, B5)

9) What are they called? (B4, B5)

10) Do you acknowledge students for doing well socially? Yes No If no, skip to # 12.

11) What are the social acknowledgements/ activities/ routines called (student of month, positive referral, letter home, stickers, high 5's)? (C2, C3)

Do you have a team that addresses school-wide discipline? If no, skip to # 19

12) Has the team taught/reviewed the school-wide program with staff this year? (B3) Yes No
13) Is your school-wide team representative of your school staff? (F3) Yes No
14) Are you on the team? (F5) Yes No
15) How often does the team meet? (F6) _____

16) Do you attend team meetings consistently? (F5) Yes No
17) Who is your team leader/facilitator? (F4) _____
18) Does the team provide updates to faculty on activities & data summaries? (E3, F7) Yes No
    If yes, how often? _____

19) Do you have an out-of-school liaison in the state or district to support you on positive behavior support systems development? (G2) Yes No
    If yes, who? _____

20) What are your top 3 school improvement goals? (F1)

21) Does the school budget contain an allocated amount of money for building and maintaining school-wide behavioral support? (G1) Yes No

Additional Interviews

In addition to the administrator interview questions there are questions for Behavior Support Team members, staff and students. ***Interviews can be completed during the school tour.*** Randomly select students and staff as you walk through the school. Use this page as a reference for all other interview questions. Use the interview and observation form to record student, staff, and team member responses.

Staff Interview Questions

Interview a minimum of 10 staff

1) What are the _____ (school rules, high 5's, 3 bee's)? (B5)
(Define what the acronym means)

2) Have you taught the school rules/behavioral expectations this year? (B2)

3) Have you given out any _____ since _____? (C3)
(rewards for appropriate behavior) (2 months ago)

4) What types of student problems do you or would you refer to the office? (D2)

5) What is the procedure for dealing with a stranger with a gun? (D4)

6) Is there a school-wide team that addresses behavioral support in your building?

7) Are you on the team?

Team Member Interview Questions

1) Does your team use discipline data to make decisions? (E4)

2) Has your team taught/reviewed the school-wide program with staff this year? (B3)

3) Who is the team leader/facilitator? (F4)

Student interview Questions

Interview a minimum of 15 students

1) What are the _____ (school rules, high 5's, 3 bee's)? (B4)
   (Define what the acronym means.)

2) Have you received a _____ since _____? (C2)
   (reward for appropriate behavior) (2 months ago)

Interview and Observation Form

Staff questions (Interview a minimum of 10 staff members)							Team member questions			Student questions	
What are the school rules? Record the # of rules known.	*Have you taught the school rules/ behave. exp. to students this year?*	Have you given out any _____since _____?(2 mos.)	*What types of student problems do you or would you refer to the office?*	*What is the procedure for dealing with a stranger with a gun?*	*Is there a team in your school to address school-wide behavior support systems?*	Are you on the team? If yes, ask team questions	*Does your team use discipline data to make decisions?*	*Has your team taught/ reviewed SW program w/staff this year?*	*Who is the team leader/ facilitator?*	*What are the (school rules)?* Record the # of rules known	*Have you received a _____ since _____?*
	Y N	Y N			Y N	Y N	Y N	Y N		1	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		2	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		3	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		4	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		5	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		6	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		7	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		8	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		9	Y N
	Y N	Y N			Y N	Y N	Y N	Y N		10	Y N
						X				Total	

Front hall/ office	Class 1	Class 2	Class 3	Cafeteria	Library	Other setting	Hall 1	Hall 2	Hall 3
Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Y N	Y N	Y N	Y N	Y N	Y N	Y N	X	X	X

Appendix D[1]

School-wide Benchmarks of Quality (Revised)
TEAM MEMBER RATING FORM

Directions: Place a check in the box that most accurately describes your progress on each benchmark.

Critical Elements	Benchmarks of Quality	Check One: In Place (++)	Needs Improvement (+)	Not In Place (-)
PBS Team	1. Team has administrative support			
	2. Team has regular meetings (at least monthly)			
	3. Team has established a clear mission/purpose			
Faculty Commitment	4. Faculty are aware of behavior problems across campus through regular data sharing			
	5. Faculty involved in establishing and reviewing goals			
	6. Faculty feedback is obtained throughout the year			
Effective Procedures for Dealing with Discipline	7. Discipline process described in narrative format or depicted in graphic format			
	8. Discipline process includes documentation procedures			
	9. Discipline referral form includes information useful in decision making			
	10. Problem behaviors are defined			
	11. Major/minor behaviors are clearly differentiated			
	12. Suggested array of appropriate responses to major (office-managed) problem behaviors			
Data Entry & Analysis Plan Established	13. Data system is used to collect and analyze ODR data			
	14. Additional data are collected (attendance, grades, faculty attendance, surveys) and used by SWPBS team			
	15. Data analyzed by team at least monthly			
	16. Data shared with team and faculty monthly (minimum)			
Expectations & Rules Developed	17. 3-5 positively stated school-wide expectations are posted around school			
	18. Expectations apply to both students and staff			
	19. Rules are developed and posted for specific settings (settings where data suggest rules are needed)			
	20. Rules are linked to expectations			
	21. Staff are involved in development of expectations and rules			
Reward/ Recognition Program Established	22. A system of rewards has elements that are implemented consistently across campus			
	23. A variety of methods are used to reward students			
	24. Rewards are linked to expectations and rules			
	25. Rewards are varied to maintain student interest			
	26. Ratios of acknowledgement to corrections are high			
	27. Students are involved in identifying/developing incentives			
	28. The system includes incentives for staff/faculty			

Kincaid, D., Childs, K., & George, H. (March, 2010).
School-wide Benchmarks of Quality (Revised). Unpublished instrument. USF, Tampa, Florida

