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A Mixed Methods Investigation of Positive Behavior Interventions and Supports in a Midwest Middle School

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by

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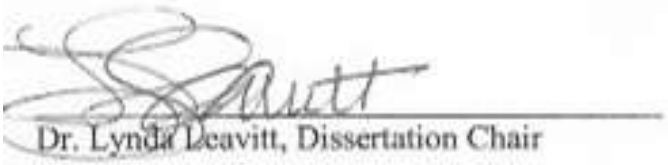
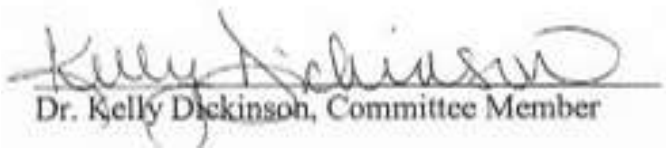


Dr. Lynda Leavitt, Dissertation Chair — 12/6/2019 Date



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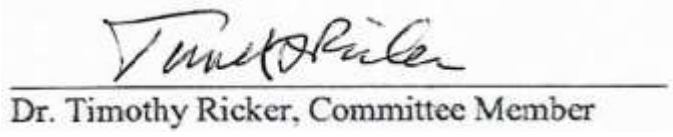

Dr. Timothy Ricker, Committee Member — 12/6/19 Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Thomas Dittrich, Jr.

Signature: _____ Date: 12-6-19

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I am eternally appreciative for the support of my family, friends, Hancock Place School District staff and board members, and Lindenwood University staff. This process included serious challenges requiring strength, perseverance, positivity, and endurance to prevail.

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Abstract

The researcher investigated the difference between the implementation of Positive Behavioral Interventions and Supports (PBIS) and student achievement scores and the number of failing grades in a Midwest United States suburban public middle school through a mixed methods research study. The collected and analyzed secondary data to complete quantitative research included numbers of office discipline referrals and failing grades, average daily attendance percentages, and percentages of students scoring proficient or advanced on the Missouri Assessment Program tests. Staff members, during the specified timeframe of the study, completed a Google Form survey and provided qualitative data.

The *z*-test for difference in proportions served to analyze the quantitative data. The results showed a difference in the number of office referrals, number of failing grades, and percentage of students scoring proficient or advanced on the Missouri Assessment Program; test pre-implementation of PBIS compared with the post-implementation numbers and percentages. Additional analysis did not indicate any difference in the average daily attendance percentage with pre- and post-implementation PBIS data.

Qualitative analysis returned evidence to suggest responses from staff members who worked at the school of study in the 2002–2003 school year, before the implementation of PBIS, were similar to the provided checkbox-type and linear-scale questions. The open-ended questions varied regarding specific strategies utilized and perceived as innovative and the execution of PBIS in the school under study. The

researcher recommended future scholars expand to students in different middle school settings to provide additional data sets.

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Chapter One: Introduction

Introduction

In 1708, Cotton Mather implored fellow colonists to send children to school to qualify individuals for future service and display manners to prevent barbarous ignorance threatening the survival of the colony (as cited in Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). Early U.S. public schools lacked a focus on math or reading and instead taught virtues of family, religion, and community (American Board, 2015). Some of the same issues continued and fueled debates regarding student outcomes in U.S. schools to fulfill the responsibility of educating children to be literate and knowledgeable in the arts and sciences, as well as to become well-behaved citizens (Irvin et al., 2004).

The Boston Latin School opened as the first U.S. public school in 1635 (American Board, 2015). Lannie and McCurdy (2007) cited managing student behaviors as an area of concern, one that has remained since the beginning of education. The history of education showed a line of changes in students' disciplinary situations, whether the focus was on academics, attendance, or behavior-related issues (History of Education in America, n.d.). The idea of a progressive education — educating children to reach their full potential and actively promote and participate in a democratic society — began in the late 1800s and was widespread by the 1930s (American Board, 2015).

The nation soon witnessed discipline decisions managed by punishment and rewards, rather than an understanding of the behavior. Traditionally, school officials disciplined students through punishment with the expectation to behave; if the student misbehaved again, the punishment increased (Lee, n.d.a). The behaviors perceived as rewards of merit in 19th-century classrooms were similar to what teachers valued at the

time of this study, which were focus, attendance, and punctuality (Collins, 2017). By 1900, 31 states had enacted compulsory school attendance for students from ages 8 to 14 years, and by 1918, every state required students to complete elementary school (American Board, 2015).

Initially, educators addressed the functional motivation of behaviors, as well as interventions and supports to improve student behaviors. Congress revised language in the Individuals with Disabilities Education Act to state special education teams should consider positive behavioral interventions, strategies, and support to reduce problem behaviors (Samuels, 2013). The revision led to the schoolwide Positive Behavioral Interventions and Supports (PBIS), a systematic and coordinated framework used in more than 19,000 schools to support desired student behaviors (Garbacz et al., 2016). Schools throughout the country implemented PBIS procedures to improve behavioral climate, safety, and social culture (Horner, Sugai, & Lewis, 2014).

Rationale of the Study

Attendance, behavior, and academic outcomes served as indicators of school effectiveness and long-term student outcomes (Freeman et al., 2016). From the 2002–2003 through 2007–2008 school years, the researcher served as the assistant principal in the public middle school included in the study, and as such, addressed student misbehaviors throughout the school day. PBIS implementation, which occurred during the researcher's first year, was in response to the high number of student discipline referrals and the continuous negative behaviors displayed by students who showed minimal improvement. The configuration and positioning of PBIS leadership teams within a school's communication network influenced the schoolwide implementation and

the degree to which teachers accurately articulated and taught schoolwide core values (Whitcomb, Woodland, & Barry, 2017). As interest in proactive and systematic approaches to supporting positive student behavior grew, important questions remained, specifically regarding the ways in which special education staff and students participated in schoolwide PBIS (Shuster et al., 2017). The school chosen for this study featured a PBIS leadership team consisting of special education staff and students who received interventions and support to meet universal expectations. Through professional development, staff underwent training and engaged in the process of restructuring into a PBIS school, valuing family involvement in the process of a child's treatment (Alkahtani, 2013).

The staff created the matrix, universal posters, and lessons, and built trust with one another and the administration; students became familiar with expectations; and positive results followed. The PBIS team continuously trained the entire staff as implementation and management with fidelity existed in all settings. In the researcher's experience, the climate and culture of the school improved and the number of student office referrals decreased, which resulted in fewer disruptions within the classroom and more time for students to learn.

With the study, the researcher sought to understand the difference between PBIS and student achievement scores. Previous informal data collected by the researcher indicated the number of discipline referrals decreased and attendance increased after PBIS implementation, due to improved student behaviors. Also noted were the ways teachers used strategies and interventions to gain instructional time. The researcher questioned if the implementation of PBIS would increase student achievement scores on

the Missouri Assessment Program (MAP) test and decrease the number of students with failing grades.

Purpose of Study

The outcomes for PBIS implementation included high student achievement and improved behaviors. Through PBIS implementation with fidelity over time, students and educators experienced the following outcomes as shown in Table 1.

Table 1

Outcomes of PBIS Implementation

PBIS outcomes for students and educators	Benefits
Major disciplinary infractions, antisocial behavior, and substance abuse reduced	Students and teachers
Aggressive behavior reduced and emotional regulation improved	Students and teachers
Academic engagement and achievement improved	Students
Perceptions of organizational health and school safety improved	Teachers
Teacher and student reported bullying behavior and victimization reduced	Students and teachers
Perceptions of school climate improved	Students and teachers
Teacher turnover reduced	Teachers

Note. Adapted from "Brief Introduction and Frequently Asked Questions About PBIS." Copyright 2018 by Positive Behavioral Interventions & Supports.

The researcher's intent was to investigate a difference in academic achievement through MAP scores in specific areas of content and a subsequent reduction in failing grades. The importance of attendance was a factor, as well. Implementation of PBIS with fidelity proved crucial in improving student attendance, which boosted student achievement scores. As Balfanz and Byrnes (2012) found, daily school attendance was

integral to student success, especially in mathematics; absence of even two 2 weeks during the school year mattered. Adverse effects of nonattendance included lower scores on standardized tests, higher rates of dropout, or failure to graduate. Thus, addressing student achievement gaps required addressing school absences (Balfanz & Byrnes, 2012).

In the researcher's experience, the studied school received professional development assistance through the St. Louis Special School District, which entailed visits by consultants and training staff. Training included the studied school creating a plan that consisted of tasks and artifacts to fulfill expectations of all three PBIS tiers. The Department of Elementary and Secondary Education recognized the school of study with Distinction of Excellence in four consecutive years. Staff committed several days of professional development, including early release Wednesdays, as well as half and full days provided to the building by the school district.

Research Questions and Hypotheses

Four research questions and four hypotheses guided this study.

RQ1: What schoolwide behavior strategies were applied during PBIS implementation?

RQ2: What schoolwide attendance strategies were applied during PBIS implementation?

RQ3: What schoolwide academic instructional strategies were applied during PBIS implementation?

RQ4: How do teachers perceive the implementation of PBIS?

H1: A difference exists in the number of office referrals pre-to-post-implementation of PBIS.

H2: A difference exists in the number of failing grades pre- to-post-implementation of PBIS.

H3: A difference exits in the student achievement performance, as measured by the Missouri Assessment Program for each subject content tested.

H4: A difference exists in the average daily attendance percentage pre-to-post-implementation of PBIS.

Study Site

The chosen study site was a public middle school in the Midwest United States, with data collected from teachers' responses through qualitative survey questions and quantitative data from MAP test scores, as well as the number of discipline referrals and failing grades. In the researcher's experience and collected demographic data during the years studied, the school site's demographics included a diverse population. Approximately 75% of students at the school received free or reduced lunch rates. From the 2002–2003 through 2007–2008 school years, the school of study underwent various administrative turnovers. In 2002–2003, the administrative team included a principal and assistant principal. In the 2003–2004 school year, which was the first year of PBIS implementation, the administrative team consisted of a principal, assistant principal, and two administrative interns to assign consequences to students referred to the office for negative behaviors. During the last year of the study, 2007–2008, the administration team consisted of a principal and two assistant principals.

Study Limitations

The study was limited to one public middle school in the Midwest United States. Student participants came from three grade levels, with data from five years involving

different students enrolled at each grade level, due to transiency and promotion. Teacher turnover occurred during the study; however, the researcher attempted to include as many PBIS-participating teachers as possible in the anonymous survey, to mitigate the effects of attrition.

Although the goal for PBIS in the school was for full implementation with fidelity, no guarantee existed for treating every discipline situation in the same manner in all settings. Individual staff members' tolerances and abilities to handle discipline matters varied, as well. The school of study data collection platform changed from Lemberger to School Information Systems during the years of the study.

Definition of Terms

Annual Performance Report (APR): The Department of Elementary and Secondary Education graded districts on five categories: academic achievement, subgroup achievement, college and career readiness, attendance, and graduation rates (Rowe, 2016). Collectively, these categories comprised the Annual Performance Report.

Administrator: An educational leader who encouraged team efforts and provided planning time, feedback, and support initiatives (Bubenik, 2017).

Average daily attendance: Schools used average daily attendance as the rate for state report cards and federal accountability (Balfanz & Byrnes, 2012).

Behavior specialist: An individual at the school level who was competent with behavioral principles and assisted with analyzing data (Bubenik, 2017).

Big 5 questions: Martin-Rogers and Petersen (2012) proposed asking five questions to evaluate disciplinary data. The questions helped define problem behavior in terms of types, frequency, location, time, and individuals involved.

Chronic absenteeism: A student who missed 10% or more of a school year, no matter the reason, displayed chronic absenteeism (Balfanz & Byrnes, 2012, p. 2).

Communications: A communications professional was the individual who served as a liaison between the team and staff about PBIS and behavior issues (Bubenik, 2017).

Data specialist: The data specialist was the individual who entered and assessed data from the Schoolwide Information System program (Bubenik, 2017).

Every Student Succeeds Act: Enacted December 10, 2015, the measure reauthorized the 50-year-old Elementary and Secondary Education Act, the United States' national education law and longstanding commitment to equal opportunity for all students. The Every Student Succeeds Act buildt on key areas of progress in recent years, advancing equity by upholding critical protections for America's disadvantaged and high-need students. According to the law, there was accountability and action to effect positive changes in the lowest-performing schools, where groups of students were not making progress (U.S. Department of Education, n.d.).

Functional Behavioral Assessment (FBA): The investigative process that allowed educators to both evaluate behavioral influences and identify the function (reason) for a student's use of challenging behavior (Moreno, Wong-Lo, & Bullock, 2017).

Individuals with Disabilities Education Act (IDEA): A U.S. federal law that addressed how states and public agencies provided early intervention, special education, and related services to children with disabilities (Lee, n.d.a).

Missouri Assessment Program (MAP): The Outstanding Schools Act of 1993 led to the State of Missouri implementing the performance-based MAP in 1997. With MAP,

school administrators could measure district and school effectiveness in engaging students to succeed ("Map Information for Parents," 2015).

Missouri School Improvement Program (MSIP): School districts in Missouri received accreditation by meeting Missouri School Improvement Program (2014) requirements. Missouri State law and the State Board of Education mandated school accreditation.

Multi-tiered systems of support (MTSS): An umbrella term that encompassed the responses to both intervention and PBIS. Schools implementing MTSS general did so to address both behavioral and academic concerns, recognizing they often occurred simultaneously (Samuels, 2016).

Office discipline referrals (ODR): A process that involved setting limits and boundaries and enforcing consistent consequences for students ("Office Referral," n.d.). The concept provided guidelines for behavior expectations to remind students that inappropriate behavior was not allowed. Teachers should try to address behavior and other issues in the classroom when possible; however, when the behavior was serious enough, an ODR was necessary ("Office Referral," n.d.).

Positive Behavior Interventions & Supports (PBIS): A system to promote positive behaviors in students through specific strategies to manage student behavior both inside and outside of classroom settings (Horner, Sugai, & Lewis, 2015). PBIS was an all-encompassing system of behavior management that required the involvement of all affected parties. PBIS positively affected the student's behavior and quality of life. The three systems of support of PBIS occurred at the primary (schoolwide), secondary

(classroom), and tertiary (individual) levels, with programs behaviorally based on practices shown to produce desired outcomes (Horner et al., 2015).

PBIS coach: A PBIS coach was either district-level (external) or school-based (internal) person who helped guide a team through the process. The PBIS coach was the school's main contact for all PBIS-related activities (Bubenik, 2017).

PBIS recorder: An individual who took notes, transcribed the team's responses from chart paper, and generally kept records of communications (Bubenik, 2017).

School climate: School structures that affected students, including teaching practices, diversity, and the relationships among administrators, teachers, parents, and students ("School Climate and Culture," n.d.).

School culture: The way teachers and other staff members worked together, as well as the set of beliefs, values, and assumptions they shared ("School Culture and Climate," n.d.). A positive school climate and school culture promoted the students' abilities to learn ("School Culture and Climate," n.d.).

Team leader: A part of the PBIS initiative who began, facilitated, and reviewed the purpose of meetings, keeping the team focused along the way (Bubenik, 2017). A PBIS team leader must be highly organized and understand all components of a PBIS plan (Bubenik, 2017).

Tiered Fidelity Inventory: A single, efficient, valid, and reliable survey to guide implementation and sustained use of schoolwide PBIS (SWPBIS; Tiered Fidelity Inventory, n.d.). Using the Tiered Fidelity Inventory, teams measured the extent to which school personnel applied the core features of SWPBIS at all three tiers, either individually or collectively (Tiered Fidelity Inventory, n.d.).

Timekeeper: An individual who kept track of the PBIS timeline with a focus on organization and efficiency (Bubenik, 2017). The timekeeper provided 10-minute warnings during meetings to keep all members of the PBIS team on track and participating (Bubenik, 2017).

Summary

The history of education included management of students, dating back to the days of colonies, which served as a prevention of barbarous and ignorance, teaching of manners, religion, literacy, and to progressive education (History of Education, n.d.). Student discipline was managed with rewards and punishments, not by interventions and supports, to change behaviors moving forward. Schools throughout the country implemented PBIS procedures to improve behavioral climate, safety, and social culture.

The purpose of this study was to determine if a difference existed at a Midwest U.S. middle school between data outcomes before and after implementation of PBIS with fidelity for student achievement scores and attendance rates. Originally, PBIS was not a priority in the school and only partially implemented when the researcher transferred to another administrative role in a different school within the same district. When the researcher returned to the respective middle school, PBIS implementation occurred with goals of decreasing the number of negative behavioral occurrences and student office referrals and increasing student attendance. The researcher worked closely with the PBIS leadership team and staff to reimplement Tier 1 of PBIS.

The researcher planned to use the findings from the study to determine whether to reimplement PBIS with fidelity at the school of study to improve student achievement

scores, maintain or improve average daily attendance percentages, and maintain or decrease the number of student office discipline referrals.

Chapter Two: Review of Literature

Chapter One included key concepts and background information to understand the challenges schools faced in regard to student office discipline referrals, daily average attendance percentages, and student achievement scores. The researcher reviewed the then-current literature specifically on SWPBIS and how the system's approach supported or failed to aid students. In the researcher's experience, the implementation of SWPBIS was an extensive process necessitating extensive advanced planning, as it required a system change for an entire school. To be successful, a SWPBIS program required a firm commitment from most staff members ("Getting Started," n.d.).

History of PBIS

To implement SWPBIS, school administrators prioritized a positive school climate. Widely implemented in the United States, PBIS required the backing of influential educational stakeholders (Goodman-Scott, Betters-Bubon, & Donohue, 2016). The National Education Association reported the successful implementation of PBIS in the 1980s at the University of Oregon, as an alternative to aversive interventions with students having significant behavioral disabilities and engaging in extreme forms of self-injury and aggression (Beaudette, 2014; "PBIS: A Multi-Tiered Framework," 2014). The use of PBIS was not only in standard educational facilities, but in special education, following Congress's 1997 amendment of the Individuals with Disabilities Education Act, which defined behaviors subsequently addressed by PBIS ("PBIS and the Law," 2019). According to PBIS, positive approaches were necessary to promote good student behavior, as measured by regular use of functional assessments as the only approach to

addressing behavior specifically mentioned in the Individuals with Disabilities Education Act ("PBIS and the Law," 2019).

Sugai and Simonsen (2012) identified several areas in need of attention, including practices based on research and data, the teaching of effective social skills, engaging the team in implementation, and providing PBIS-specific professional development. When implemented early and consistently with at-risk students, PBIS data returned strong outcomes (Tier 1 Supports, 2019). Based on research from U.S. universities, school administrators learned the approach and received assistance from the National Center on Positive Behavioral Interventions & Supports (Sugai & Simonsen, 2012).

Over the 22 years of the Annual Gallup Poll of the Public's Attitudes Toward the Public Schools, a lack of discipline emerged as the most serious problem facing the nation's educational system (as cited in Cotton, 1990). A chief concern of school administrators and teachers was the management of student behaviors (Cotton, 1990). As a result, PBIS appeared to be appropriate to all educational levels, including elementary, middle, and high schools; adult learning facilities; centers for at-risk children; and detention centers and prisons.

PBIS centered on quality-of-life issues, such as improved academic achievement, enhanced social competence, and safe learning and teaching environments, with a focus on the prevention of problem behaviors (Haydon & Kroeger, 2016). Cramer and Bennett (2015) reported PBIS had a rich and lengthy history of setting up environments to promote positive behaviors and increase academic achievement for most students. When students succeeded in demonstrating appropriate behavior, often a noticeable change occurred in the school climate (Sinnott, 2009). Achievement and behavior were related

when perceived as outcomes; when viewed as causes of one another, researchers found achievement and behavior were unrelated ("PBIS: A Multi-Tiered Framework," 2014). In the present study, the researcher focused on achievement and behavior as outcomes of PBIS implementation, not causes.

In an analysis of more than 7,500 elementary schools, Beaudette (2014, para. 10) found that staff members at PBIS schools were more likely to perceive the school climate favorably than those at non-PBIS schools. While many PBIS techniques existed, the program's application set the stage for improving school safety and climates within school districts, campuses, and classrooms (Banks & Obiakor, 2015). Table 2 displays how PBIS differed from traditional approaches to student behavior.

Table 2

Traditional Approaches vs. PBIS in Education

Traditional approaches	PBIS
Reactive personnel waited for problems to happen.	Proactive personnel designed ways to prevent or reduce the likelihood of problem behavior.
Administrators and instructors handled problems on a student-by-student basis.	Individuals proactively addressed the variables making problems more or less likely to occur.
Personnel focused on ways to punish behavior.	Personnel focused on ways to teach and reward behavior.
Data were a means to document events.	Administrators used data to provide insight into the problem-solving process.
The use of interventions helped administrators and instructors diagnose or label a student.	Interventions were a means to identify the level of support necessary for the student to meet expectations.

Note. Adapted from "How Is PBIS Different from Traditional Approaches to Student Behavior?" (n.d.). Copyright Florida PBIS.

Leach and Helf (2016) noted many educators across the country were implementing PBIS in schools and classrooms. Garbacz et al. (2016, p. 60) acknowledged SWPBIS was a systematic and coordinated framework used in more than 19,000 schools to support behavior. Bazelon (2011, p. 1) reported PBIS implementation occurred throughout schools for more than 20 years with consistently beneficial outcomes. Researchers and others used PBIS and SWPBIS interchangeably as both referred to positive behavior interventions and supports as a school-wide framework.

In the 2000s, members of the National Technical Assistance Center on PBIS assisted in shaping the PBIS framework and provided direct professional development and technical assistance to more than 16,000 schools (Sugai & Simonsen, 2012, p. 3), which resulted in a behavioral shift throughout the schools. At more than 100 St. Louis County, Missouri, schools, prior to PBIS, teachers reprimanded misbehaving students and sent them to the principal's office. The practice changed following implementation of PBIS ("PBIS: The Home-School Connection," n.d., p. 1). The National Education Association recognized professional development was critical to proper implementation of PBIS and the improved behavioral outcomes PBIS fostered (National Education Association, 2014). With support and training from the local school district's PBIS program, schools created campus-wide routines, expectations, and rules governing positive learning environments where all children could find success ("PBIS: The Home-School Connection," n.d.). In the researcher's experience, the study site used support from a school district–assigned PBIS coach to provide professional development and training. Additionally, in the researcher's experience, the school's PBIS team also

received training from PBIS experts through professional development opportunities at the local school site.

PBIS Core Elements

School districts largely adopted the multitiered framework as a schoolwide improvement process, because of the focus of screening all children, improving overall instruction, and making decisions based on data (Samuels, 2016). Researchers described PBIS as an approach with core elements achieved through a variety of strategies (Betters-Bubon, Brunner, & Kansteiner, 2016; Caldarella, Shatzer, Gray, Young, & Young, 2011; Horner et al., 2014; "PBIS: A Multi-Tiered Framework," 2014). To efficiently differentiate behavioral instructions for all students, PBIS experts used tiered models of service delivery (Tier 1 Supports, 2019). PBIS programs integrated research-based practice within a three-tiered approach at the primary, secondary, and tertiary levels of prevention and intervention (Horner et al., 2014). Table 3 includes the core elements at each of the three tiers in the prevention model (Horner et al., 2014).

Table 3

Core Elements of the Three Tiers of PBIS Prevention Model

Tier level	Core elements
Primary	• Behavioral expectations defined • Behavioral expectations taught • Reward system supplied for appropriate behavior • Clearly defined consequences outlined for problem behavior • Differentiated instruction outlined for behavior • Administrator continuously collects and uses data for decision-making • Universal screening created for behavior support
Secondary	• Progress monitored for at risk students • System put in place for increasing structure and predictability • System created for increasing contingent adult feedback • System set up for linking academic and behavioral performance • System developed for increasing home/school communication • Administrator collects and uses of data for decision-making • Basic-level function-based support created

Tertiary	• Functional behavioral assessment is full and complex
	• Team-based comprehensive assessment created
	• Demonstrate link of academic and behavior supports
	• Perform individualized intervention based on assessment information focusing on:
	  ○ prevention of problem contexts
	  ○ instruction on functionally equivalent skills and on desired performance skills
	  ○ strategies for placing problem behavior on extinction
	  ○ strategies for enhancing contingence reward of desired behavior
	  ○ use of negative or safety consequences if needed; collection and use of data for decision-making

As identified by Hinton, Buchanan, and Rudisill (2016), tiered instruction occurred when the educator implemented incremental changes and increased support based on students' needs: academic or behavioral. The foundation for PBIS rested on the assumption of approximately 80% of students responding to universal or primary level interventions, which explicitly taught and reinforced behavioral expectations to all students (Schmitz, 2018, p.5). In a study of 890 schools among different grade levels and throughout 20 states, Frank, Horner, and Anderson (2009) did not find the probability of socioeconomic status of the student population significantly associated with 80% attainment within one year (p. 268). Executing the framework with Tier 1 implementation fidelity was critical for realizing improvements (Swain-Bradway, Freeman, Kittelman, & Nese, 2018). Research-based, scientifically validated interventions provided an opportunity to implement strategies for a large majority of students who also met the Every Student Succeeds Act, which required the use of scientifically based curricula and interventions (Tier 1 Supports, 2019).

Of an estimated 10% to 15% students seen as at risk, secondary-level interventions were necessary to provide needed support by means of social skills instruction in small groups of students projected to benefit from such services (Caldarella et al., 2011, p. 3). Monitoring student progress to inform interventions was the only method to determine if a student was improving (Tier 1 Supports, 2019). Caldarella et al. (2011) also shared an intensive individual or tertiary level of support with highly focused interventions and assessments in students who failed to improve with less personalized efforts; these were often the students with learning disabilities. Behavioral intervention planning generally stemmed from professional judgment, based on discipline referral and

performance data required and used to make informed behavioral intervention planning decisions (Tier 1 Supports, 2019). Using a collaborative team approach was especially important for students with long-lasting behavior problems evident in multiple settings, which presented substantial obstacles to the students' opportunities for learning, friendships, and quality of life (Kincaid & Dunlap, n.d.). Students with serious behavioral problems required individualized planning and intervention, as well as intensive and comprehensive attention (Kincaid & Dunlap, n.d.).

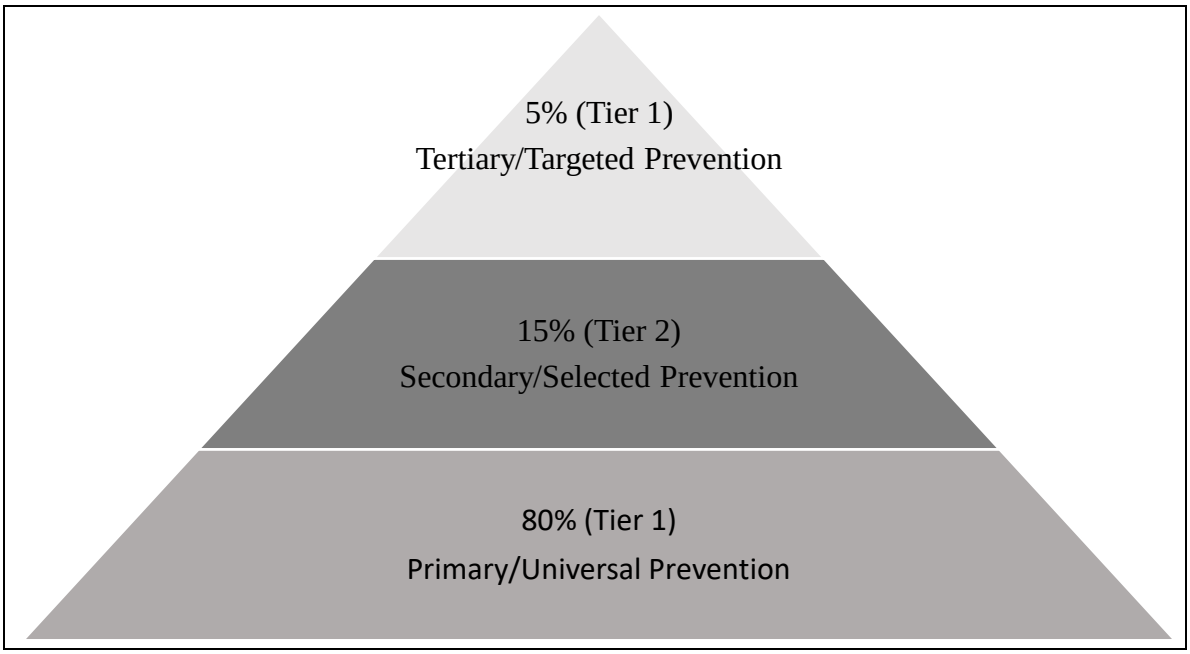

Figure 1. PBIS Pyramid of Interventions created by the researcher.

PBIS comprised three types of assessments. First, the screening of data comparison per day and per month provided the total office discipline referrals. The second assessment involved the diagnostic determination by time of day, problem behavior, and location. The third assessment centered on monitoring progress to determine if the behavioral interventions produced the desired effects (Tier 1 Supports, 2019).

Professionals Collaborating

Over 21,000 elementary, middle, and high schools across the United States implemented PBIS (Schmitz, 2018, para. 3). Successful PBIS programs depended upon the involvement of the entire school community ("PBIS: A Multi-Tiered Framework," 2014). Horner et al. (2014) noted the core elements of PBIS were integrated within organizational systems in which teams, working with administrators and behavioral specialists, provided the training, policy support, and organizational supports needed for initial implementation, active application, and sustained use of the core elements. All educators developed positive, predictable, and safe environments that promoted strong interpersonal relationships with students through teaching, modeling, and encouragement ("SWPBIS for Beginners," n.d.). A truly collaborative team approach could be difficult to achieve, because the approach required commitment and contrasted sharply with the types of team meetings most parents, students, and professionals typically experienced (Kincaid & Dunlap, n.d.).

According to National Education Association President Lily Eskelsen Garcia, prevention, not punishment, was the best way to address behavioral problems ("PBIS: A Multi-Tiered Framework, 2014). The importance of PBIS was the education provided to instructors for creating a classroom environment conducive to encouraging student success. In addition, lessening the achievement gap between students was possible through the American School Counselor Association's multitiered system of supports and evidence-based practices (Betters-Bubon et al., 2016).

Consistency from class to class and adult to adult was important for the successful implementation of SWPBIS ("SWPBIS for Beginners," n.d.). Creating a positive climate

and culture increased happiness for the school environment among parents, students, and staff, as well as strengthened the bond between teachers, students, and families (Schmitz, 2018). Educators who implemented PBIS taught students how to achieve expected outcomes, prevented problem behaviors from taking place, provided relevant incentives for students to demonstrate desired behaviors, and implemented consequences aligned to the function of the student's behavior ("Maximize Positive Outcomes for Students," 2016).

Educators maximized academic instruction to enhance student achievement and support social, emotional, and behavioral development through prompting, modeling, teaching, and acknowledging expected student behavior ("SWPBIS for Beginners," n.d.). These instructors actively supervised all students across all settings ("SWPBIS for Beginners," n.d.). The establishment of a unified, collaborative approach to student support made the difference between being effective or ineffective; hence, the commitment to SWPBIS was worth the time and effort (Kincaid & Dunlap, n.d.).

Gains Sought

Research showed successfully implementing PBIS reduced suspensions and overall behavior problems that resulted in student referrals to the principal's office; in addition, PBIS improved academic performance, attendance, and students' ability to regulate student emotions and behave in socially appropriate ways (Romney, 2018). PBIS programs were most effective in reducing the negative behaviors exhibited by youths aged 10 to 15 years (Strunk & Rossi, 2016); however, this did not mean the programs were ineffective with students of other ages. The basis of PBIS was that all children of any age were capable of learning and displaying positive behavior when given a

conducive learning environment and activities (Tier 1 Supports, 2019). School administrators' goals, therefore, were to identify the contextual setting events and environmental conditions that enabled exhibition of appropriate behavior. The next step would be to determine the means and systems to provide the needed resources for both teachers and students (Tier 1 Supports, 2019).

After collecting data in the PBIS program, schools established procedures for regular and frequent review and analysis of the data to detect patterns that needed further investigation, and evaluated whether students were achieving academic, discipline, and behavior management goals (U.S. Department of Education, 2014). The best practice was acting before problematic behaviors began, so interventions were more manageable (Tier 1 Supports, 2019). MTSS, such as SWPBIS, emerged as potentially useful frameworks for addressing student needs and improving student outcomes (Freeman et al., 2016). The PBIS/MTSS framework provided a continuum of support for enabling educators to address the full range of student needs and experiences ("SWPBIS for Beginners," n.d.). Classroom disruptions reduced student achievement not only for the offending student, but also for the other classmates (Christofferson & Callahan, 2015). PBIS reduced student ODRs, especially when implemented with fidelity (Houchens et al., 2017). Schools implementing PBIS with fidelity reported school-level benefits, including decreases in problem behavior, increases in academic engaged time, and improved perceptions of school safety (Swain-Bradway, Swoszowski, Boden, & Sprague, 2013). As a result of using the same methods for teaching academics to students for behavior, schools reported decreased problem behavior, more instructional time, increased perceptions of safety, more positive school and classroom environments, and greater

student achievement (Schmitz, 2018). Caldarella et al. (2011) compared the first year to the last year of an SWPBS program, finding the treatment school saved 222 student and administrator hours, due to the reduced number of office discipline referrals (p. 9). PBIS programs contributed to the development of a positive school climate, school safety, and improved student–educator relationships, as evidenced by children considering school a safe place with an adult with whom students talked with and received support ("SWPBIS for Beginners," n.d.).