1

[1] Obtained from www.pbis.org

Critical Elements	Benchmarks of Quality (Revised)	In Place (++)	Needs Improvement (+)	Not In Place (-)
Lesson Plans for Teaching Expectations/ Rules	29. A behavioral curriculum includes teaching expectations and rules			
	30. Lessons include examples and non-examples			
	31. Lessons use a variety of teaching strategies			
	32. Lessons are embedded into subject area curriculum			
	33. Faculty/staff and students are involved in development & delivery of behavioral curriculum			
	34. Strategies to share key features of SWPBS program with families/community are developed and implemented			
Implementation Plan	35. A curriculum to teach the components of the discipline system to all staff is developed and used			
	36. Plans for training staff how to teach expectations/rules/rewards are developed, scheduled and delivered			
	37. A plan for teaching students expectations/rules/rewards is developed scheduled and delivered			
	38. Booster sessions for students and staff are planned, scheduled, and delivered			
	39. Schedule for rewards/incentives for the year is planned			
	40. Plans for orienting incoming staff and students are developed and implemented			
	41. Plans for involving families/community are developed & implemented			
Classroom Systems	42. Classroom rules are defined for each of the school-wide expectations and are posted in classrooms.			
	43. Classroom routines and procedures are explicitly identified for activities where problems often occur (e.g. entering class, asking questions, sharpening pencil, using restroom, dismissal)			
	44. Expected behavior routines in classroom are taught			
	45. Classroom teachers use immediate and specific praise			
	46. Acknowledgement of students demonstrating adherence to classroom rules and routines occurs more frequently than acknowledgement of inappropriate behaviors			
	47. Procedures exist for tracking classroom behavior problems			
	48. Classrooms have a range of consequences/interventions for problem behavior that are documented and consistently delivered			
Evaluation	49. Students and staff are surveyed about PBS			
	50. Students and staff can identify expectations and rules			
	51. Staff use referral process (including which behaviors are office managed vs. teacher managed) and forms appropriately			
	52. Staff use reward system appropriately			
	53. Outcomes (behavior problems, attendance, morale) are documented and used to evaluate PBS plan			

Appendix E

BENCHMARKS OF QUALITY SCORING GUIDE

Benchmark	3 points	2 points	1 point	0 points
1. Team has administrative support	Administrator(s) attended training, play an active role in the PBIS process, actively communicate their commitment, support the decisions of the PBIS Team, and attend **all** team meetings.	Administrator(s) support the process, take as active a role as the rest of the team, and/or attend **most** meetings	Administrator(s) support the process but don't take as active a role as the rest of the team, and/or attends **only a few** meetings.	Administrator(s) do not actively support the PBIS process.
2. Team has regular meetings (at least monthly)		Team meets monthly (**min. of 9 one-hour meetings** each school year).	Team meetings are not consistent (**5-8) monthly meetings** each school year).	Team seldom meets (**fewer than five monthly meetings** during the school year).
3. Team has established a clear mission/purpose			Team has a written purpose/mission statement for the PBS team (commonly completed on the cover sheet of the action plan).	No mission statement/purpose written for the team.
4. Faculty are aware of behavior problems across campus through regular data sharing		Data regarding school-wide behavior are shared with faculty monthly (**min. of 8 times** per year).	Data regarding school-wide behavior are occasionally shared with faculty **(3-7 times** per year).	Data are not regularly shared with faculty. Faculty may be given an update **0-2 times** per year
5. Faculty are involved in establishing and reviewing goals		**Most** faculty participate in establishing PBIS goals (i.e. surveys, "dream", "PATH") on at least an annual basis.	**Some** of the faculty participates in establishing PBIS goals (i.e. surveys, "dream", "PATH") on at least an	**Faculty does not** participate in establishing PBIS goals.

Benchmark	3 points	2 points	1 point	0 points
			annual basis.	
6. Faculty feedback is obtained throughout year		Faculty is given opportunities to provide feedback, to offer suggestions, and to make choices in every step of the PBIS process (via staff surveys, voting process, suggestion box, etc.) Nothing is implemented without the majority of faculty approval.	Faculty are given some opportunities to provide feedback, to offer suggestions, and to make some choices during the PBIS process. However, the team also makes decisions without input from staff.	Faculty are rarely given the opportunity to participate in the PBS process (fewer than 2 times per school year).
7. Discipline process described in narrative format or depicted in graphic format		Team **has** established clear, written procedures that lay out the process for handling both major and minor discipline incidents. (**Includes** crisis situations)	Team **has** established clear, written procedures that lay out the process for handling both major and minor discipline incidents. (**Does not include** crisis situations.)	Team **has not** established clear, written procedures for discipline incidents and/or there is no differentiation between major and minor incidents.
8. Discipline process includes documentation procedures			There **is a** documentation procedure to track both major and minor behavior incidents (i.e., form, database entry, file in room, etc.).	There **is not a** documentation procedure to track both major and minor behavior incidents (i.e., form, database entry, file in room, etc.).
9. Discipline referral form includes information useful in decision making		Information on the referral form includes ALL of the required fields: Student's name, date, time of incident, grade level, referring staff, location of incident, gender, problem behavior, possible motivation, others involved, and administrative decision.	The referral form includes all of the required fields, but also includes unnecessary information that is not used to make decisions and may cause confusion.	The referral form lacks one or more of the required fields or does not exist.

Benchmark	3 points	2 points	1 point	0 points
10. Problem behaviors are defined	Written documentation exists that includes clear definitions of all behaviors listed.	All of the behaviors are defined but some of the definitions are unclear.	Not all behaviors are defined or some definitions are unclear.	No written documentation of definitions exists.
11. Major/minor behaviors are clearly differentiated		**Most** staff are clear about which behaviors are staff managed and which are sent to the office. (i.e. appropriate use of office referrals) Those behaviors are clearly defined, differentiated and documented.	**Some** staff are unclear about which behaviors are staff managed and which are sent to the office (i.e. appropriate) use of office referrals) or no documentation exists.	Specific major/minor behaviors are not clearly defined, differentiated or documented.
12. Suggested array of appropriate responses to major (office-managed) problem behaviors			There is evidence that **all** administrative staff are aware of and use an array of predetermined appropriate responses to major behavior problems.	There is evidence that **some** administrative staff are not aware of, or do not follow, an array of predetermined appropriate responses to major behavior problems.
13. Data system is used to collect and analyze ODR data	The database can quickly output data in graph format and allows the team access to **ALL** of the following information: average referrals per day per month, by location, by problem behavior, by time of day, by student, and compare between years.	**ALL** of the information can be obtained from the database (average referrals per day per month, by location, by problem behavior, by time of day, by student, and compare between years), **though it may not be** in graph format, may require more staff time to pull the information, or require staff time to make sense of the data.	Only **partial** information can be obtained (lacking either the number of referrals per day per month, location, problem behavior, time of day, student, and compare patterns between years.)	The data system is **not able** to provide any of the necessary information the team needs to make school-wide decisions.

Benchmark	3 points	2 points	1 point	0 points
14. Additional data are collected (attendance, grades, faculty attendance, surveys) and used by SWPBS team			The team collects and considers data other than discipline data to help determine progress and successes (i.e. attendance, grades, faculty attendance, school surveys, etc.)	The team does **not** collect or consider data other than discipline data to help determine progress and successes (i.e. attendance, grades, faculty attendance, school surveys, etc.).
15. Data analyzed by team at least monthly		Data are printed, analyzed, and put into graph format or other easy to understand format by a member of the team **monthly** (minimum)	Data are printed, analyzed, and put into graph format or other easy to understand format by a team member **less than once a month**.	Data are **not analyzed**.
16. Data shared with team and faculty monthly (minimum)		Data are shared with the PBS team and faculty **at least once a month**.	Data are shared with the PBIS team and faculty **less than one time a month.**	Data are not reviewed each month by the PBIS team and shared with faculty.
17. 3-5 positively stated school-wide expectations are posted around school	3-5 positively stated school-wide expectations are visibly posted around the school. Areas posted include the classroom and a minimum of 3 other school settings (i.e., cafeteria, hallway, front office, etc).	3-5 positively stated expectations are visibly posted in most important areas (i.e. classroom, cafeteria, hallway), but one area may be missed.	3-5 positively stated expectations are not clearly visible in common areas.	Expectations are not posted or team has either too few or too many expectations.
18. Expectations apply to both students and staff	PBIS team **has communicated** that expectations apply to all students **and** all staff.	PBIS team has expectations that apply to all students **AND** all staff but haven't specifically communicated that they apply to staff as well as students.	Expectations refer only to student behavior.	There are no expectations.

Benchmark	3 points	2 points	1 point	0 points
19. Rules are developed and posted for specific settings (settings where data suggested rules are needed)		Rules are posted **in all** of the most problematic areas in the school.	Rules are posted **in some, but not all** of the most problematic areas of the school.	Rules **are not** posted in any of the most problematic areas of the school.
20. Rules are linked to expectations			When taught or enforced, staff consistently link the rules with the school-wide expectations.	When taught or enforced, staff **do not consistently** link the rules with the school-wide expectations and/or rules are taught or enforced separately from expectations.
21. Staff are involved in development of expectations and rules		**Most** staff were involved in providing feedback/input into the development of the school-wide expectations and rules (i.e., survey, feedback, initial brainstorming session, election process, etc.)	Some staff were involved in providing feedback/input into the development of the school-wide expectations and rules.	Staff were not involved in providing feedback/input into the development of the school-wide expectations and rules.
22. A system of rewards has elements that are implemented consistently across campus	The reward system guidelines and procedures **are** implemented consistently across campus. Almost all members of the school are participating appropriately. at least **90%** participation	The reward system guidelines and procedures **are** implemented consistently across campus. However, some staff choose not to participate or participation does not follow the established criteria. at least **75%** participation	The reward system guidelines and procedures **are not** implemented consistently because several staff choose not to participate or participation does not follow the established criteria. at least **50%** participation	There is no identifiable reward system or a large percentage of staff are not participating. less than **50%** participation

Benchmark	3 points	2 points	1 point	0 points
23. A variety of methods are used to reward students		The school uses a variety of methods to reward students (e.g. cashing in tokens/points). There should be opportunities that include tangible items, praise/recognition and social activities/events. Students with few/many tokens/points have equal opportunities to cash them in for rewards. However, larger rewards are given to those earning more tokens/points.	The school uses a variety of methods to reward students, but students do not have access to a variety of rewards in a consistent and timely manner.	The school uses only one set methods to reward students (i.e., tangibles only) or there are no opportunities for children to cash in tokens or select their reward. Only students that meet the quotas actually get rewarded, students with fewer tokens cannot cash in tokens for a smaller reward.
24. Rewards are linked to expectations and rules	Rewards are provided for behaviors that are identified in the rules/expectations and staff verbalize the appropriate behavior when giving rewards.	Rewards are provided for behaviors that are identified in the rules/expectations and staff sometimes verbalize appropriate behaviors when giving rewards.	Rewards are provided for behaviors that are identified in the rules/expectations but staff rarely verbalize appropriate behaviors when giving rewards.	Rewards are provided for behaviors that are not identified in the rules and expectations.
25. Rewards are varied to maintain student interest		The rewards are varied throughout year and reflect students' interests (e.g. consider the student age, culture, gender, and ability level to maintain student interest.)	The rewards are varied throughout the school year, but **may not** reflect students' interests.	The rewards are **not** varied throughout the school year and **do not** reflect student's interests.
26. Ratios of acknowledgement to corrections are high	Ratios of teacher reinforcement of appropriate behavior to correction of inappropriate behavior are **high** (e.g., 4:1).	Ratios of teacher reinforcement of appropriate behavior to correction of inappropriate behavior are **moderate** (e.g., 2:1).	Ratios of teacher reinforcement of appropriate behavior to correction of inappropriate behavior are **about the same** (e.g., 1:1).	Ratios of teacher reinforcement of appropriate behavior to correction of inappropriate behavior **are low** (e.g., 1:4)
27. Students are involved in identifying/developing incentives			Students **are often** involved in identifying/developing incentives.	Students **are rarely** involved in identifying/developing incentives.

Benchmark	3 points	2 points	1 point	0 points
28. The system includes incentives for staff/faculty		The system includes incentives for staff/faculty and they are delivered consistently.	The system includes incentives for staff/faculty, but they are not delivered consistently.	The system **does not** include incentives for staff/faculty.
29. A behavioral curriculum includes teaching expectations and rules		Lesson plans are developed and used to teach rules and expectations	Lesson plans were developed and used to teach rules, but not developed for expectations or vice versa.	Lesson plans have not been developed or used to teach rules or expectations
30. Lessons include examples and non-examples			Lesson plans include both examples of appropriate behavior and examples of inappropriate behavior.	Lesson plans give no specific examples or non-examples or there are no lesson plans.
31. Lessons use a variety of teaching strategies		Lesson plans are taught using at least 3 different teaching strategies (i.e., modeling, role-playing, videotaping)	Lesson plans have been introduced using fewer than 3 teaching strategies.	Lesson plans have **not** been taught or do not exist.
32. Lessons are embedded into subject area curriculum		**Nearly all** teachers embed behavior teaching into subject area curriculum on a daily basis.	**About 50%** of teachers embed behavior teaching into subject area curriculum or embed behavior teaching fewer than 3 times per week	**Less than 50%** of all teachers embed behavior teaching into subject area curriculum or only occasionally remember to include behavior teaching in subject areas.