The State of Missouri evaluated public schools annually, providing APRs to each utilizing the Missouri School Improvement Program 5. The APR for middle school buildings was based on student performance scores derived from the MAP assessments, which students completed annually in the subjects of English/language arts, math, and eighth-grade science, in addition to a subgroup of student achievement. Results were not available until the next school year had begun, delaying APR score dissemination until after the first quarter of the following year. Per the Department of Elementary and Secondary, schools were required to meet the 90/90 expectation for student attendance, as defined as 90% of students attending school at least 90% for the daily attendance average. The Comprehensive Guide to the Missouri School Improvement Program (2014) included the following factors that influenced middle schools for APR, as shown in Table 4.

Table 4

Factors Influencing the Annual Performance Report for Middle Schools

Factor	Description
Academic achievement	Students must meet or exceed state standards or demonstrate ongoing improved performance.
Subgroup achievement	Evaluation occurred according to student subgroups, including those of similar racial or ethnic backgrounds, socioeconomic statuses, and disability statuses, as well as English language learners, with group achievement upheld.
Attendance rate	Schools must display attendance percentages according to state standards or show improvement over time.

When teachers educated students to use relevant social skills for themselves and with others, experts described school climates as more positive and safer learning environments and student–educator relationships as more trusting and respectful ("SWPBIS for Beginners," n.d.). Adult–student trusting relationships resulted from positive school and classroom climates, experiences of academic and social success, predictable school routines and support, and positive modeling ("SWPBIS for Beginners," n.d.).

Attendance

Roby (2003) researched the many factors that played a direct or indirect role related to student achievement and found a chief concern to be absenteeism. Across the country, more than eight million students missed so many days of school that students became academically at risk ("The Problem," 2018, para. 1). Roby found lower attendance rates detrimental to academic achievement; therefore, improved attendance could be a direct indicator of students' academic achievement improvements (Demir & Akman Karabeyoglu, 2016). Students missed educational time when absent from class.

Demir and Akman Karabeyoglu indicated students' commitment to school was the most important predictor of absenteeism. In fact, chronically absent students viewed relationships (or lack thereof) with teachers as the most important factor affecting school attendance (as cited in Killian, 2015). Students who lived in communities with high levels of poverty were four times more likely to have chronic absenteeism than their peers (Attendance Works, 2018b, para. 7). The high rate of absenteeism often occurred for reasons beyond a student's control, such as unstable housing, unreliable transportation, and lack of access to health care (Attendance Works, 2018b). Based on the school of study's attendance data provided by the district, approximately 75% of students qualified for the free and reduced lunch program.

Clearly, working to improve attendance at all school levels benefited students as well as the community at large ("What Is PBIS," n.d). The attendance rate was important, because students were more likely to succeed in academics when attending school consistently ("Why Attendance Matters," 2018). Using PBIS to refocus attention on positive behaviors reduced problem behaviors, improved perceptions of school safety, and increased student success, which led to fewer detentions and suspensions and kept students in class ("What Is PBIS," n.d). Both teachers and students had a difficult time building skills and maintaining progress if a large number of students were frequently absent; as students fell behind in academics, each faced an increased likelihood of getting into trouble with the law and causing problems in their communities ("Why Attendance Matters," 2018). Students who felt a sense of community and acceptance at school tended to make more effort to attend ("What Is PBIS," n.d). In addition, students who knew teachers cared were far more likely to come to school (Killian, 2015).

Chronic absence was defined as missing so much school, for any reason, a student became academically at risk. According to Attendance Works, missing a minimum of 10% of class days, whatever the reason, was noted as chronic absence (as cited in Leong, 2016, p. 54). Chronic absenteeism increased achievement gaps at the elementary, middle, and high school levels (Balfanz & Byrnes, 2012). Reducing chronic absence worked well in the three-tiered reform systems successfully implemented in schools and districts across the United States (Attendance Works, n.d.a). Tier 1 represented universal strategies to encourage good attendance for all students; Tier 2 provided early intervention for students who needed more support to avoid chronic absences; and Tier 3 included intensive support for students who faced the greatest challenges in getting to school (Attendance Works, n.d.a). According to the National Center for Student Engagement, high-achieving schools had high attendance rates when parents, school leaders, and community members worked together to focus on reducing absences and truancy ("Why Attendance Matters," 2018). Students from poor homes already faced a disadvantage in school and in life. According to Balfanz and Byrnes (2012), one of the best chances these children had at success was regular school attendance. If a student struggled with making it to class, Tier 2 provided early intervention for students who needed more support to avoid chronic absence and offered intensive support for students who faced the greatest challenges to getting to school (Attendance Works, n.d.a).

When educators tracked attendance and discipline statistics, parallels emerged between the two ("What Is PBIS," n.d.). State and district policies encouraged every student to attend school every day and supported school districts, schools, nonprofits, communities, and parents in using evidence-based strategies to ensure optimal attendance

(Balfanz & Byrnes, 2012). Research revealed missing 10% of the school year, or about 18 days in most school districts, negatively affected a student's academic performance ("The Problem," 2018, para. 1). Killian (2015) proposed 10 ways instructors inspired students to attend class: (a) demonstrating passion in their jobs, (b) letting students know they are important, (c) urging students to succeed, (d) promoting participation in extracurricular activities, (e) introducing social-emotional learning into the classroom, (f) drawing upon behavior support programs when needed, (g) engaging students in programs that promote adventure, (h) examining and reconfiguring classroom management for optimum success, and (i) engaging parents in their children's education.

Tier 1 prevention strategies included creating an engaging school climate, fostering positive relationships with students and families, understanding the relationship between absences and student achievement, monitoring chronic absence data, recognizing good and improved attendance, and identifying and addressing common barriers ("Attendance Works, n.d.a). In the researcher's experience at the school of study, similar strategies were in place to accomplish the goal of improving average daily attendance, including communication with students and parents regarding the impact of absences on student achievement, as well as frequent recognition of good and improved attendance by students.

Tier 2 early intervention strategies included personalized early outreach, an action plan to address barriers and increase engagement, and caring mentors (Attendance Works, n.d.a). In the researcher's experience, the school of study maintained a list of students who attended school 90% of the time or less. School administrators met with these students and parents to establish action plans involving adults in the school who had

a relationship with the student. Research noted students who missed 10% of the school, or about 18 days in most school districts, negatively related to a student's academic performance (Attendance, 2018b). A school can have average daily attendance of 90% and still have 40% of the students chronically absent, because on different days, different students made up the 90% (Balfanz & Byrnes, 2012, p. 3).

The Student Risk Screening Scale (n.d.) assessment was described as a universal behavioral tool to assist teachers identify students at risk for behavioral problems in the classroom. Tiered support systems were also appropriate responses to data collected from universal behavioral tools (Sandomierski, Kincaid, & Algozzine, 2007). The methods may be particularly useful with students whose behavioral problems did not improve, even in the face of Tier 1 activities. With the Student Risk Screening Scale, teachers identified and supported the students most at risk for behavioral issues, and provided the students with Tier 2 and Tier 2 programs (Sandomierski et al., 2007). The school of study used the tool to identify risk factors such as stealing, lying, cheating, behavior problems, peer rejection, low academic achievement, negative attitude, peer rejection, and aggressive behavior. Other students who benefited included those who were emotionally flat, shy/withdrawn, sad/depressed, anxious, or lonely.

Tier 3 specialized supports included coordinated school and interagency response, with legal intervention as a last resort (Attendance Works, n.d.a). In the researcher's experience, the school of study maintained a list of students who missed 20% or more school days, involved counseling resources, and, in some cases, provided legal authorities with truancy reports. Mayors and governors played critical roles in leading interagency task forces that brought health, housing, justice, transportation, and education agencies

together to organize coordinated efforts to help every student attend school (Balfanz & Byrnes, 2012).

Student Achievement

By the mid-19th century, academics became the sole responsibility of public schools (American Board, 2015). PBIS was not implemented independently of academic instruction; rather, PBIS practices and systems aligned with and integrated into academic instruction, professional development, and school improvement goals, among other elements (Positive Behavior Support, 2018). Tobin and Sugai (1999) found correlations between grade point average and specific types of ODR behaviors, such as fighting, harassing, threats of violence, and nonviolent misbehavior for boys in sixth grade, with the frequency of discipline referrals, predictive of chronic discipline problems in later middle school years, including suspensions in Grade 9. High rates of suspensions were related to lower schoolwide academic achievement and standardized test scores (U.S. Department of Education, 2014).

The U.S. Department of Education employed an analysis of variance and structural equation modeling to determine the significance and strength of the relationship between academic skills and behavior variables (as cited in McIntosh, Flannery, Sugai, Braun, & Cochrane, 2008). The results showed significant interactions between academic scores and office discipline referrals, both within and across grades (McIntosh et al., 2008). When students failed, educators assessed causes of low performance and the interventions previously used (Achievement Strategies, 2013). Teachers drew upon a range of behaviors to help students who were failing, including providing encouragement, involving the parents, offering help, holding students

accountable for completing assignments, and identifying underlying problems, such as learning or other disabilities (Teach 4 the Heart, n.d.).

Researchers consistently revealed the correlation between the amount of time spent providing instruction and student achievement (Putnam, Horner, & Algozzine, 2013). When a student was failing, teachers needed to intervene to reduce or eliminate low performance and subsequent failure (Achievement Strategies, 2013). With proper interaction and fewer disciplinary issues in the classroom, teachers focused on academics to increase student achievement (Special School District, n.d.).

At the Centennial Arts Academy, a K–5 elementary school in Gainesville, Florida, the PBIS team developed, posted, and shared expectations with students at a beginning-of-the-school year pep rally. The rally led to students feeling excited about the recognition received for individual accomplishments based on the respective expectations (Crumley, 2016). Because of the district's efforts, the school received Florida's Highest Student Attendance award, due to an impressive 97% attendance rate, and the frequency of incidents requiring major consequences drastically dropped by 65% (Crumley, 2016, para. 3). When PBIS was implemented with fidelity over time, students and educators experienced improvements in emotional regulation, school climate, perception of school safety, academic engagement, and achievement (Positive Behavior Support, 2018).

Office Discipline Referrals

Schools were forced to meet the needs of citizens, legislative policymakers, administrators, teachers, families, and children, while individual instruction suffered (Irvin et al., 2004). Teachers and students deserved safe school environments and supportive classrooms conducive to teaching and learning (U.S. Department of

Education, n.d.). One of the principal features of PBIS for students with serious problem behaviors was described as a commitment to a collaborative team approach (Kincaid & Dunlap, n.d.). PBIS strategies emphasized classroom management and preventive school discipline, together with high-quality academic instruction in a positive and safe school climate, maximized success for all students (Positive Behavior Support, 2018). Assumptions with schoolwide behavioral support programs were that all school staff members, in all school settings actively taught and consistently reinforced appropriate behavior. In the described scenario, the number of students with serious behavior problems decreased and the school climate improved (Irvin et al., 2004). PBIS programs implemented daily worked to reduce maladaptive behaviors (Strunk & Rossi, 2016).

The validity of using ODR measures to assess or index the schoolwide behavioral climate and intervention effectiveness ultimately depended on the school's efforts in establishing policies and procedures to minimize or at least take into account the variability of staff application of ODR measures (Irvin et al., 2004). Creating a supportive school climate, and decreasing suspensions and expulsions, required close attention to the social, emotional, and behavioral needs of all students (U.S. Department of Education, n.d.). Schools needed interventions prior to the disciplinary process, but created a continuum of developmentally appropriate and proportional consequences for addressing ongoing and escalating student misbehavior after attempting all appropriate interventions (U.S. Department of Education, 2014). Users of PBIS focused on promoting positive behaviors and developing preventive supports to enhance and align with the procedures outlined in discipline handbooks and codes of conduct (Positive Behavior Support, 2018). To ensure expectations and consequences were clear, written discipline policies should

define offense categories and base disciplinary penalties on specific and objective criteria whenever possible (U.S. Department of Education, 2014). The expectations should promote respect for others in the school community and clearly state engaging in problem behaviors was unacceptable (U.S. Department of Education, 2014). When schools implemented PBIS with fidelity, over time, students and educators experienced reductions in major disciplinary infractions and aggressive behavior, and improvements in school safety (Positive Behavior Support, 2018).

Quality Professional Development and Steps for Process

Correct PBIS implementation involved positive social interactions between students, teachers, and administrators; behavioral expectations taught in a socially and age-appropriate way; a variety of methods for reinforcing demonstration of positive behavior; and teams that used fidelity and student-level data to drive instructional decisions (Bruhn, Gorsh, Hannan, & Hirsch, 2014). PBIS implementation involved explicitly prompting, modeling, practicing, and encouraging expected positive social skills across settings and individuals (Positive Behavior Support, 2018). To implement PBIS correctly, schools needed to identify an on-site team representative and group to learn the appropriate steps. The group should include approximately 10 members and consist of regular and special school district teachers, a counselor, an administrator, and possibly others (Positive Behavior Support, 2018). To be an ideal PBIS team, Bubenik (2017) suggested the group represented all members of the community, including both general and special education teachers, interventionists, elective teachers, parents, office staff, cafeteria workers, and maintenance workers, as all were part of the campus. At the core of the PBIS implementation process was the leadership team (Betters-Bubon et al.,

2016). As with many teams, the organizer selected candidates for several roles, including team leader, recorder, timekeeper, data specialist, behavior specialist, administrator, communications, and PBIS coach (Bubenik, 2017).

Principal support was a critical variable for implementing and sustaining evidence-based practices (McIntosh, Kelm, & Canizal Delabra, 2016). Integrating PBIS into existing school counseling programs maximized school counselors' efforts to best serve every student (Goodman-Scott, 2018). By building an organization and gathering multiple representatives, individuals across the whole campus became active stakeholders in the success or failure of PBIS. Having proper PBIS team support eased efforts in accomplishing the school's goals (Bubenik, 2017). PBIS was not an intervention, practice, program only for special education students, or a fad; PBIS existed for 20 years and the framework was visible in all 50 states (Positive Behavior Support, 2018, p.2).

The school that introduced PBIS needed to focus on three to five behavioral expectations, positively stated and easy to remember (Positive Behavior Support, 2018). At the beginning of the year, educators concentrated on building and promoting campus wide behavior expectations (Bubenik, 2017). The next step was for PBIS team members to obtain staff understanding and buy-in with regard to behavioral expectations among the entire staff to ensure at least 80% of a school's staff members supported the selected expectations, which included promoting respect, safety, and responsibility (Positive Behavior Support, 2018, p. 1). The building leadership team at the researched school decided to teach behavior by showing students a poor example first, and then demonstrating the expected appropriate behavior as outlined in PBIS best practices (Tier 1 Supports, 2019).

As seen in Table 6 the school of study used the following behavioral expectations during the years between 2002 and 2008: Be Ready, Be Responsible, and Be Respectful. In 2003, the study site's staff selected these universal behavioral expectations and provided descriptors for arrival-to-school priority behaviors. Staff who supervised the arrival-to-school activity provided input in creating the universals. The PBIS team posted the set of expectations in the office and the building's PBIS universal schoolwide matrix. The team also provided lesson ideas and plans to appropriate staff members to teach the expected behaviors in the setting. The advisory class teacher had students model the behavior correctly by simulating behaviors that began at home and continued until students arrived at school, so students knew the exact expectation. Appropriate behaviors included packing student planners, school supplies, and other appropriate belongings in the book bags and being on time. Administrators, office staff, and teachers encouraged the appropriate behaviors and awarded students Tiger Tickets (redeemable in a special school store) for displaying such behaviors. See Table 5 for a list of arrival behavior expectations and activities according to the Three Rs.

Table 5

Behavior Expectations and Activities for Arrival to School

Three Rs	Arrival-to-school priority behavior
Be Ready	Bring planner and all supplies, including homework
Be Responsible	Follow school rules Be on time Leave prohibited items at home
Be Respectful	Follow dress code

Note. Adapted from the school of study, 2003.

In 2003, upon selecting the universal behavioral expectations of focus, the study site's staff created descriptors for priority behaviors in halls and stairs. Staff who supervised behaviors in the specific areas provided input in creating the universals. The PBIS team posted the expectations in the hallways, stairs, and the building's PBIS universal schoolwide matrix. The PBIS leadership team provided lesson ideas and plans to appropriate staff members for teaching the expected behaviors in the setting. The advisory class teacher had students model the behavior correctly in the actual hallways and on the stairs of the school so students knew the expectations and inappropriate behaviors. The administration and teachers encouraged the appropriate behaviors and awarded students Tiger Tickets for displaying the appropriate behaviors in all hallways and stairwells. Table 6 shows a list of expected behaviors.

Table 6

Behavior Expectations and Activities for Halls and Stairs

Three Rs	Halls and stairs priority behaviors
Be Ready	Have planner at all times Walk with a purpose
Be Responsible	Walk and talk Stay to the right Use inside voices Walk safely
Be Respectful	Keep hands and feet to yourself Watch where you are going

Note. Adapted from the school of study, 2003.