Benchmark	3 points	2 points	1 point	0 points
33. Faculty/staff and students are involved in development & delivery of behavioral curriculum			Faculty, staff, and students **are** involved in the development and delivery of lesson plans to teach behavior expectations and rules for specific settings.	Faculty, staff, and students **are not** involved in the development and delivery of lesson plans to teach behavior expectations and rules for specific settings.
34. Strategies to share key features of SWPBS program with families/community are developed and implemented			The PBIS Plan **includes** strategies to reinforce lessons with families and the community (i.e., after-school programs teach expectations, newsletters with tips for meeting expectations at home)	The PBIS plan **does not include** strategies to be used by families and the community.
35. A curriculum to teach components of the discipline system to all staff is developed and used		The team scheduled time to present and train faculty and staff on the discipline procedures and data system **including** checks for accuracy of information or comprehension. **Training included all components:** referral process (flowchart), definitions of problem behaviors, explanation of major vs. minor forms, and how the data will be used to guide the team in decision making.	The team scheduled time to present and train faculty and staff on the discipline procedures and data system, **but there were no** checks for accuracy of information or comprehension. **OR training did not include all components** (i.e., referral process (flowchart), definitions of problem behaviors, explanation of major vs. minor forms, and how the data will be used to guide the team in decision making.)	Staff was either not trained or was given the information without formal introduction and explanation.

Benchmark	3 points	2 points	1 point	0 points
36. Plans for training staff to teach students expectations/rules and rewards are developed, scheduled and delivered		The team scheduled time to present and train faculty and staff on lesson plans to teach students expectations and rules **including** checks for accuracy of information or comprehension. **Training included all components:** plans to introduce the expectations and rules to all students, explanation of how and when to use formal lesson plans, and how to embed behavior teaching into daily curriculum.	The team scheduled time to present and train faculty and staff on lesson plans to teach students expectations and rules **but there were no** checks for accuracy of information or comprehension. **OR Training didn't include all components:** plans to introduce expectations and rules to all students, explanation of how and when to use formal lesson plans, and how to embed behavior teaching into daily curriculum.	Staff was either not trained or was given the information without formal introduction and explanation.
37. A plan for teaching students expectations/ rules/rewards is developed scheduled and delivered	Students are introduced/taught **all** of the following: school expectations, rules for specific setting, and the reward system guidelines.	Students are introduced/taught **two (2)** of the following: school expectations, rules for specific setting, and the reward system guidelines.	Students are introduced/taught only **one (1)** of the following: school expectations, rules for specific setting, and the reward system guidelines.	Students are not introduced/taught **any** of the following: school expectations, rules for specific setting, and the reward system guidelines.
38. Booster sessions for students and staff are planned, scheduled, and implemented		Booster sessions are planned and delivered to reteach staff/students at least once in the year and additionally at times when the data suggest problems by an increase in discipline referrals per day per month or a high number of referrals in a specified area. Expectations and rules are reviewed with students regularly (at least 1x per week).	Booster sessions are not utilized fully. For example: booster sessions are held for students but not staff; booster sessions are held for staff, but not students; booster sessions are not held, but rules & expectations are reviewed at least weekly with students.	Booster sessions for students and staff are **not** scheduled/planned. Expectations and rules are reviewed with students once a month or less.

Benchmark	3 points	2 points	1 point	0 points
39. Schedule for rewards/incentives for the year is planned			There **is a** clear plan for the type and frequency of rewards/incentives to be delivered throughout the year.	There **is no** plan for the type and frequency of rewards/incentives to be delivered throughout the year.
40. Plans for orienting incoming staff and students are developed and implemented		Team has planned for and carries out the introduction of School-wide PBIS and training of new staff and students throughout the school year.	Team has planned for the introduction of School-wide PBS and training of either new students or new staff, but does not include plans for training both. OR the team has plans but has not implemented them.	Team has not planned for the introduction of School-wide PBIS and training of new staff or students
41. Plans for involving families/community are developed and implemented			Team has planned for the introduction and on-going involvement of school-wide PBIS to families/community (i.e., newsletter, brochure, PTA, open-house, team member, etc.)	Team has not introduced school-wide PBIS to families/community.
42. Classroom rules are defined for each of the school-wide expectations and are posted in classrooms		Evident in most classrooms (>75% of classrooms)	Evident in many classrooms (50-75% of classrooms)	Evident in only a few classrooms (less than 50% of classrooms)
43. Classroom routines and procedures are explicitly identified for activities where problems often occur (e.g. entering class, asking questions, sharpening pencil, using restroom, dismissal)		Evident in most classrooms (>75% of classrooms)	Evident in many classrooms (50-75% of classrooms)	Evident in only a few classrooms (less than 50% of classrooms)

Benchmark	3 points	2 points	1 point	0 points
44. Expected behavior routines in classroom are taught		Evident in most classrooms (>75% of classrooms)	Evident in many classrooms (50-75% of classrooms)	Evident in only a few classrooms (less than 50% of classrooms)
45. Classroom teachers use immediate and specific praise		Evident in most classrooms (>75% of classrooms)	Evident in many classrooms (50-75% of classrooms)	Evident in only a few classrooms (less than 50% of classrooms)
46. Acknowledgement of students demonstrating adherence to classroom rules and routines occurs more frequently than acknowledgement of inappropriate behaviors		Evident in most classrooms (>75% of classrooms)	Evident in many classrooms (50-75% of classrooms)	Evident in only a few classrooms (less than 50% of classrooms)
47. Procedures exist for tracking classroom behavior problems		Evident in most classrooms (>75% of classrooms)	Evident in many classrooms (50-75% of classrooms)	Evident in only a few classrooms (less than 50% of classrooms)
48. Classrooms have a range of consequences/ interventions for problem behavior that are documented and consistently delivered		Evident in most classrooms (>75% of classrooms)	Evident in many classrooms (50-75% of classrooms)	Evident in only a few classrooms (less than 50% of classrooms)

Benchmark	3 points	2 points	1 point	0 points
49. Students and staff are surveyed about PBS		Students and staff **are** surveyed at least annually (i.e. items on climate survey or specially developed PBIS plan survey), and information **is used** to address the PBIS plan.	Students and staff **are** surveyed at least annually (i.e. items on climate survey or specially developed PBIS plan survey), but information **is not used** to address the PBIS plan.	Students and staff **are not** surveyed.
50. Students and staff can identify expectations and rules		**Almost all** students and staff can identify the school-wide expectations and rules for specific settings. (can be identified through surveys, random interviews, etc…) at least 90%	**Many** students and staff can identify the school-wide expectations and rules for specific settings. at least 50%	**Few** of students and staff can identify the expectations and rules for specific settings OR Evaluations are not conducted less than 50%
51. Staff use referral process (including which behaviors are office managed vs. which are teacher managed) and forms appropriately	Almost all staff know the procedures for responding to inappropriate behavior, use forms as intended and fill them out correctly. (can be identified by reviewing completed forms, staff surveys, etc…) at least 90% know/use	Many of the staff know the procedures for responding to inappropriate behavior, use forms as intended and fill them out correctly. at least 75% know/use	Some of the staff know the procedures for responding to inappropriate behavior, use forms as intended and fill them out correctly. at least 50% know/use	Few staff know the procedures for responding to inappropriate behavior, use forms as intended and fill them out correctly OR Evaluations are not conducted. less than 50% know/use
52. Staff use reward system appropriately	Almost all staff understand identified guidelines for the reward system and are using the reward system appropriately. (can be identified by reviewing reward token distribution, surveys, etc…)at least 90% understand/use	Many of the staff understand identified guidelines for the reward system and are using the reward system appropriately. at least 75% understand/use	Some of the staff understand identified guidelines for the reward system and are using the reward system appropriately. at least 50% understand/use	Few staff understand and use identified guidelines for the reward system OR Evaluations are not conducted at least yearly or do not assess staff knowledge and use of the reward system .less than 50% understand/use

Benchmark	3 points	2 points	1 point	0 points
53. Outcomes (behavior problems, attendance, and morale) are documented and used to evaluate PBIS plan	There is a plan for collecting data to evaluate PBIS outcomes, **most** data are collected as scheduled, and data are used to evaluate PBIS plan.	There is a plan for collecting data to evaluate PBIS outcomes, **some** of the scheduled data have been collected, and data are used to evaluate PBIS plan.	There is a plan for collecting data to evaluate PBIS outcomes; however nothing has been collected to date.	There is no plan for collecting data to evaluate PBIS outcomes.

Appendix F

Perceptions of School Culture Instrument
Subscale Descriptions and Included Survey Items

Collaborative Working Relationships

Faculty are encouraged to exercise initiative for change to improve their performance.
There is collaboration among faculty.
The principal uses professional feedback from the teachers.
Professional trust is evident among the faculty.
There are channels for open communication among the school staff.
Those affected by a decision play a significant role in the decision-making process.
Leadership within the school is open to anyone willing to assume responsibility.
Administrators include teachers in the decision making process.
Faculty have the power to act on their decisions.
Faculty respect each other professionally.
Faculty work together to seek solutions to problems.
Administrators are team players.
The principal is receptive to various points of view.

Student-Centered Vision, Mission, and Policies

Data are used to determine the level of individual student achievement.
School policies are consistent with state policies.
The goals are connected to the mission statement.
Rigorous standards provide the backdrop for our mission statement.
The mission statement communicates clearly.
The vision indicates that students are to be engaged in learning at high levels.
Goals for school improvement are measurable
The mission statement communicates the work that must be done to fulfill the school's purpose.
The vision is communicated to parents.
School policies are consistent with district policies.
Decisions that affect the school in general are based on school goals.
The vision is communicated to the professional staff.
High expectations are incorporated into the mission statement for this school.

Student Responsibility for Learning

Students are persistent in completing difficult tasks.
Parents' behaviors indicate a belief that success in school is dependent on student effort.
Students respect different kinds of intelligences.
Students are intrinsically motivated to learn.
Students exercise control over their own learning.
Students look for ways to improve their own performance.
Parents' behaviors indicate that they feel their efforts at home do affect their children's success in school.
Students take pride in the appearance of their school.
Students view assessments as a means to give them feedback on their learning-not only as an in end of itself.
Students accept responsibility for their own performance.
Students are aware of their own learning strengths.
Students believe that hard work pays off.

Teacher Responsibility for Learning

Faculty consistently consider how teaching/learning can be improved.
Teachers are sensitive to student learning styles.
Students are taught to build on their strongest learning modes.
Collaboration among faculty is motivated by attempts to improve student learning.
Teachers vary their instruction to accommodate different learning styles.
When outcomes are less than desired, faculty increase their efforts to attain unmet goals.
Faculty view accountability as a positive concept.
Teachers look for ways to improve their own performance.
Teachers encourage student questioning.
Professional staff value input from students.
Students are encouraged to learn with one another.
Teachers use instructional practices that stimulate curiosity.
Faculty perceive the vision as including a shared responsibility for high levels of student learning.

References

References

Achievement Through Prevention Act, S.541, 112th Cong. (2011). Retrieved from http://thomas.loc.gov/cgi-bin/query/z?c112:S.541: on September 2, 2012.

Assistance to States for the Education of Children with Disabilities and the Early Intervention Program for Infants and Toddlers with Disabilities: Final Regulations, 34 C.F.R. § 300 (1999).

Assistance to States for the Education of Children with Disabilities and the Early Intervention Program for Infants and Toddlers with Disabilities: Final Regulations, 34 C.F.R. § 300 (2006).

Bazelon Center for Mental Health Law. (2006). Way to go: School success for children with mental health care needs. A report by the Bazelon Center for Mental Health Law; Washington, DC. Retrieved from http://www.bazelon.org/LinkClick.aspx?fileticket=j2MGBkHXv_8%3D&tabid=104

Bellg, A.J., Borrelli, B., Resnick, B., Hecht, J. et al. (2004) Enhancing treatment fidelity in health behavior change studies: Best practices and recommendations from the NIH behavior change consortium. *Health Psychology, 23*(5), 443-451. doi: 10.1037/0278-6133.23.5.443

Bickman, L., Reimer, M., Brown. J.L., Jones, S.M. et al. (2009). Approaches to measuring implementation fidelity in school-based program evaluations. *Journal of Research in Character Education, 7*(2), 75-101.

Bohanon, H., Fenning, P., Carney, K., Anderson-Harriss, S. et al. (2006). Schoolwide application of positive behavior support in an urban high school. *Journal of Positive Behavior Interventions, 8*(3), 131-145. doi: 10.1177/10983007060080030201

Bradshaw, C.P., Koth, C.W., Bevans, K.B., Ialongo, N.L, & Leaf, P.J. (2008). The impact of school-wide positive behavioral interventions and supports (PBIS) on the organizational health of elementary schools. *School Psychology Quarterly, 23*(4), 462-473. doi: 10.1037/a0012883

Bradshaw, C. P., Koth, C. W., Thornton, L. A., & Leaf, P. J. (2009). Altering school climate through school-wide Positive Behavioral Interventions and Supports:

Findings from a group-randomized effectiveness trial. *Prevention Science, 10*(2), 100-115. doi:10.1007/s11121-008-0114-9

Bradshaw, C.P., Reinke, W.M., Brown, L.D., Bevans, K.B., & Leaf, P.J. (2008). Implementation of school-wide positive behavioral interventions and supports in elementary schools: Observations from a randomized trial. *Education and Treatment of Children, 31*(1), 1-26. doi: 10.1037/a0012883

Bradshaw, C.P., & Waasdorp, T.E. (2009). Measuring and changing a "culture of bullying". *School Psychology Review, 38,* 356-361.