Next, the study site's staff considered and adopted restroom priority behaviors. Staff who supervised the restrooms provided input in creating the universals, which the PBIS team posted in restrooms and in the building's PBIS universal schoolwide matrix. The PBIS leadership team provided lesson ideas and plans to appropriate staff members

for teaching the expected behaviors in the setting. The advisory class teacher had students model the behavior correctly in the building restrooms so students knew the expectations, as well as the inappropriate behaviors. The school administration and teachers encouraged the appropriate behaviors and awarded students Tiger Tickets for displaying the appropriate behaviors as appropriate given the privacy of the setting.

In 2003, the study site's staff considered and decided on which universal behavioral expectations to focus on — Be Ready, Be Responsible, and Be Respectful — and provided descriptors for cafeteria priority behaviors. Staff who supervised the cafeteria provided input in creating the universals. The PBIS Team posted the set of expectations in the cafeteria and in the building's PBIS universal schoolwide matrix. The PBIS Leadership Team provided lesson ideas and plans to appropriate staff members to teach the expected behaviors in the setting. The administration had students model the behavior correctly in the actual cafeteria of the school of study's building so students knew the expectations as well as inappropriate behaviors. Administration and teachers encouraged the appropriate behaviors and awarded students Tiger Tickets for displaying the behaviors when possible, given the privacy of the setting (see Table 7).

Table 7

Behavior Expectations and Activities for Restrooms

Three Rs	Restroom priority behaviors
Be Ready	Have planner/pass Be timely
Be Responsible	Wash hands
Be Respectful	Clean up after yourself

Note. Adapted from the school of study, 2003.

Staff who supervised the cafeteria provided input in creating the universal behavior expectations for cafeteria priority behaviors. The PBIS team posted the set of expectations in the cafeteria and in the building's PBIS universal schoolwide matrix; the PBIS leadership team provided lesson ideas and plans to appropriate staff members for teaching the expected behaviors in this setting. The administration had students model the behavior correctly in the actual school cafeteria so students knew the expectations and inappropriate behaviors. Administrators and teachers encouraged the appropriate behaviors and awarded students Tiger Tickets for displaying these behaviors during breakfast and lunch sessions. Table 8 shows the cafeteria priority behaviors with regard to the Three Rs.

Table 8

Behavior Expectations and Activities for the Cafeteria

Three Rs	Cafeteria priority behaviors
Be Ready	Have lunch money turned in by 9 a.m.
Be Responsible	Clean up after yourself Be in a single-file line while waiting your turn
Be Respectful	Remain in your seat until called on Use inside voices Keep food, hands, and feet to yourself

Note. Adapted from the school of study, 2003.

The PBIS team posted the set of expectations in the classrooms and in the building's PBIS universal schoolwide matrix, with lesson ideas and plans provided to appropriate staff members for teaching the expected behaviors in this setting. The teachers had students model the behaviors correctly in all the classrooms at the school of study so that students knew the expectations and inappropriate behaviors. Administrators and teachers encouraged the appropriate behaviors, and teachers awarded students Tiger

Tickets for displaying these behaviors. Table 9 shows the classroom priority behaviors selected by the school of study.

Table 9

Behavior Expectations and Activities for the Classroom

Three Rs	Classroom priority behaviors
Be Ready	Have all supplies Be awake and alert Be on time
Be Responsible	Fill in planner Complete work and participate Follow entry/exit procedures
Be Respectful	Make eye contact Be honest Comply with requests Ask before acting Take care of materials Keep hands and feet to yourself

Note. Adapted from the school of study, 2003.

The study site's staff decided on which universal behavioral expectations to focus and provided descriptors for library priority behaviors. Staff who supervised the library provided input in creating the universals. The PBIS team posted the set of expectations in the library and the building's PBIS universal schoolwide matrix. The PBIS leadership team provided lesson ideas and plans to appropriate staff members for teaching the expected behaviors in the setting. The teachers and librarian had students model the behaviors correctly in the actual library of the school so students knew the expectations and inappropriate behaviors. Administrators, teachers, and the librarian encouraged the appropriate behaviors. Teachers and the librarian awarded students Tiger Tickets for displaying the appropriate behaviors. Table 10 presents in detail the expected behaviors and activities in the library.

Table 10

Behavior Expectations and Activities for the Library

Three Rs	Library priority behaviors
Be Ready	Have planner/pass
Be Responsible	Return books on time Return to class promptly Get books and leave Sign in/out appropriately
Be Respectful	Treat books with care Be quiet going to, while in, and returning to library

Note. Adapted from the school of study, 2003.

As seen in Table 11, the school of study used the following behavioral expectations between the years of 2002–2008: Be Ready, Be Responsible, and Be Respectful. In 2003, the study site's staff considered and decided on the universal behavioral expectations for gym/locker room priority behaviors, which the PBIS team posted in the gyms, locker rooms, and the building's PBIS universal schoolwide matrix. The PBIS leadership team provided lesson ideas and plans to appropriate staff members to teach the expected behaviors in the setting, after which the physical education teachers had students model the behaviors correctly in both school gyms to illustrate expectations and inappropriate behaviors. Administrators and teachers awarded students Tiger Tickets for displaying the appropriate behaviors. Shown in Table 11 are the behavioral expectations for the gym and locker room.

Table 11

Behavior Expectations and Activities for the Gym/Locker Room

Three Rs	Gym/locker room priority behaviors
Be Ready	Get there on time Dress appropriately Have gym clothes and get dressed quickly, then exit the locker room
Be Responsible	Keep hands and feet to self Follow teacher and game instructions Clean up after yourself
Be Respectful	Show good sportsmanship Take proper care of equipment Respect others' privacy (use of recording devices or cameras is prohibited)

Note. Adapted from the school of study, 2003.

As in other specific areas, the study site's staff decided on which universal behavioral expectations to focus on — Be Ready, Be Responsible, and Be Respectful — and provided descriptors for field trips/in-public priority behaviors. Staff who supervised field trips and in-public opportunities provided input in creating universals for those times students left school grounds on a trip. The PBIS team posted the set of expectations on the building's PBIS universal schoolwide matrix and shared them with students before leaving the school grounds; the PBIS leadership team provided lesson ideas and plans to appropriate staff members to teach the expected behaviors in the setting. The teachers had students model the behaviors correctly in all classrooms in the school of study by simulating being out of the building in various settings and on the bus so students knew the expectations as well as inappropriate behaviors. Administrators and teachers encouraged the appropriate behaviors, and teachers awarded students Tiger Tickets for displaying them. Priority off-campus behaviors appears in Table 12.

Table 12

Behavior Expectations and Activities for Field Trips and Being in Public

Three Rs	Field trips/in-public priority behaviors
Be Ready	Bring necessary supplies (lunch and field trip forms) Be on time
Be Responsible	Keep hands and feet to yourself Follow directions Be safe (stay together) Good behavior and representative of your school
Be Respectful	Use manners and be polite

Note. Adapted from the school of study, 2003.

As seen in Table 13 the school of study used the following behavioral expectations between the years of 2002–2008: Be Ready, Be Responsible, and Be Respectful. In 2003, the study site's staff decided on which universal behavioral expectations to focus and provided descriptors for bus priority behaviors, as shown in Table 13 bus drivers and the administration provided input in creating the universals. The PBIS team posted the set of expectations in the buses and on the building's PBIS universal schoolwide matrix, with the leadership team sharing lesson ideas and plans with appropriate staff members to teach the expected behaviors in the setting. The advisory class teacher had students model the behavior correctly in the classroom of the school of study by using chairs to simulate the setting of a school bus, so students knew exactly what was expected and could avoid the inappropriate behaviors. Administration shared the expectations with the bus drivers to encourage the appropriate behaviors and to award students Tiger Tickets for displaying appropriate behavior on all bus rides, including to and from school and during field trips. Table 13 lists expected behaviors and activities for students when riding the bus.

Table 13

Behavior Expectations and Activities for Riding the Bus

Three Rs	Bus priority behaviors
Be Ready	Stay seated Be on time
Be Responsible	Keep hands and feet to yourself Follow school bus safety code Follow bus driver's directions
Be Respectful	Use inside voices Use manners

Note. Adapted from the school of study, 2003.

As seen in Table 14 the school of study used the following behavioral expectations between the years of 2002–2008: Be Ready, Be Responsible, and Be Respectful. The study site's staff decided on which universal behavioral expectations to focus and provided descriptors for office priority behaviors. Office staff and administration provided input in creating the universals, and the PBIS team posted the set of expectations in the office and on the building's PBIS universal schoolwide matrix. The PBIS leadership team provided lesson ideas and plans to appropriate staff members to teach the expected behaviors in the setting. The advisory class teacher had students model the behavior correctly by taking students on a trip to the office of the school of study, so students knew exactly the expectations and inappropriate behaviors. Administration, teachers, and office staff encouraged the appropriate behaviors and awarded students Tiger Tickets for displaying them. Office priority behavior appears in Table 14.

Table 14

Behavior Expectations and Activities for the Office

Three Rs	Office priority behaviors
Be Ready	Have planner/pass Have an explanation
Be Responsible	Notify secretary or adult who you need to see
Be Respectful	Use manners Wait quietly

Note. Adapted from the school of study, 2003.

As seen in Table 15 the school of study used the following behavioral expectations between the years of 2002–2008: Be Ready, Be Responsible, and Be Respectful. In 2003, the study site's staff considered and decided on which staff and administration provided input in creating universal behavioral expectations and describing assembly priority behaviors. The PBIS team posted the set of expectations on the building's PBIS universal schoolwide matrix; the advisory class teachers reviewed the expectations the day before the assembly and then again on the day of the assembly. The PBIS leadership team provided lesson ideas and plans to appropriate staff members to teach the expected behaviors in the researched setting. The advisory class teachers in each grade level had students model the behaviors correctly in the gym of the school of study, so students knew exactly the expectations, along with the inappropriate behaviors. Teachers and administration reviewed expectations at the beginning of assemblies, as well. Administration and teachers encouraged the appropriate behaviors and awarded students Tiger Tickets for displaying them. Table 15 displays the selected universal behaviors for school assemblies.

Table 15

Behavior Expectations and Activities for Assemblies

Three Rs	Assemblies priority behaviors
Be Ready	Stay seated and quiet with class Have appropriate belongings for dismissal
Be Responsible	Keep hands and feet to yourself Listen to all adults
Be Respectful	Listen to speakers quietly Be positive Applaud when appropriate

Note. Adapted from the school of study, 2003.

The study site's PBIS team created a matrix of what behavioral expectations looked like, sounded like, and felt like in all nonclassroom areas, identifying three positive examples for each area. The staff strategically placed matrixes in all locations, and the adults responsible for supervising students discussed, modeled, and followed through on enforcement in a proactive manner. Even afterschool programs had an opportunity to benefit by utilizing evidence-based education initiatives, such as PBIS to promote a positive environment, support participant and staff behaviors, and enhance outcomes (Farrell, Collier-Meek, & Pons, 2013), including role-playing improper behaviors, followed by modeling the appropriate way, so all students were aware of expectations. Areas in addition to the classroom included halls and stairs, restrooms, cafeteria, library, gym and locker rooms, field trips and in-public locations, buses, office, and assemblies, as well as during school arrival time. In the researcher's experience, posting universals and role-playing were integral components to students, staff, and parents being aware of expectations and, to a certain degree, adults' approaches and responses at the school of study in disciplinary situations before, during, and after

occurrences. Administration, staff, and bus drivers awarded students Tiger Tickets for meeting the respective expectations in each setting. The school of study reported the entire staff supported the PBIS team's created matrix. The school of study also left an empty bulleted spot for an expectation unique to a setting, such as what it looked like to be ready in an art room or family and consumer science kitchen, as compared with a traditional classroom setting. The matrix in Table 16 appeared in the student handbook, so students and parents were aware of universal behavioral expectations in all settings.

Table 16

PBIS Matrix of Expectations for School of Study

Typical settings/context	Be Ready	Be Responsible	Be Respectful
Arrival	Bring planner and all supplies, including homework	Follow school rules, be on time, leave prohibited items at home	Follow dress code
Halls and stairs	Have planner at all times, walk with a purpose	Walk and talk, stay to the right, use inside voices, walk safely	Keep hands and feet to yourself, watch where you are going
Restrooms	Have planner/pass, be timely	Wash hands	Clean up after yourself
Cafeteria	Have lunch money turned in by 9 a.m.	Clean up after yourself, be in a single file line while waiting for your turn	Remain in seat until called on, use inside voices, keep food/hands/feet to yourself
Classroom	Have all supplies, be awake and alert, be on time	Fill in planner, complete work and participate, follow entry/exit procedures	Make eye contact, be honest, comply with requests, ask before acting, take care of materials, keep hands and feet to yourself
Library	Have planner/pass	Return books on time, return to class promptly, get books and leave, sign in/out appropriately	Treat books with care, be quiet going to/from and while in library
Gym/locker room	Get there on time, dress appropriately, have gym clothes and get dressed quickly, then exit locker room	Keep hands and feet to yourself, follow teacher/game instructions, clean up after yourself	Show good sportsmanship, take proper care of equipment, respect others' privacy (use of recording devices or cameras is prohibited)

Table 16 Continued

Typical settings/context	Be Ready	Be Responsible	Be Respectful
Field trips/in public	Bring necessary supplies (lunch, field trip forms), be on time	Keep hands and feet to yourself, follow directions, be safe (stay together), good behavior and representative of your school	Use manners and be polite
Bus	Stay seated, be on time	Keep hands and feet to yourself, follow school bus safety code, follow bus driver's directions	Use inside voices, use manners
Office	Have planner/pass, have an explanation	Notify secretary or adult who you need to see	Use manners, wait quietly
Assemblies	Stay seated and quiet with class, have appropriate belongings for dismissal	Keep hands and feet to yourself, listen to all adults	Listen to speakers quietly, be positive, applaud when appropriate

Note. Adapted from the school of study, 2003.

The school of study reported that the entire staff supported the PBIS team's created matrix. The school also left an empty bulleted spot for an expectation unique to the setting, such as what it looked like to be ready in an art room or Family & Consumer Science kitchen, compared with a traditional classroom setting.

Another essential element of PBIS was to use data to make decisions (Schmitz, 2018). As the school year progressed, an established team needed to gather discipline data and record campus trends (Bubenik, 2017). Decisions about where to conduct research and whom to include was known as sampling, which was an essential part of a study's research methods (Maxwell, 2013). As part of a school's approach to evaluation, the PBIS team could regularly collect complete information about all discipline incidents, staying consistent with applicable privacy laws (U.S. Department of Education, 2014). The data helped the team shape future efforts in addressing campus needs (Bubenik, 2017). The collected data, referred to as the "Big 5," included the details of how often, where, when, why, and who of each incident (Schmitz, 2018).

The first of the Big 5 data graphs for the results of the school of study, as displayed in Figure 2, included the average ODRs per school day per month. The total number of ODRs per month was often misleading, due to the difference in the number of school days per month. Determining the average occurred by dividing the number of ODRs per month by the number of school days for the month. More overall referrals could have occurred in one specific month than in another that did not have as many school days but had more referrals per day. The possible misinterpretation was a major reason for using the average ODRs per school day per month instead of overall total number of referrals per month. Examples of short months respective to the school of

study included August, due to the first day of school being halfway through the month, and December, during which the students were off for a week for winter break. Figure 2 shows the average number of ODRs per day.

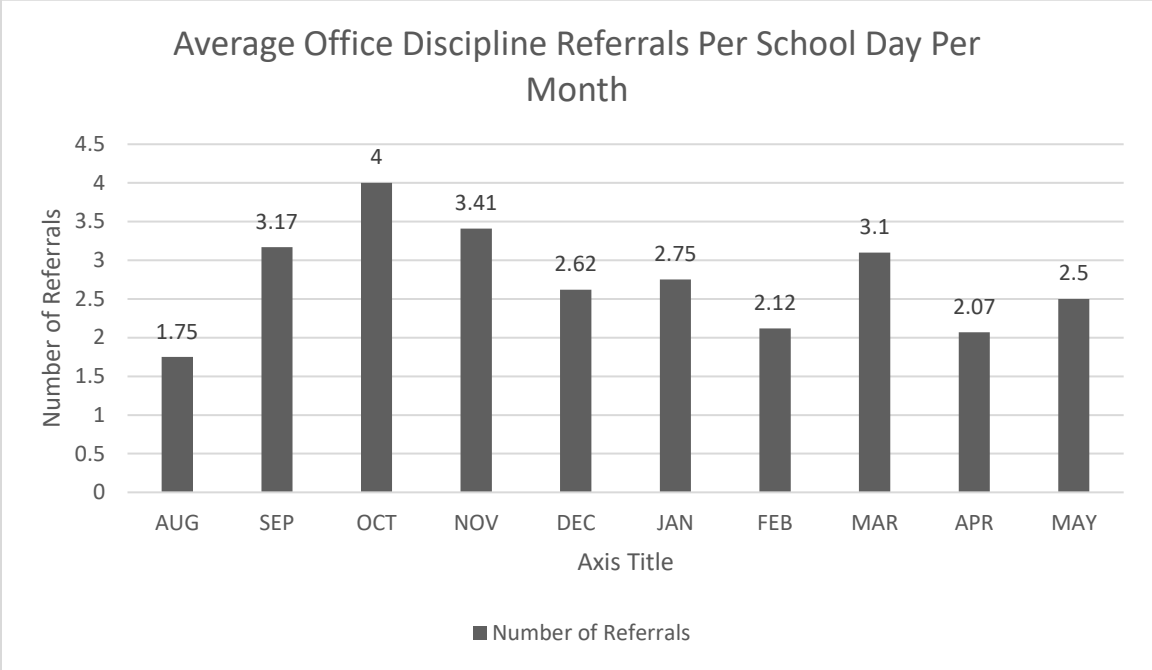

Figure 2. Recorded average office discipline referrals per school day per month. Adapted from the school of study, 2003.