Brand, S., Felner, R., Shim, M., Seitsinger, A., & Dumas, T. (2003). Middle school improvement and reform: Development and validation of a school-level assessment of climate, cultural pluralism, and school safety. *Journal of Educational Psychology, 95,* 570-588. doi:10.1037/0022-0663.95.3.570

Brookover, W.B., Schweitzer, J.H., Schneider, J.M., Beady, C.H., Flood, P.K., & Wisenbaker, J.M. (1978). Elementary school climate and school achievement. *American Educational Research Journal, 15,* 301-318.

Chen, G. & Weikart, L. (2008). Student background, school climate, school disorder, and student achievement: An empirical study of New York City's middle schools. *Journal of School Violence,7*(4),3-20. doi: 10.1080/15388220801973813

Center for Child Family Policy. (2008). Evaluation of the school-wide positive behavioral support program in eight North Carolina elementary schools. Retrieved from http://www.childandfamilypolicy.duke.edu/pdfs/pubpres/EvalServ_PBS_EvalReport_040108.pdf

Clonan, S.M., McDougal, J.L., Clark, K., & Davison, S. (2007). Use of office discipline referrals in school-wide decision making: A practical example. *Psychology in the Schools, 44,* 19-27. doi:10.1002/pits.20202

Colvin, G., Kame'enui, E.J., & Sugai, G. (1993). School-wide and classroom management: Reconceptualizing the integration and management of students with behavior problems in general education. *Education and Treatment of Children, 16*(4), 361-381.

Cohen, R., Kincaid, D., & Childs, K. (2007). Measuring school-wide positive behavior support implementation: Development and validation of the Benchmarks of Quality (BOQ). *Journal of Positive Behavior Interventions, 9,* 203-213. doi:10.1177/10983007070090040301

Council for Exceptional Children (n.d) http://cec.sped.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=11297 retrieved April 22, 2010.

Council for Exceptional Children. (n.d). Public Policy Agenda for the 112th Congress 2011-2013.Arlington, VA: Author.

Cowley, K.S., Voelkel, S., Finch, N.L., & Meehan. M.L. (2005*) Perceptions of school culture user manual and technical report*. Charleston: Edvantia.

Dimitrov, D.M. (2009). Quantitative research in education: Intermediate & advanced methods. Whittier: New York.

Durand, M.V., & Carr, E.G. (1985). Self-injurious behavior: Motivating conditions and guidelines for treatment. *School Psychology Review, 14,* 171-176.

Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W.B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research, 18,* 237-256. doi:10.1093/her/18.2.244

Eber, L. (2006). *Illinois PBIS evaluation report.* LaGrange Park: Illinois State Board of Education.

Ekstrom, R.B., Goertz, M.E., Pollack, J.M., & Rock, D.A. (1986). Who drops out of high school and why?: Findings from a national study. *Teachers College Record,87,* 357-373.

Education for All Handicapped Children Act, 20 U.S.C. § 1400 *et seq*. (1975).

Elementary and Secondary Reauthorization Act of 2011. Unassigned. 112th Cong. 2011. Retrieved from http://www.help.senate.gov/imo/media/doc/ROM117523.pdf

Epstein, M., Atkins, M., Cullinan, D., Kutash, K., & Weaver, R. (2008). *Reducing Behavior Problems in the Elementary School Classroom: A Practice Guide* (NCEE #2008-012). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, US Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/publications/practiceguides

Flannery, K.B., Sugai, G. (2009). Introduction to the monograph on high school SWPBS implementation. In B. Flannery & G. Sugai (Eds.), *SWPBS implementation in high schools: Current practice and future directions.* (pp. 7-22). Eugene: University of Oregon.

Fleming, C.B., Haggerty, K.P., Catalano, R.F., Harachi, T.W., Mazza, J.J., & Gruman, D.H. (2005). Do social and behavioral characteristics targeted by preventive

interventions predict standardized test scores and grades? *Journal of School Health*, 75, 342-350.doi: 10.1111/j.1746-1561.2005.00048

Honig v. Doe, 484 U.S. 305 (1988).

Horner, R., & Billingsley, F. (1988). The effects of competing behavior on the generalization and maintenance of adaptive behavior in applied settings. In R. Horner, G. Dunlap, & R. Koegel (Eds.), *Generalization and maintenance: Lifestyle changes in applied settings* (pp. 197-220). Baltimore: Paul H. Brookes.

Horner, R.H., Dunlap, G., Koegel, R.L., Carr, E.G., Sailor, W., Anderson, J., Abin, R.W., & O'Neill, R.E., (1990). Toward a technology of "nonaversive" behavioral support. *Journal of The Association for Persons with Severe Handicaps, 15*, 125-132.

Horner, R.H., Sugai, G., Todd, A.W., & Lewis Palmer, T. (2005). School-wide positive behavior support. In L. Bambara & L. Kern (Eds.), *Individualized supports for students with problem behaviors: Designing positive behavior plans* (pp. 359-390) New York: Guilford.

Horner, R.H., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A.W., & Esperanza, J. (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behavior support in elementary schools. *Journal of Positive Behavior Interventions, 11*(3), 133-144. doi: 10.1177/1098300709332067

Horner, R.H., Todd, A.W., Lewis-Palmer, T., Irvin, L.K., Sugai, G., & Boland, J.B. (2004). The school-wide evaluation tool (SET): A research instrument for assessing school-wide positive behavior support. *Journal of Positive Behavior Interventions, 6*, 3-12. doi: 10.1177/10983007040060010201

Hoy, W.K., & Hannum, J.W. (1997). Middle school climate: an empirical assessment of organizational health and student achievement. *Educational Administration Quarterly, 33*, 290-311. doi:10.1177/0013161X97033003003

Illinois PBIS Network. (2010). FY09 Illinois PBIS Network End of Year Report. Retrieved from www.pbisillinois.org on April 2, 2010

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 *et seq*. (1990).

Individuals With Disabilities Education Act Amendments of 1997, 20 U.S.C. § 1400 *et seq*. (1997).

Individuals With Disabilities Education Improvement Act of 2004, 20 U.S.C. § 1400 *et seq*. (2004).

Irvin, L.K., Tobin, T.J., Sprague, J.R., Sugai, G., & Vincent, C.G. (2004). Validity of office discipline referral measures as indices of school-wide behavioral status and effects of school-wide behavioral interventions. *Journal of Positive Behavior Interventions, 6*(3), 131-147. doi:10.1177/10983007040060030201

Johnson, B., & Stevens, J. (2006). Student achievement and elementary teachers' perceptions of school climate. *Learning Environment Research, 9,* 111-122. doi: 10.1007/s10984-006-9007-7

Kansas State Board of Education. (1995). Suspension/expulsion of regular and special education students in Kansas: A report to the Kansas State Board of Education.

Kincaid, D., Childs, K. & George, H. (2005). *School-wide benchmarks of quality.* Unpublished instrument, University of South Florida.

Kern, L., & Manz, P. (2004). A look at current validity issues of school-wide behavior support. *Behavioral Disorders, 30*(1), 47-59.

Kreft, I. ,& De Leeuw, J. (1998). *Introducing multilevel modeling*. Sage: London.

Kuperminc, G.P., Leadbeater, B.J., & Blatt, S.J. (2001). School social climate and individual differences in vulnerability to psychopathology among middle school students. *Journal of School Psychology, 39*(2), 141-159. doi:10.1016/S0022-4405(01)00059-0

Kuperminc, G.P., Leadbeater, B.J., Emmons, C., & Blatt, S.J. (1997). Perceived school climate and difficulties in the social adjustment of middle school students. *Applied Developmental Science, 1,* 76-88. doi:10.1207/s1532480xads0102_2

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

Lewis, T.J., & Sugai, G. (1999). Effective behavior support: A systems approach to proactive school-wide management. *Focus on Exceptional Children, 31*(6), 1-24.

Lewis, T.J., Powers, L.J., Kelk, M.J., & Newcomer, L.L. (2002). Reducing problem behaviors on the playground: An investigation of the application of schoolwide positive behavior supports. *Psychology in the Schools, 39,* 181-190. doi:10.1002/pits.10029

Maas, C.J., & Hox, J.J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology, 1*(3), 86-92. doi:10.1027/1614-2241.1.3.85

Mayer, G. R., & Sulzer-Azaroff, B. (1991). Interventions for vandalism. In G. Stoner, M. K. Shinn, & H. M. Walker (Eds.) *Interventions for achievement and behavior*

problems (pp. 559-580). Washington, DC: National Association of School Psychologists Monograph.

Mayer, G. (1995). Preventing antisocial behavior in the schools. *Journal of Applied Behavior Analysis, 28,* 467-478. doi:10.1901/jaba.1995.28-467

McCurdy, B.L., Mannella, M.C. & Eldridge, N. (2003). Positive behavior support in urban schools: Can we prevent the escalation of antisocial behavior? *Journal of Positive Behavioral Interventions, 5*, 158-170.

McIntosh, K., Chard, D. J., Boland, J. B., & Horner, R. H. (2006). Demonstration of combined efforts in school-wide academic and behavioral systems and incidence of reading and behavior challenges in early elementary grades. *Journal of Positive Behavioral Interventions, 8,* 146-154. doi:10.1177/10983007060080030301

Metzler, C. W., Biglan, A., Rusby, J. C., & Sprague, J. R. (2001). Evaluation of a comprehensive behavior management program to improve school-wide positive behavior support. *Education and Treatment of Children, 24*, 448-479.

Mitchell, B.S., Stormont, M., Gage, N.A. (2011). Tier two interventions implemented within the context of a tiered prevention framework. *Behavioral Disorders, 36*(4), 241-261.

Mills v. The Board of Education of the District of Columbia, 348 Supp. 866, (CD. DC 1972).

Morrison, G.M., & Skiba, R. (2001). Predicting violence from school misbehavior: Promises and perils. *Psychology in the Schools, 2,* 173-184. doi:10.1002/pits.1008

National Association of Secondary School Principals. (n.d) NASSP and coalition letter on the Achievement Through Prevention Act. Retrieved from http://www.nassp.org/Content.aspx?topic=NASSP_and_Coalition_Letter_on_the_Achievement_through_Prevention_Act

National Association of State Directors of Special Education. (2010). Principles for the reauthorization of the Elementary and Secondary Education Act (ESEA). Alexandria: VA. Retrieved from http://www.nasdse.org/GovernmentRelations/ESEA/tabid/544/Default.aspx

National Education Association. (2012). Positive behavioral interventions and supports: A multi-tiered framework that works for every student. Washington, DC. Retrieved from http://www.nea.org/home/1213.htm

Nelson, J. R., Benner, G. J., Neill, S., & Stage, S. A. (2006). Interrelationships among language skills, externalizing behavior, and academic fluency and their impact on

the academic skills of students with EBD. *Journal of Emotional and Behavioral Disorders, 14*, 209-216.

No Child Left Behind Act of 2001, 20 U.S.C. § 6301 *et seq.* (2001).

North Carolina Department of Public Instruction. (2010). North Carolina Positive Behavior Support Initiative 08-09 Evaluation Report. Retrieved from http://www.ncpublicschools.org/positivebehavior/data/evaluation/

Pellerin, L. (April, 2000). *Urban youth and schooling: The effect of school climate on student disengagement and dropout.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Positive behavioral supports and the law. (n.d.). Retrieved from www.pbis.org on February 2, 2010.

Reducing Barriers to Learning Act of 2011, H.R. 1995, 112th Cong. (2011). Retrieved from http://thomas.loc.gov/cgi-bin/query/z?c112:H.R.1995: on August 25, 2012.

Rose, T.L. (1988). Current disciplinary practices with handicapped students: Suspensions and Expulsions. *Exceptional Children, 55*(3), 230-239.

Ross, S.W., & Horner, R. H. (2009). Bully prevention in positive behavior support. *Journal of Applied Behavior Analysis*, 42, 747-759. doi:10.1901/jaba.2009.42-747

Rubin, R. (2004). Building a comprehensive discipline system and strengthening school climate. *Reclaiming Children and Youth, 13*(3), 162-169.

S. Rep. No. 94-168 (1975). Education for All Handicapped Children Act: report together with additional views from Committee on Labor and Public Welfare to accompany S.6.

Safe Schools Improvement Act of 2011, H.R. 1648, 112th Cong. (2011). Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-112hr1648ih/pdf/BILLS-112hr1648ih.pdf on August 23, 2012

Safe Schools Improvement Act of 2011, S. 506, 112th Cong. (2011). Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-112s506is/pdf/BILLS-112s506is.pdf on August 23, 2012

School Success for All Coalition. (2010). Reauthorization of the Elementary and Secondary Education Act (ESEA). Recommendations to improve school climate. Retrieved from http://www.bazelon.org/LinkClick.aspx?fileticket=DmGHY30bCNs%3d&tabid=333

Scott, T. (2001). A schoolwide example of positive behavior support. *Journal of Positive Behavior Interventions, 3*(2), 88-94. doi: doi:10.1177/109830070100300205

Secondary level prevention. (n.d.) Retrieved from www.pbis.org on February 2, 2010.