PBIS originators identified the location in which the referred behavior occurred as part of the second Big 5 data, specifically one location, many locations, or clusters of locations (Critical Element, n.d.). In the researcher's experience, the school of study's PBIS team focused on hallway behaviors during the beginning of implementation, due to the high number of office discipline referrals and the location of inappropriate behaviors.

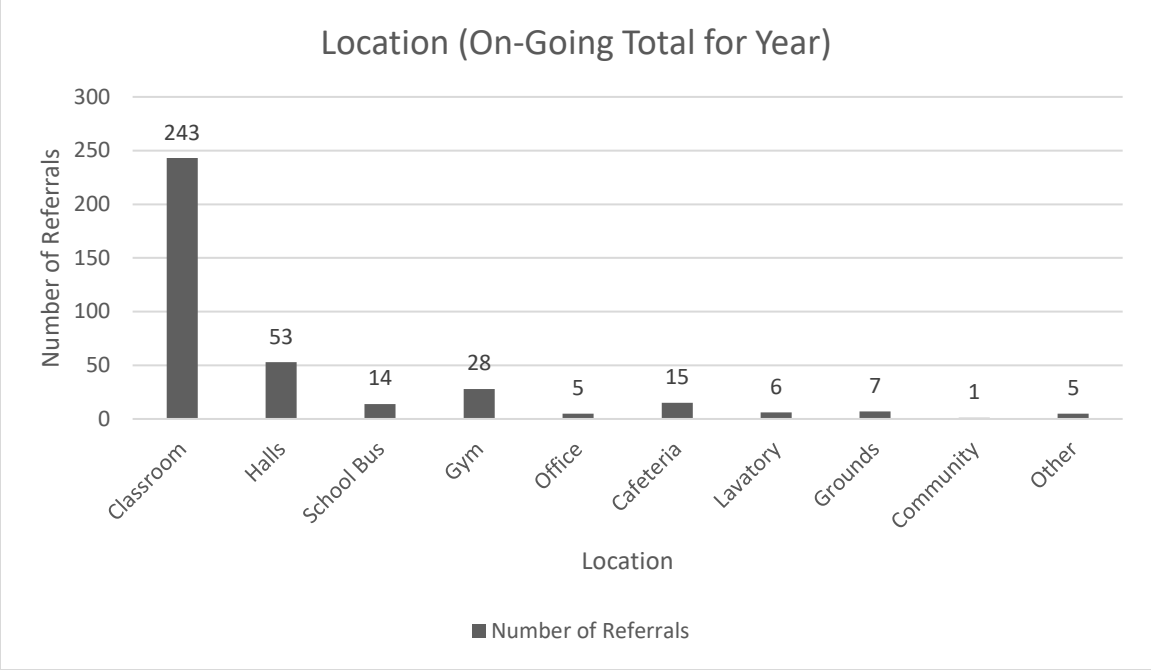

Figure 3. Location of inappropriate behaviors for school year during the first year of PBIS implementation. Adapted from the school of study, 2003.

The third of the Big 5 data questions focused on the types of behaviors recorded in ODRs by staff, as displayed in Figure 4. Staff considered whether the offense was one, a few, or many problem behaviors and which schoolwide expectations needed reteaching. As a result, lessons or role-playing of specific expected behaviors took place to decrease the high number of inappropriate behaviors. In the researcher's experience, the lessons and role-playing worked efficiently to decrease the respective behaviors chosen by all staff in all three grade levels.

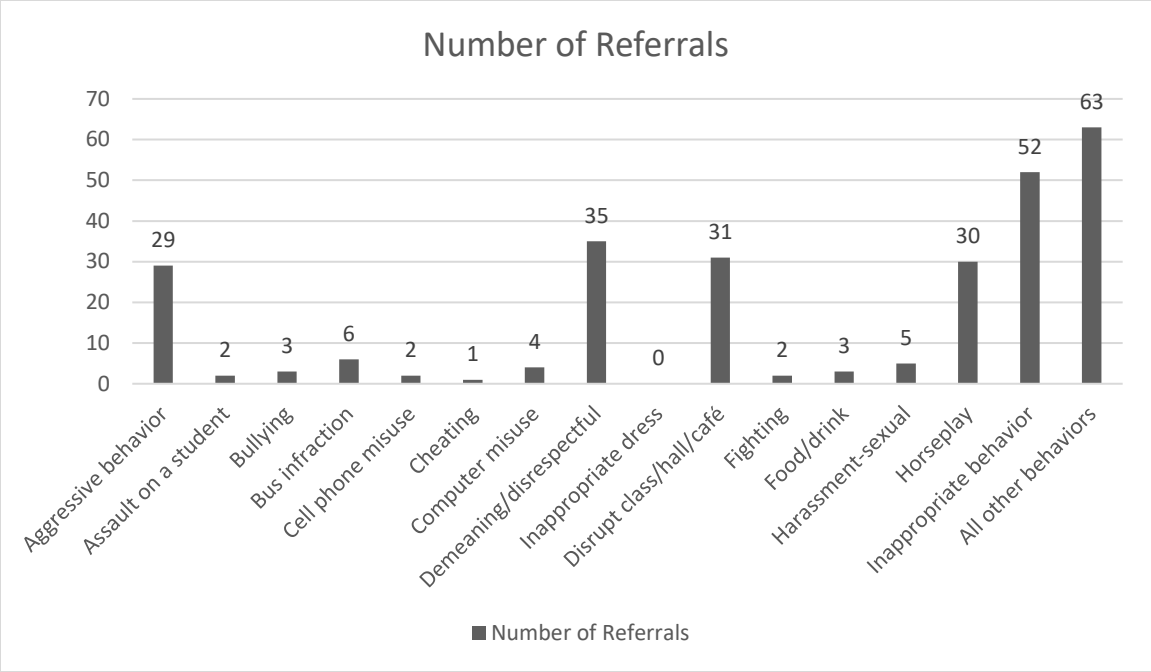

Figure 4. Types and number of inappropriate behaviors occurring during the first year of PBIS implementation. Adapted from the school of study, 2003.

The fourth of the Big 5 data questions was the specific time of day during which the student's behavior occurred; the results for the year are in Figure 5. Staff considered where the times fit into the daily schedule and how the data compared with ODRs by location. In the researcher's experience, the number of referrals was often highest following lunch periods. The school of study had three lunch periods.

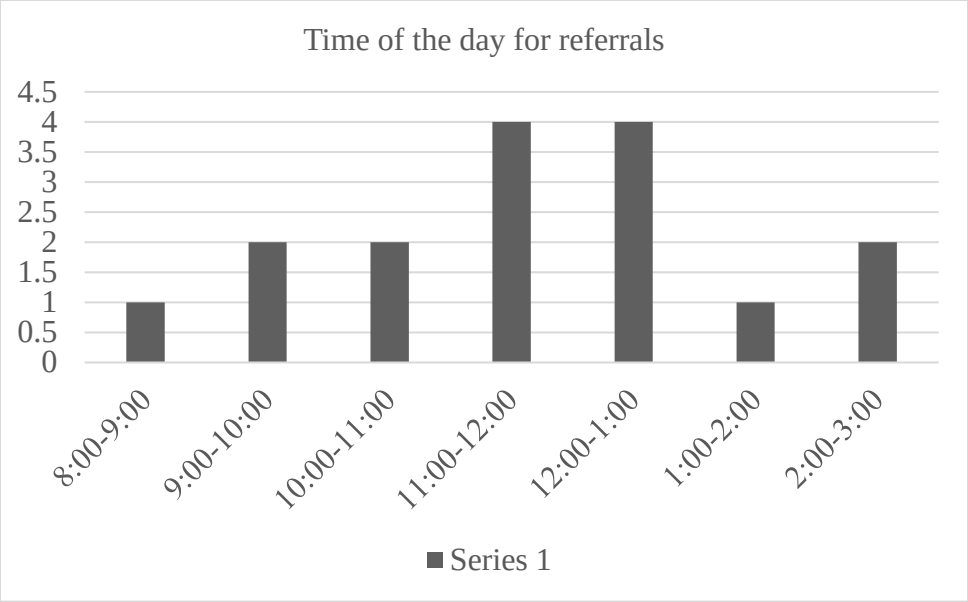

Figure 5. Time of day for inappropriate behavior occurring during the first year of PBIS implementation. Adapted from the school of study, 2003.

The last of the Big 5 data questions pertained to the number of referrals by students, as displayed in Figure 6. Staff considered whether a few students or many were receiving ODRs, what proportion of the student body had zero or one ODR to determine Tier 1, and what proportion of the student body had between two and five ODRs to determine Tier 2 actions. Staff used the data to identify whether the system needed to change, if the students' behaviors needed to improve, or both. Normally, grade-level teams received a list of frequent ODR names and the types of behaviors exhibited for further discussion and to determine if Tier 2 intervention was needed.

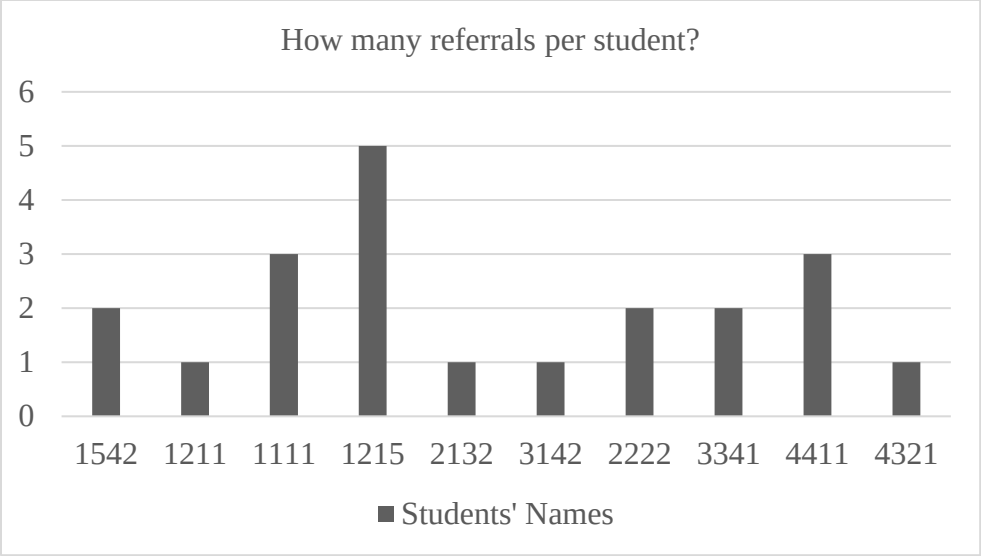

Figure 6. Number of ODRs a specific student received during the year. The four-digit numbers represent students' names. Adapted from the school of study, 2003.

On a monthly basis, the school of study's PBIS team analyzed the Big 5 data based on questions and shared the data with all staff at faculty meetings. The PBIS team shared proactive strategies to address findings of concern, such as locations or specific behaviors. Regular review of data allowed teams to identify problems before situations became chronic. Addressing a low-level behavior was easier than trying to change ingrained behaviors demonstrated over time. With an overarching emphasis on using data to determine the effectiveness of its techniques, PBIS reflected the application of explicit values and evidence-based practices to build MTSS.

One of the Big 5 data components was where infractions occurred. After collecting data, the PBIS team identified a few hotspots throughout the school where misbehavior happened frequently. For example, the school of study identified hallways/stairs and the cafeteria as good places to address. Advisors planned and implemented lessons utilizing the matrix and specifically addressed the Three Rs. Staff modeled expectations in the appropriate way for students, and then students received time

to practice and model appropriate behaviors. The PBIS coach and team trained adults schoolwide, including bus drivers. Every adult trained in and taught the expected behaviors listed in the matrix. The adults modeled inappropriate and appropriate behaviors for students. If students participated in the modeling, they were only included in the appropriate behaviors. The modeling took place in all settings at the beginning of each school year and also as needed determined by then-current behaviors in the Big 5 reports shared in faculty and grade level team meetings.

The researcher noted the importance for all teachers to be consistent with expectations. For instance, if headphones were not permitted in classrooms, then headphones were not allowed in an art room, either. Every staff member was required to maintain consistency. PBIS focused on establishing social, emotional, and behavioral competence through promotion of a small set of behavioral expectations agreed upon, taught, and reinforced by all teachers across all settings. With regard to consequences, the emphasis was on the use of the most effective and most positive approach to address even the most severe problem behaviors.

In the researcher's experience, administrators also shared other data with staff in faculty meetings. Month-to-month comparisons allowed for evaluation of the then-current year against the previous one, which helped to determine the need for any preventive actions, such as modeling or lessons for high-frequency behaviors. As an example, if a high number of students received write-ups for horseplay in the hallways in December before the winter break, staff modeled appropriate hallway behaviors ahead of time and shared expectations for what walking in the hallway should look like, including keeping hands, feet, and other objects to oneself. Grade-level teams also discussed the

PBIS Big 5 data shared in faculty meetings to make decisions that impacted the students in the respective grade levels, including provision of lessons for specific behaviors. Grade-level teams also emphasized the use of awarding Tiger Tickets more in the settings or during a certain time of the school day, when high number of ODRs occurred, to improve the productivity expected in the respective setting. In the researcher's experience, referral reports included staff members' names to specifically engage the staff in conversations regarding interventions, strategies, and support, with the goal of lowering the number of disciplinary situations resulting in ODRs or escalated into situations requiring more severe consequences that could have been avoidable.

Summary

Throughout the United States, educators implemented PBIS in schools and classrooms. PBIS was a systematic and coordinated framework used to support positive behaviors from students and positive behavior interventions from educators. At the time of the study, PBIS had been implemented in schools for nearly 30 years with consistent outcomes showing great benefits.

Lewis and Sugai (1999) identified several success factors across schools that implemented PBIS, including (a) awareness of desired behaviors by over 80% of the student and teacher population; (b) recognizing students and staff for their contributions to a safe school environment; (c) at least 70% of students having not received an ODR for a behavioral offense; (d) identification of those students most at risk of behavioral infractions; and (e) familiarity and review of behavioral infraction data for ongoing PBIS planning and implementation.

The school of study implemented PBIS in the 2003–2004 school year to reduce the number of ODRs and improve the school building's climate and culture. PBIS leadership team members and the special school district representatives trained the school of study's staff, who received professional development opportunities for learning. The professional development was extensive and ongoing to support the team in implementation and continued problem solving.

Chapter Three: Research Method and Design

Introduction

Chapter Two included the research on the history and specifics of PBIS. In the researcher's experience and study, considering the implementation at the school of study was important to determine if differences existed between pre and post PBIS implementation and schoolwide strategies and average daily attendance, failing grades, MAP test proficiency and advanced scores, and the number of discipline referrals. Student achievement scores within the researched school, specifically in English/ language arts, math, and science, were below state average before the implementation of PBIS. The researcher explored a possible difference between the pre and post implementation of PBIS with fidelity and student achievement scores, as measured by MAP test scores and the year-end number of failing grades. In addition, the researcher investigated the implementation of PBIS with fidelity and the year-end number of discipline referrals and average daily attendance percentages. Implementing PBIS in a school at any grade level required using the essential elements and personalizing the plan to the school culture and climate (Langley, n.d.).

Purpose

The purpose of this study was to investigate a possible difference between implementation of PBIS with fidelity and student achievement scores, as measured by MAP test scores and the year-end total numbers of failing grades, discipline referrals, and average daily attendance percentages, to determine whether the researched school should reimplement PBIS to improve student achievement scores.

The researcher examined and analyzed data from the 2002–2003 through 2007–2008 school years. Also investigated were then-current responses from teachers on PBIS implementation, as collected through a Google Forms survey involving a mixed methods approach to question staff during the study's time frame.

Instruments and Methodology

Maxwell (2013) defined mixed methods research as the joint use of qualitative and quantitative methods in a single study, with three purposes for combining methods. The researcher used triangulation, implementing different checks to see if data with different strengths and limitations supported a single conclusion (Maxwell, 2013). The researcher organized secondary school data in charts, used *z*-tests for difference in proportions, and collected responses through a mixed methods survey from staff who worked at the study site from 2002–2003 to at least 2003–2004, which also included the reimplementation of PBIS and one year after. The aim was to gain a better understanding of the research questions and possible differences between pre and post implementation of PBIS with fidelity, student achievement measured by the number of failing grades, MAP test proficiency and advanced percentages, attendance and the number of discipline referrals. The researcher received the year-end number of failing grades and average daily attendance percentages for the years 2002–2003 through 2005–2006, as collected by the district's technology department through retrieval from the Lemberger System; data for the 2006–2007 and 2007–2008 school years came from the school of study's secretary through retrieval from the School Information System (SIS). The researcher collected the percentages of students scoring proficient and advanced from the district's central office through the Missouri Department of Elementary and Secondary Education.

The year-end total number of discipline referrals from the 2002–2003 through 2007–2008 school years came from the PBIS team over the school year and through comparative discipline referral reports. The surveys provided information on teacher perceptions and understanding of PBIS implementation and the possible differences on student attendance, discipline, and achievement.

Surveys

After the researcher received approval from Lindenwood University's Institutional Review Board and the participating school district's superintendent (Appendix A), participants completed a survey electronically through Google Forms during the spring semester of the 2018–2019 school year. The researcher selected a mixed methods survey to strengthen the study, using Likert-scale and open-ended questions to maximize feedback potential. The selected participants served as staff members at the school of study in 2002–2003, the year before PBIS implementation, and at minimum through the 2003–2004 year of PBIS implementation.

Research Questions and Hypotheses

Four research questions and four hypotheses guided the study:

RQ1: What schoolwide behavior strategies were applied during PBIS implementation?

RQ2: What schoolwide attendance strategies were applied during PBIS implementation?

RQ3: What schoolwide academic instructional strategies were applied during PBIS implementation?

RQ4: How do teachers perceive the implementation of PBIS?

$H0_1$: A difference does not exist in the number of office referrals pre-to-post-implementation of PBIS.

$H0_2$: A difference does not exist in the number of failing grades pre-to-post-implementation of PBIS.

$H0_3$: A difference does not exist in the student achievement performance as measured by the Missouri Assessment Program for each subject content tested.

$H0_4$: A difference does not exist in the average daily attendance percentage pre-to-post-implementation of PBIS.

Research Study Site

The school of study was in a small town established in 1704 that was the oldest continuously populated White community, one of the largest in the United States, in its respective state two years before the founding of its bordering city. The school district was established in 1904, based on the need for more school facilities than the one- and two-room buildings that existed previously. Residents approved a bond issue to build a large school in the center of the district, but lacked the funds to purchase the property. Several men gave personal notes to secure the school, ultimately reimbursed with no profit or interest by the county years after the school's completion. In the district's history, several buildings of various grade levels and student needs were built, knocked down, burned down, and sold.

Some unique characteristics of the school included the small size and a location within the county, yet within close proximity to the city. In the town of the school of study, the estimated median household income in 2000 was $34,559, roughly $6,000 less than the state average of $51,746 (Estimated Median Household Income, n.d.). The

estimated median house or condominium value in 2000 in the town was $109,708 compared to $151,400 elsewhere in the state (Estimated Median House Value, n.d.).

Research Participants

The secondary data collection — including the year-end number of failing grades, year-end average daily attendance, year-end number of office discipline referrals, and number of students scoring proficient and advanced on the MAP test — involved a high number of students in the reduced and free lunch program. Over the years studied, the student population at the school of study was roughly half male and half female, 75% White and 25% Black. All staff members completing the survey self-disclosed as White. Due to the anonymity of responses, the gender distribution was unknown.

Relationship to Participants

The researcher served in different roles during the studied time frame, including as a teacher in the district's high school during the 2002–2003 school year, the year before PBIS implementation. In the 2003–2004 school year, the researcher worked as a teacher and an administrative intern. During the 2004–2005 through 2007–2008 school years, the researcher held an assistant principal position. At the time of completion of the study, the researcher served as the principal of the school of study. The participants volunteered to take part in the study, knowing the principal was the investigator. All responses were anonymous with questions intentionally asked in a manner as not to reveal the participants' identities.

Limitations

The study included limitations. First, the study was limited to one public middle school in the Midwest; hence, the results may not be generalizable to students in other

districts lacking a similar demographic. Some unique characteristics of the school included its small size and location within the county, but close proximity to the city. In the town of the school of study, the estimated median household income in 2000 was $34,559, versus others in the state at $51,746, resulting as about $6,000 less per year (Estimated Median Household Income, n.d.). The estimated median house or condominium value in 2000 was $109,708 compared, with an average of $151,400 elsewhere in the state (Estimated Median House Value, n.d.).

Second, the study was limited to three grade levels of a middle school. Flannery, Frank, Kato, Doren, and Fenning (2012) stated the primary difference between high school and elementary PBIS was that high school PBIS required specific attention to the school's contextual influences — for example, size, culture, and developmental level. PBIS implementation in grade levels at the elementary or high school could appear differently based on typical behaviors according to age and maturity. Despite these differences, PBIS started with student outcomes, development and implementation of systems and practices, and ongoing utilization of data to inform decisions (Ecker, n.d.). Another limitation included MAP test scores not found across the three researched grade levels, because the test was not administered to every grade level during the studied time frame.

Staff turnover, including that of administrators, occurred from the time of data collection to the time of analysis; to mitigate such turnover, the researcher attempted to include as many staff members as possible in the anonymous survey. Although the goal for PBIS was for schoolwide implementation with fidelity, a variance in tolerance levels

and responses, observed by the researcher, to discipline situations existed. The staff at the school of study committed to the use of suggested interventions and supports.

The data results spanned six years with different students enrolled at each grade level, due to transiency and promotion. Each year, eighth grade students passed to high school and a new sixth grade class moved up from elementary to middle school. Enrollment totals in the school of study differed each year from 2002–2003 through 2007–2008, as displayed in Figure 7.

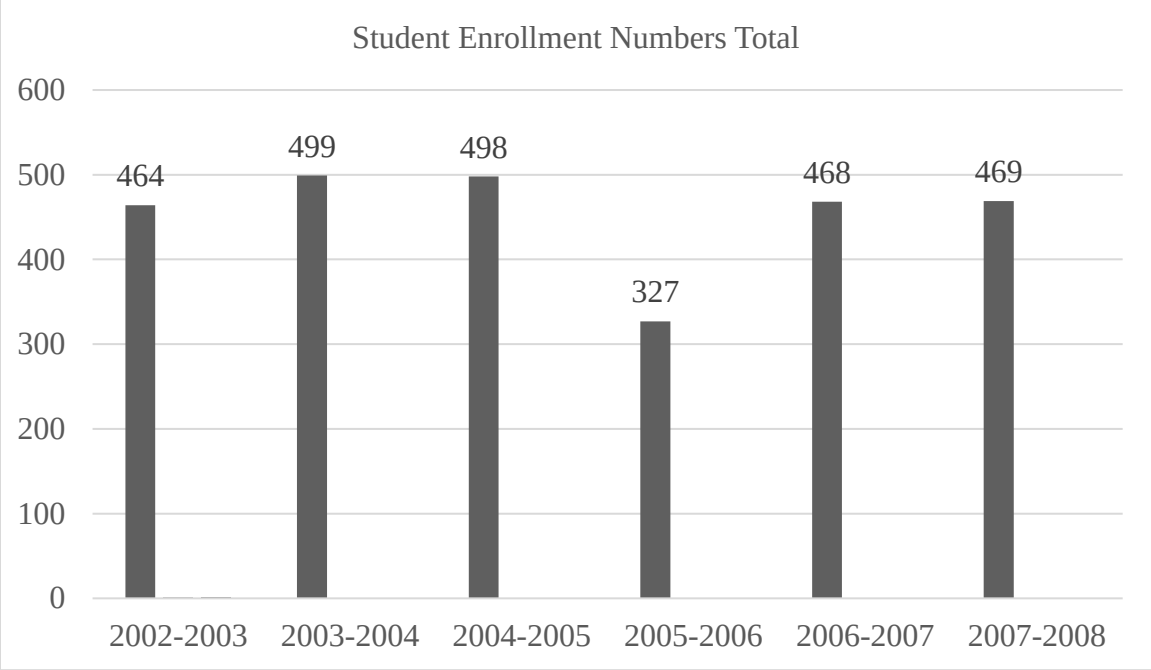

Figure 7. Student enrollment numbers during the time of the study.

Quantitative Analysis

Quantitative researchers took a particular approach to theory, answering research questions and hypotheses, setting up a research strategy, and drawing conclusions from results. Undergraduate and graduate students, across degrees, relied on quantitative methodology, whether in traditional science-based subjects or in the social sciences, psychology, education, and business studies fields, among others (Laerd, n.d.).The

researcher compiled the secondary data — including the year-end number of failing grades, year-end average daily attendance, year-end number of ODRs, and number of students scoring proficient and advanced on the MAP test — to determine if differences existed between these factors and the implementation of PBIS with fidelity. The researcher applied a *z* test for difference in proportions for each collected set of data.

Data Samples

The following, Figure 8 through Figure 12, show the collected data according to the four hypotheses. The year-end number of office discipline referrals appears for each year from 2002–2003, reimplementation, through 2007–2008, providing five years of PBIS data following implementation of PBIS, as displayed in Figure 8.

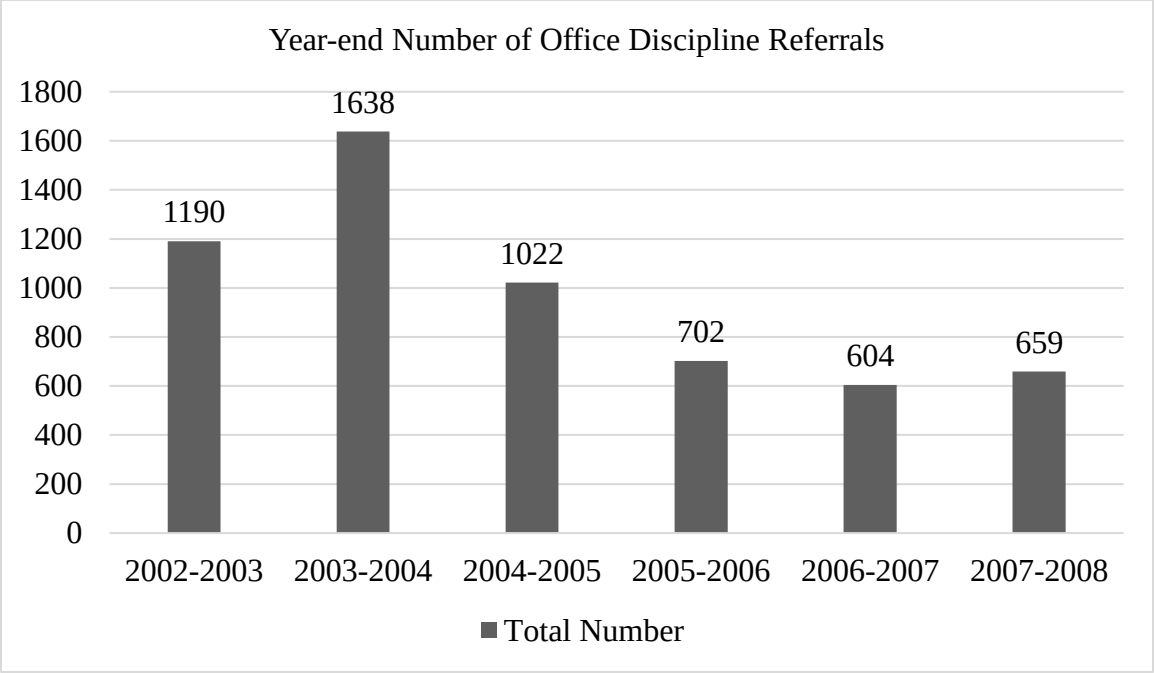

Figure 8. Total number of ODRs issued during each year at the school of study.

Figure 9 includes the year-end number of failing grades for each year from 2002–2003 through 2007–2008, providing five years of data following implementation of PBIS.

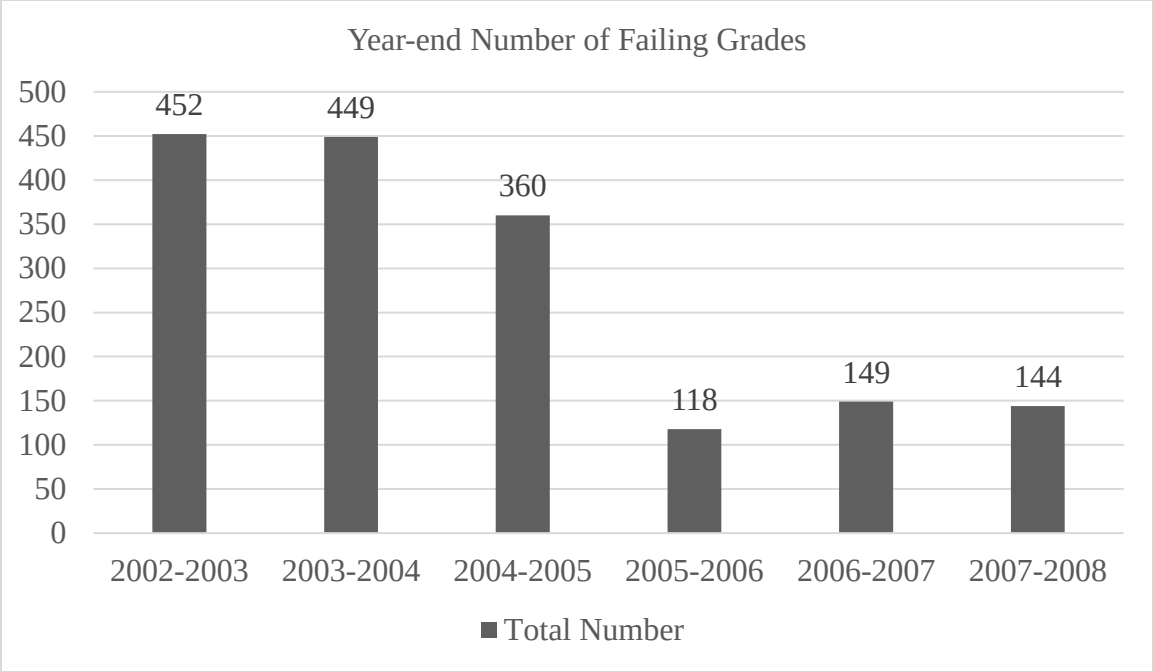

Figure 9. Total number of failing grades per year for the school of study.

Figure 10 includes the percentage of students who scored proficient or advanced on the MAP test for each year from 2002–2003 through 2007–2008, providing five years of data following PBIS implementation.

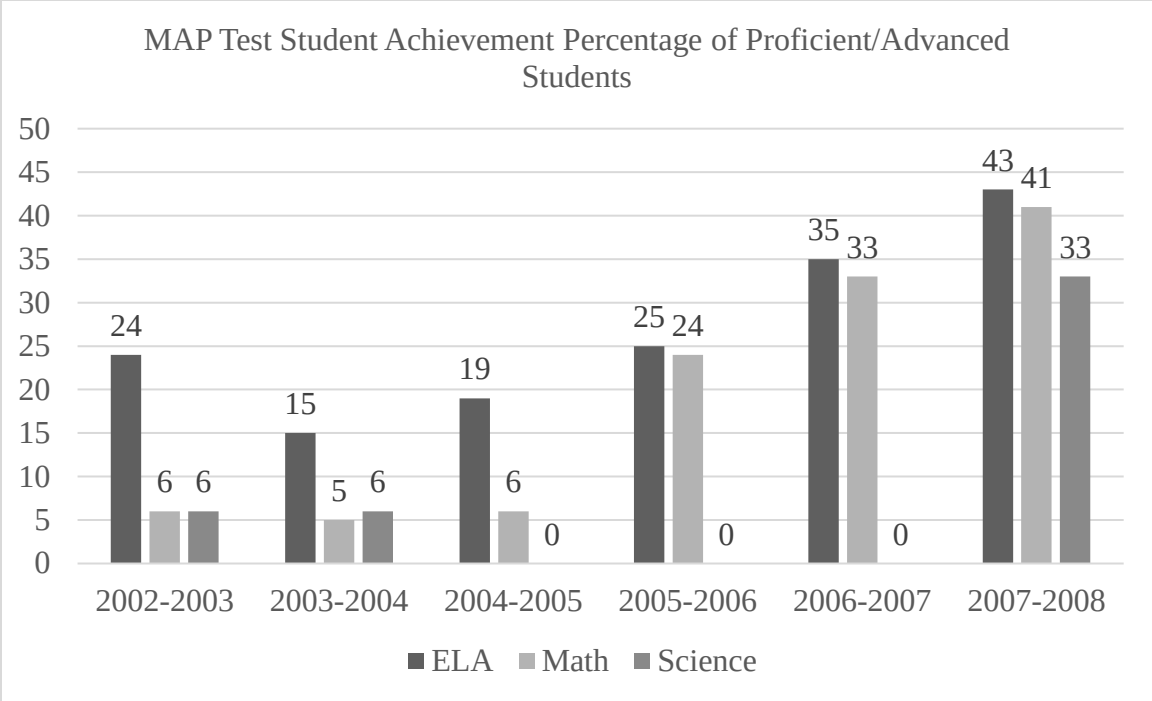

Figure 10. MAP test for student achievement percentage of proficient/advanced students, rounded to whole numbers, for the school of study. The number zero, 0, reflects years in which the test was not provided.