Simonsen, B., Eber, L., Black, A., Sugai, G., Lewandowski, H., Sims, B., & Myers, D. (2012). Illinois statewide positive behavioral interventions and supports: Evolution and impact on student outcomes across years. *Journal of Positive Behavior Interventions,14*(1), 5-16. doi: 10.1177/1098300711412601

Spaulding, S.A., Horner, R.H., May, S.L., & Vincent, C.G. (2008, November). *Evaluation brief: Implementation of school-wide PBS across the United States*. OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports. Retrieved from http://www.pbis.org/evaluation/evaluation_briefs/nov_08_(2).aspx

Sprague, J.R., & Horner, R.H. (2007). School wide positive behavioral supports. In S.R. Jimerson & M. J. Furlong (Eds.) *The handbook of school violence and school safety: From research to practice* (pp.413-428). New Jersey: Lawrence Erlbaum Associates.

Stockard, J. (2010). An analysis of fidelity implementation policies of the What Works Clearinghouse. *Current Issues in Education, 13*(4). Retrieved from http://cie.asu.edu

Successful, Safe, and Healthy Students Act of 2011, S. 919, 112th Cong. (2011). Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-112s919is/pdf/BILLS-112s919is.pdf on August 12, 2012

Sugai, G. & Simonson, B. (2012). Positive behavioral interventions and supports: History, defining features, and misconceptions. OSEP Technical Assistance Center for Positive Behavior Interventions and Supports. Retrieved from www.pbis.org

Sugai, G. (2009). Abbreviated Vita. Retrieved from http://www.education.uconn.edu/directory/cvs/shortvita.pdf

Sugai, G., & Horner, R.H. (1994). Including students with severe behavior problems in general education settings: Assumptions, challenges and solutions. In J. Marr, G. Sugai, & G. Tindal (Eds.), The Oregon conference monograph (pp. 102-120). Eugene: University of Oregon.

Sugai, G., Horner, R.H., Sailor, W., Dunlap, G., Eber, L., Lewis, T., Kincaid, D., Scott, T., Barrett, S., Algozzine, R., Putnam, R., Massanari, C., & Nelson, M. (2005).

School-wide positive behavior support: Implementers' blueprint and self-assessment. Eugene, OR: University of Oregon. Retrieved from http://www.osepideasthatwork.org/toolkit/pdf/SchoolwideBehaviorSupport.pdf

Sugai, G., & Lewis, T.J. (1996). Preferred and promising practices for social skills instruction. *Focus on Exceptional Children, 29,* 1-16.

Sugai, G., Sprague, J.R., Horner, R.H., & Walker, H.M. (2000). Preventing school violence: The use of office discipline referrals to assess and monitor school-wide discipline interventions. *Journal of Emotional and Behavioral Disorders, 2,* 131-143. doi:10.1177/106342660000800205

Tobin, T., & Sugai, G. (1996). Patterns in middle school discipline records. *Journal of Emotional & Behavioral Disorders, 4(*2), 82-94. doi: doi:10.1177/106342669600400203

Tobin, T., & Sugai, G., (1999). Using sixth grade school records to predict violence, chronic discipline problems, and high school outcomes. *Journal of Emotional and Behavioral Disorders, 7,* 40-53. doi:10.1177/106342669600400203

Tobin, T., Sugai, G., & Colvin, G. (2000, May). Using discipline referrals to make decisions. NASSP Bulletin, 84, 106-117. doi: 0.1177/019263650008461616

Todd, A.W., Horner, R.H., Sugai, G., & Sprague, J.R. (1999). Effective behavior support: Strengthening school-wide systems through a team based approach. *Effective School Practices*, *17*, 23-37.

U.S. Department of Education. (2009b). American Recovery and Reinvestment Act of 2009: IDEA Recovery Funds for Youths with Disabilities. Retrieved from http://www2.ed.gov/policy/gen/leg/recovery/factsheet/idea.html

U.S. Department of Education. (2009a). *Race To The Top*: Application for Initial Funding. Retrieved from http://www2.ed.gov/programs/racetothetop

U.S Department of Education. (2012a). *Race To The Top-District:* Application for Funding. Retrieved from http://www2.ed.gov/programs/racetothetop-district/index.html

U.S. Department of Education. (2012b). *Restraint and Seclusion: Resource Document*, Washington, D.C. Retrieved from www.ed.gov/policy/restraintseclusion.

United States Department of Education, National Center for Education Statistics (2001). *Dropout Rates in the United States:2000,*Washington, DC. Retrieved from http://nces.ed.gov/pubs2002/2002114.pdf

United States Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service (2011). *Analysis of State*

Bullying Laws and Policies, Washington, DC. Retrieved from : http://www2.ed.gov/rschstat/eval/bullying/state-bullying-laws/state-bullying-laws.pdf

U.S. Department of Education Office of Special Education Programs. (1992). *How well are youth with disabilities really doing? A comparison of youth with disabilities and youth in general. A report from the National Longitudinal Transition Study of Special Education Students*, Washington, DC. Retrieved from http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=ED369233http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=ED369233

U.S. Department of Education Office of Special Education Programs Center on Positive Behavioral Interventions and Supports (1999a). Applying positive behavioral support and functional behavioral assessment in schools. Retrieved from www.pbis.org

U.S Office of Special Education Programs Center on Positive Behavioral Interventions and Supports (1999b). What is school-wide positive behavioral interventions and supports? Retrieved from www.pbis.org

Wang, M.C., Haertel, G.D., & Walberg, H.J. (1997). Toward a knowledge base for school learning. *Review of Educational Research*, *63*, 249-294. doi: doi:10.2307/1170546

Washburn, S., Stowe, K.J., Cole, C.M., & Robinson, J. (2007). *Improving school climate and student behavior: A new paradigm for Indiana schools.* Education Policy Briefs, 5(9). Bloomington, IN: Center for Evaluation & Education Policy. Retrieved from http://ceep.indiana.edu/projects/PDF/PB_V5N9_Fall_2007_EPB.pdf

What is primary prevention? (n.d). Retrieved from www.pbis.org on February, 2, 2010

Wehlage, G.G., & Rutter, R.A. (1986). Dropping out: How much do schools contribute to the problem? *Teachers College Record, 87*(3), 374-392.

Wright, J.A., & Dusek, J.B. (1998). Compiling school base rates for disruptive behaviors from student disciplinary referral data. *School Psychology Review*, *27*, 138-147.

Curriculum Vitae

Kelly M. Vaillancourt received her Bachelor of Arts degree in Psychology from the University of North Carolina at Chapel Hill in 2001. Three years later, in 2004, Kelly received her Master of Arts and Certificate of Advanced Study in School Psychology from Appalachian State University. Kelly spent eight years as a school psychologist in Northern Virginia before accepting the position of Director of Government Relations for the National Association of School Psychologists. Kelly is a regular contributor to *Principal Leadership* and *Communique.* Kelly is currently co- writing her first book, on the topic of effective school discipline.