The year-end average daily attendance percentages in Figure 11 appear for each year from 2002–2003 through 2007–2008, providing five years of data following implementation of PBIS.

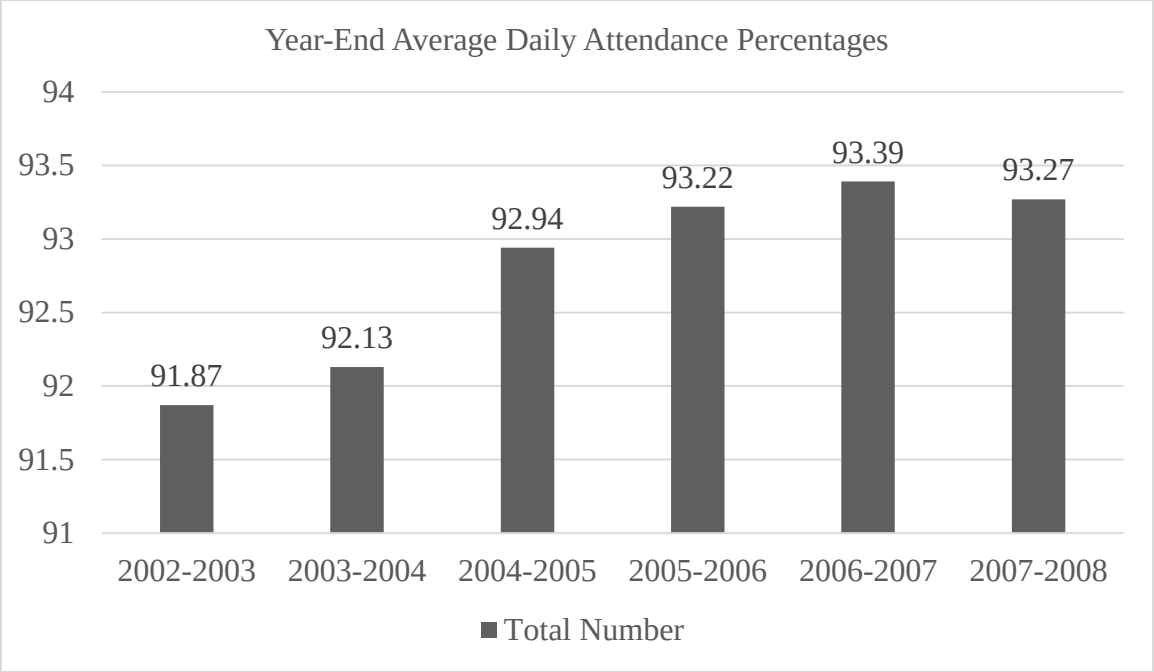

Figure 11. Average daily attendance percentages for the year for the school of study.

The researcher collected the type and number of administrators at the study site for each school year from 2002–2003 through 2007–2008, which provided five years of data following PBIS implementation. The data appeared in Figure 12. During the 2003–2004 school year, all four administrators were active in the training, implementation, and enforcement of PBIS expectations. From the 2004–2005 through 2007–2008 school years, all administrators remained involved in enforcing PBIS expectations, but only one served as the administration's active member on the PBIS team. The other difference was the number of administrators in relation to handling ODRs.

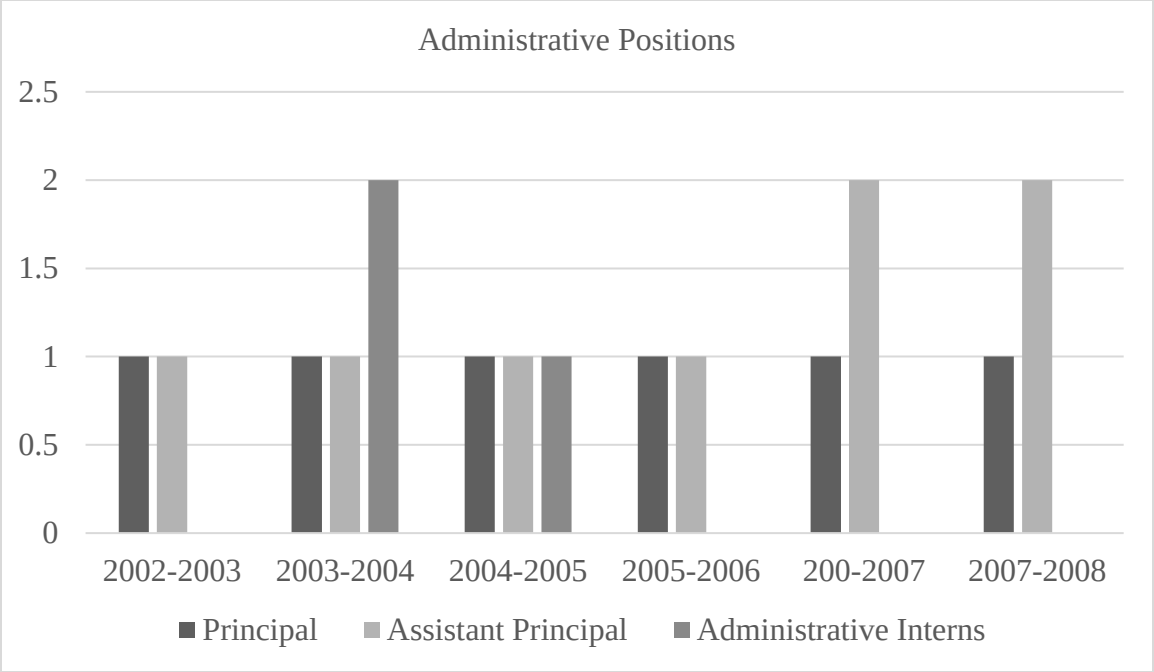

Figure 12. Change in administrative positions at the school of study over the 5-year study period.

Qualitative Analysis

Researchers who employed qualitative methodology often did so to uncover perceptions and lived experiences of individuals in attempts to better understand cultures and behaviors (Agius, 2013). Unlike conducting studies in controlled research settings, qualitative methodology allowed researchers to observe participants in a natural environment (Agius, 2013). The qualitative component of the study allowed the researcher to collect teacher perceptions on how the staff applied PBIS strategies and the subsequent results. In comparison, quantitative methodology allowed the researcher to take a unique approach to theory, answer research questions and hypotheses, establish a research strategy, and draw numerical conclusions from results (Laerd, n.d.).

Summary

The purpose of this mixed methods study was to determine if a difference existed between implementation of PBIS with fidelity and student achievement measured by MAP test scores, year-end number of failing grades, year-end number of discipline referrals, and year-end average daily attendance percentages. The researcher selected a mixed methods approach to gain insight to staff perceptions in addition to numbers and percentages to determine if, based on study findings, the researched school district may decide to reimplement PBIS to improve student achievement scores, specifically MAP test scores for ELA and Math which are used by DESE to calculate the school of study's APR. DESE also used the school's average daily attendance percentage which needs to meet the minimum of 90% of students having at least 90% attendance. A *z*-test for difference in proportions helped determine the difference through effect size of PBIS implementation in the school of study on student achievement measured by the number of failing grades and percentages of students scoring proficient or advanced on the MAP test between the school years 2002–2003 through 2007–2008.

Limitations included site of study demographics, along with differences between students enrolled in 2002–2003 and those enrolled in 2007–2008. Administration and teacher turnover were a limitation, as well. Chapter Four includes the researcher's findings of the mixed methods study. Another limitation decreased the number of students tested through the MAP ELA and Mathematics tests due to 6th grade students not tested.

Challenges existed, but the school of study overcame due to existing staffing. The school of study used the Lemberger Student Management System in 2002-2006 school

years, but changed to School Information Systems in the 2006-2007 school year to current. The technology assistant worked during the studied years and was familiar with both systems which enabled the researcher to collect data for all years.

Chapter Four: Analysis

Introduction

Chapter Three includes the researcher's study methodology on PBIS. Based on the researcher's experience, scholarship, and methodology, the researcher considered the implementation of PBIS at the school of study to see if differences existed between PBIS implementation and schoolwide strategies in terms of average daily attendance, failing grades, MAP test proficiency, advanced scores, and discipline referrals following analyses. The goal was to determine whether data collected would result in the researcher rejecting each null hypothesis. Upon receipt of all secondary school data — including the year-end total number of failing grades, year-end total number of discipline referrals, year-end average daily attendance percentages, and the percentage of students who scored proficient and advanced on the MAP tests — the researcher analyzed and stored all data in a secure location.

The district's technology department collected the year-end number of failing grades and average daily attendance percentages for the years of 2002–2003 through 2005–2006 through retrieval from the Lemberger System; data from the 2006–2007 and 2007–2008 school years came from the school of study's secretary through retrieval from the SIS. The researcher collected the percentages of students scoring at proficient and advanced levels from the district's central office through the Missouri Department of Elementary and Secondary Education. The PBIS team collected the year-end total number of discipline referrals through each school year comparative discipline referral reports from the 2002–2003 through 2007–2008 school years.

The researcher administered a mixed methods survey using Likert-scale and open-ended questions to maximize feedback potential. The selected participants served as staff members at the school of study in 2002–2003, the year before PBIS implementation, through at least 2003–2004, the year of implementation. The tool used to collect responses from teachers was a Google Form survey.

Research Questions and Null Hypotheses

Four research questions and four hypotheses guided the study:

RQ1: What schoolwide behavior strategies were applied during PBIS implementation?

RQ2: What schoolwide attendance strategies were applied during PBIS implementation?

RQ3: What schoolwide academic instructional strategies were applied during PBIS implementation?

RQ4: How do teachers perceive the implementation of PBIS?

$H0_1$: A difference does not exist in the number of office referrals pre-to-implementation of PBIS.

$H0_2$: A difference does not exist in the number of failing grades pre-to-post-implementation of PBIS.

$H0_3$: A difference does not exist in the student achievement performance as measured by the Missouri Assessment Program for each subject content tested.

$H0_4$: A difference does not exist in the average daily attendance percentage pre-to-post-implementation of PBIS.

Results

Null Hypothesis 1: No difference exists in the number of office referrals pre-to-post-implementation of PBIS.

In comparing the 2002–2003 and 2007–2008 school years in Figure 8, the number of referrals decreased from 1,190 to 659. In Figure 7, during the 2002–2003 year, 464 students attended the school, with 469 students attending during the 2007–2008 year. The researcher collected year-end total numbers of discipline referrals from the PBIS Team through the school year comparative discipline referral reports from the 2002–2003 through 2007–2008 school years. To test Hypothesis 1, the researcher used a *z*-test for difference in proportions at $\alpha = 0.10$, which identified a critical value of -1.28. Upon calculation, $z = -13.263$, a number that fell within the critical region; thus, there was enough evidence to reject the null hypothesis. Evidence supported a significant decrease in the number of office referrals from pre- to post-implementation of PBIS. Figure 13 lists the decrease in number of ODRs per student from the 2002–2003 to the 2007–2008 school years.

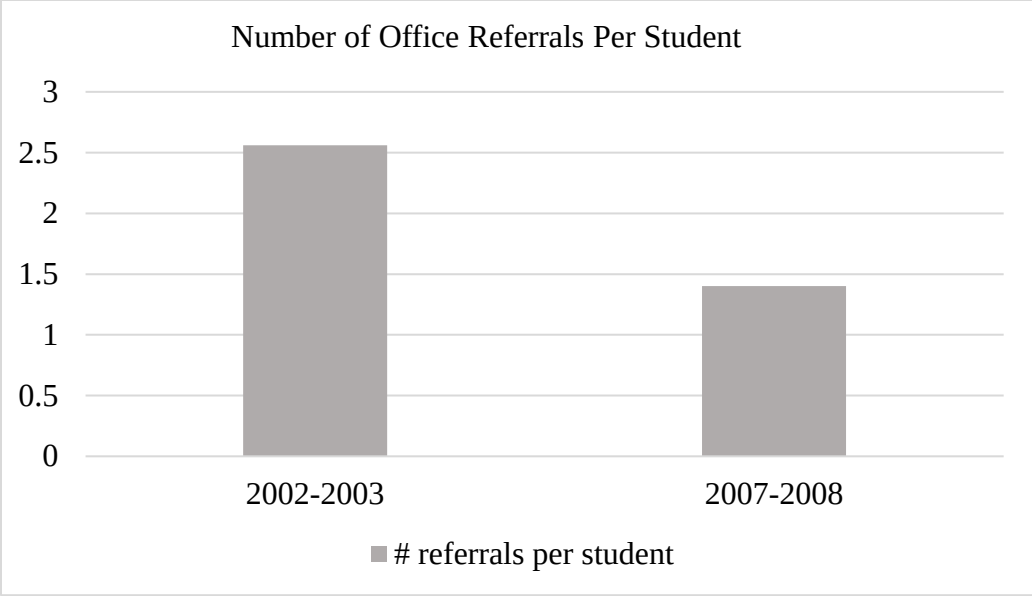

Figure 13. A comparison of the number of ODRs per student between the 2002–2003 and 2007–2008 school years indicated a decrease in inappropriate behavior in the post-PBIS implementation year.

Null Hypothesis 2: No difference exists in the number of failing grades pre-to-post-implementation of PBIS.

In comparing the 2002–2003 and 2007–2008 school years, the number of failing grades decreased from 452 to 144. During the 2002-2003 school year, there were 464 students who attended the researched school. During the 2007-2008 school year, there were 469 students in attendance. The district's technology department collected and provided the year-end number of failing grades to the researcher following retrieval from the Lemberger system for the 2002–2003 school year. The 2006–2007 and 2007–2008 year-end number of failing grades came from the school of study's secretary upon retrieval from the SIS.

The researcher analyzed Null Hypothesis 2 by applying a *z*-test for difference in proportions at $\alpha = 0.10$, which identified a critical value of -1.28 and a *z* value of -13.330. Because the *z*-value fell within the critical region, the null hypothesis was rejected. Enough evidence supported the claim of a significant difference in the number of failing grades pre-to-post-implementation of PBIS, with the post-implementation number of failing grades having decreased. Figure 14 displayed the number of failing grades per student in the 2002–2003 and the 2007–2008 school years.

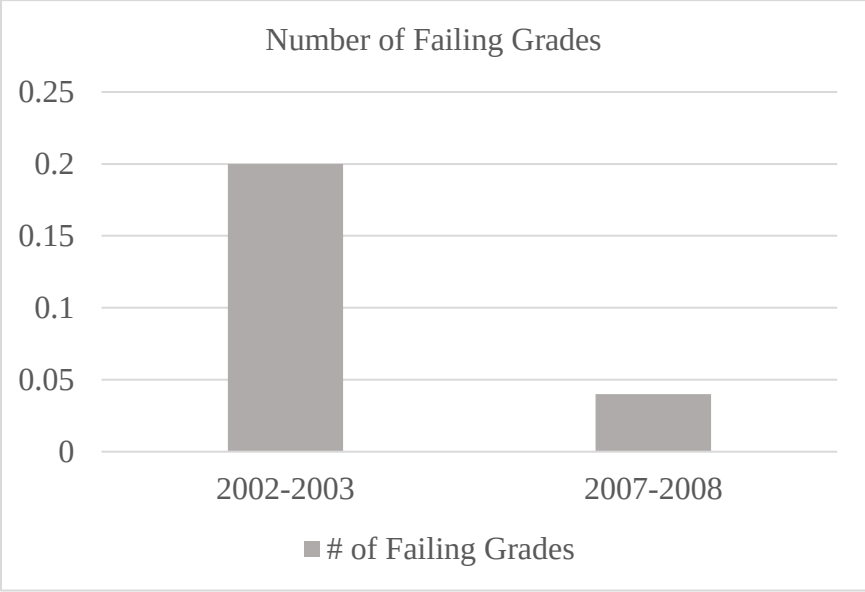

Figure 14. A comparison of the number of failing grades between the 2002–2003 and 2007–2008 school years indicated a decrease in failing grades in the post-PBIS implementation year.

Null Hypothesis 3: No difference exists in the student achievement performance as measured by MAP for each subject content tested, pre-to-post-implementation of PBIS.

From the 2002–2003 to 2007–2008 school years, the percentage of students scoring proficient or advanced in the seventh and eighth grades increased in

English/language arts from 23.6% to 40% and in math from 5.5% to 30%. The researcher collected the percentages of students scoring proficient and advanced from the district's central office through the Missouri Department of Elementary and Secondary Education. During the 2002–2003 school year, there were 464 students who attended the researched school. During the 2007–2008 school year, there were 469 students in attendance. Given the available data included only seventh and eighth grade tested students in the 2002–2003 school year, the researcher included only seventh and eighth grade tested students for the 2007–2008 school year. Although the school tested students in science in the 2002–2003 and 2007–2008 school years, seventh and eighth grade students took tests in 2002–2003; but, only eighth grade students took science assessments during the 2007–2008 school year.

To test Null Hypothesis 3, a *z*-test for difference in proportions at $\alpha = 0.10$ identified a critical value of -1.28. Upon calculation, the *z* score equaled 2.887 for English/language arts and the *z* score equaled 4.968 for math. The numbers fell within the critical region, leading the null hypothesis to be rejected. Enough evidence existed to support the claim of a significant difference in the percentage of students scoring proficient or advanced between pre- and post-implementation of PBIS, with an increase following the implementation of PBIS. Figure 15 notes the percentages of students scoring proficient or advanced in the 2002–2003 and 2007–2008 school years, indicating an increase.

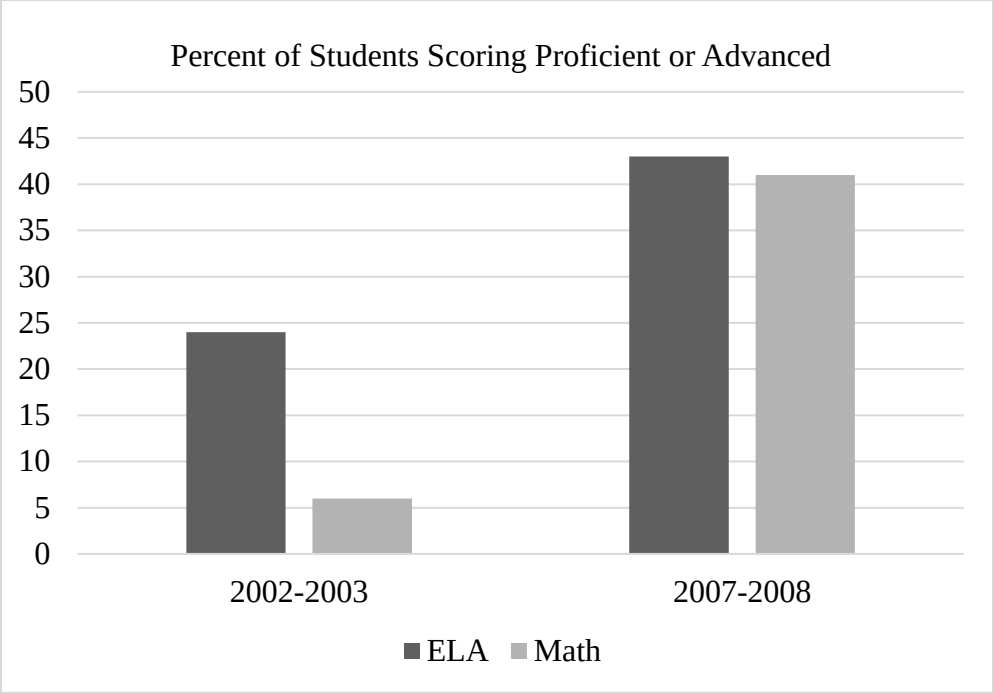

Figure 15. A comparison of percentages of students scoring proficient or advanced between the 2002–2003 and 2007–2008 school years indicated an increase in academic performance in the post-PBIS implementation year.

Null Hypothesis 4: No difference exists in the average daily attendance percentage pre-to-post-implementation of PBIS.

In comparing the 2002–2003 and 2007–2008 school years, the average daily attendance percentage increased from 91.8% to 93.27%. During the 2002–2003 school year, there were 464 students in attendance and during the 2007–2008 school year, 469 students attended the researched school. The district's technology department collected and provided to the researcher year-end average daily attendance percentages through retrieval from the Lemberger system for the years 2002–2003 and 2005–2006; the school secretary provided 2007–2008 school year data from the SIS.

A right-handed *z*-test for difference in proportions at $\alpha = 0.10$ served to test Null Hypothesis 4, identifying a critical value of -1.28 and a calculation of $z = .0404$. The *z*-

score fell outside the critical region; therefore, the null hypothesis was not rejected. Not enough evidence supported the claim of a difference in the average daily attendance percentage from pre- to post-implementation of PBIS. Figure 16 included the average daily attendance percentages for the 2002–2003 and 2007–2008 school years, with only a non-significant increase.

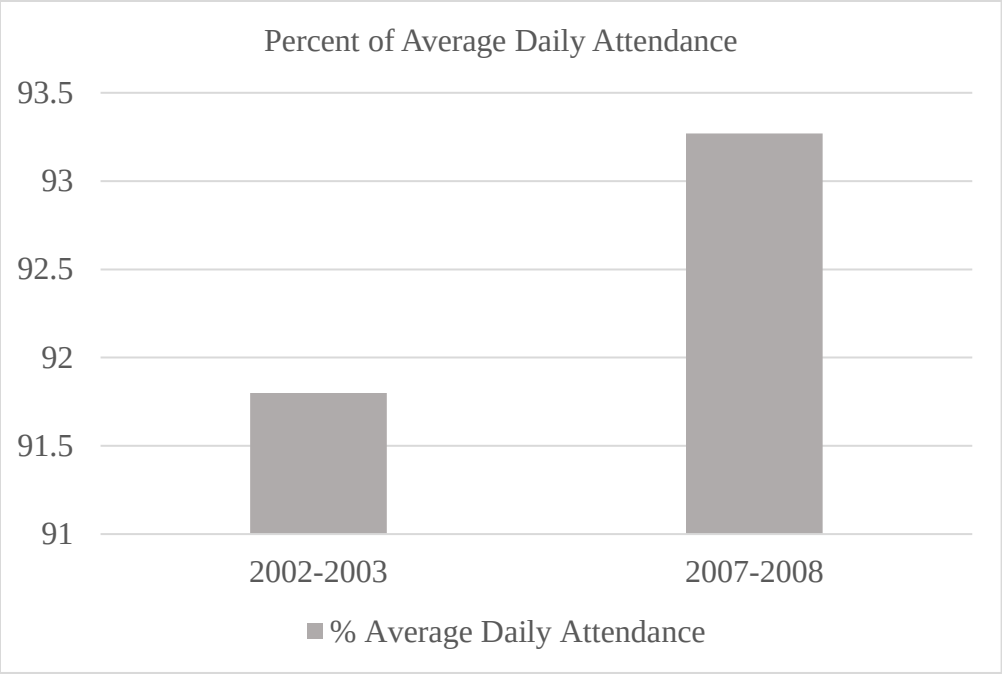

Figure 16. A comparison of percentages of average daily attendance at the school of study between the 2002–2003 and 2007–2008 school years. Although the post-PBIS implementation year showed an increase, the difference was not significant.

The application of qualitative methods to other disciplines, including clinical health service and education research, rapidly expanded and included a robust evidence base (Agius, 2013). Qualitative analysis of the survey based on responses by staff members who worked at the school of study in the 2002–2003 reimplementation school year through at least the 2003–2004 implementation school year yielded evidence to

suggest the first year of PBIS implementation was not consistent across the researched setting.

Research Question 1: What schoolwide behavior strategies were applied during PBIS implementation?

To address the research question, the researcher analyzed answers to a survey question administered through Google Forms by staff members who worked at the school of study from the 2002–2003 school year through at least 2003–2004 — in other words, the year before PBIS implementation and at least one year after. The PBIS leadership team presented behavior strategies to staff members at faculty meetings in the 2003–2004 school year, as shown in Figure 17. Responses suggested most participants recalled Tier 1 universal expectations were posted, a student reward system existed, a matrix of all universal expectations in every setting was visible, and discipline data were shared with staff in an effort to decrease ODRs in the school of study.

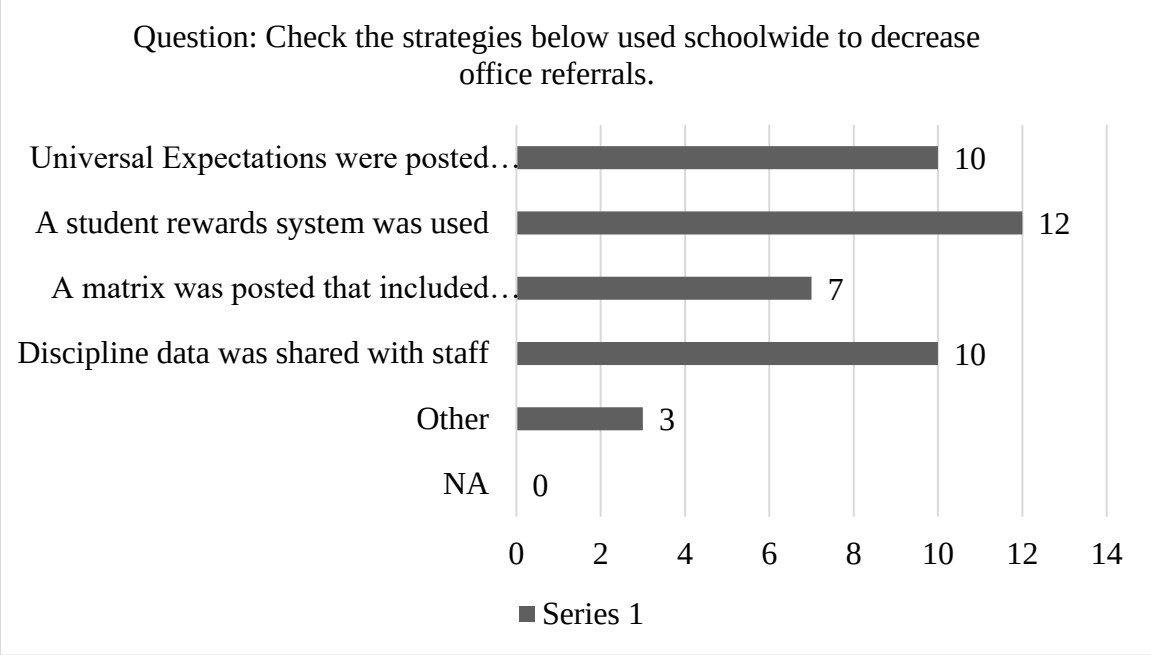

Figure 17. The number of survey staff who answered in the affirmative when asked if the PBIS leadership team presented these strategies in the 2003–2004 school year. From the researcher's Google Forms survey to staff, 2019.

Research Question 2: What schoolwide attendance strategies were applied?

To address the research question, the researcher analyzed answers to a Google Forms question from staff members who worked at the school of study in the 2002–2003 school year through at least 2003–2004, or longer. All survey respondents were staff members who worked at the school of study the school year before implementation and at least one year after implementation. The PBIS leadership team presented strategies to increase average daily attendance, which members announced and encouraged in all classes, especially in advisory classes, as shown in Figure 18. The majority of participants recalled the use of monthly rewards for the top advisory classes in each grade level and the posting of current daily attendance averages for each grade level on the bulletin board in front of the building for all students and staff to see in the school of study.

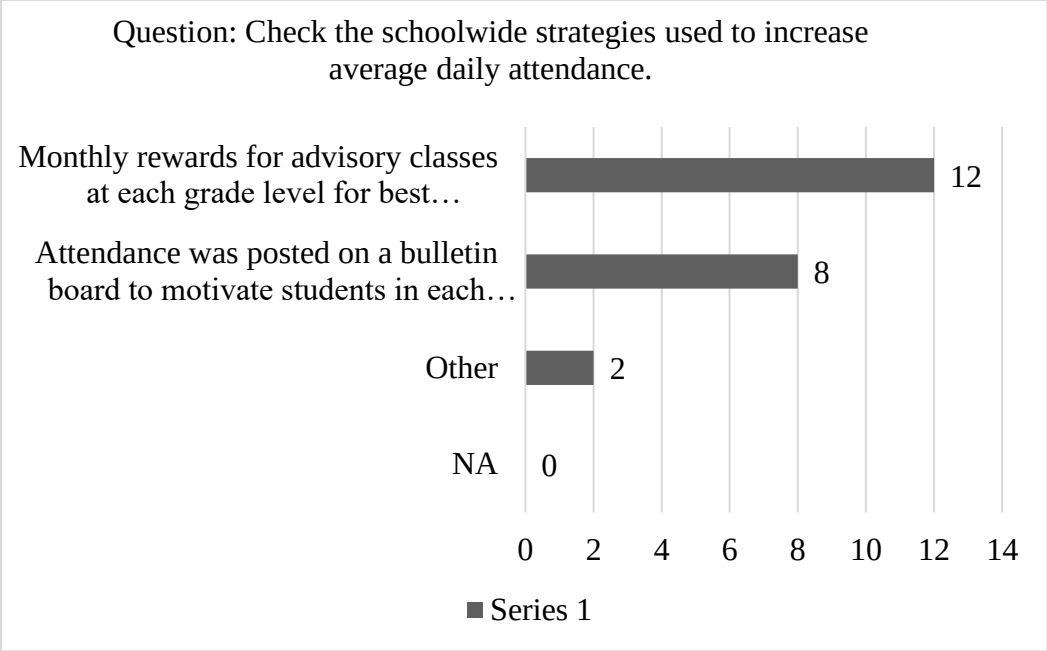

Figure 18. The number of survey staff who answered in the affirmative when asked if PBIS attendance strategies were used in the 2003–2004 school year. From the researcher's Google Forms survey to staff, 2019.

Research Question 3: What schoolwide academic instructional strategies were applied during PBIS implementation?

The researcher analyzed answers to three questions administered through a Google Forms survey to staff members who worked at the school of study in the 2002–2003 school year through 2003–2004 or longer. All survey respondents were staff members who worked at the school of study the school year before implementation and at least one year after implementation. The PBIS leadership team presented specific strategies schoolwide to promote a potential positive change through the reduction of failing grades. Those surveyed answered one question through a linear scale from *strongly disagree* to *strongly agree,* as shown in Figure 19. Participants reported a level of agreement, disagreement, or indicated not applicable, as to whether the school used

specific strategies to promote a potential positive change in reduction of failing grades. Most respondents agreed that specific strategies were used schoolwide to promote potential positive change in the reduction of failing grades.

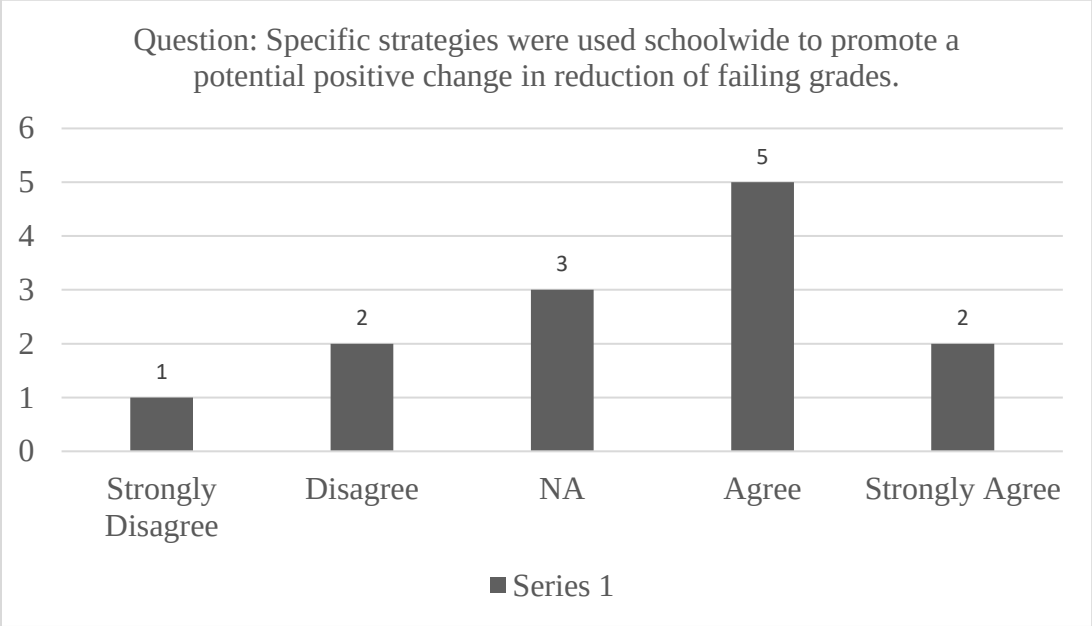

Figure 19. Specific strategies used schoolwide to promote a positive change in reduction of failing grades. The survey of participant answers to whether specific strategies were used in the 2003–2004 school year to reduce failing grades. From the researcher's Google Forms survey to staff, 2019.

The second question for those surveyed pertained to academic achievement. Participants selected from a list of specific strategies implemented to increase student achievement on the MAP test, as shown in Figure 20. Half of the participants reported the use of strategies schoolwide to promote a potential positive change in the reduction of failing grades. Three participants disagreed that specific strategies were used schoolwide to reduce failing grades.

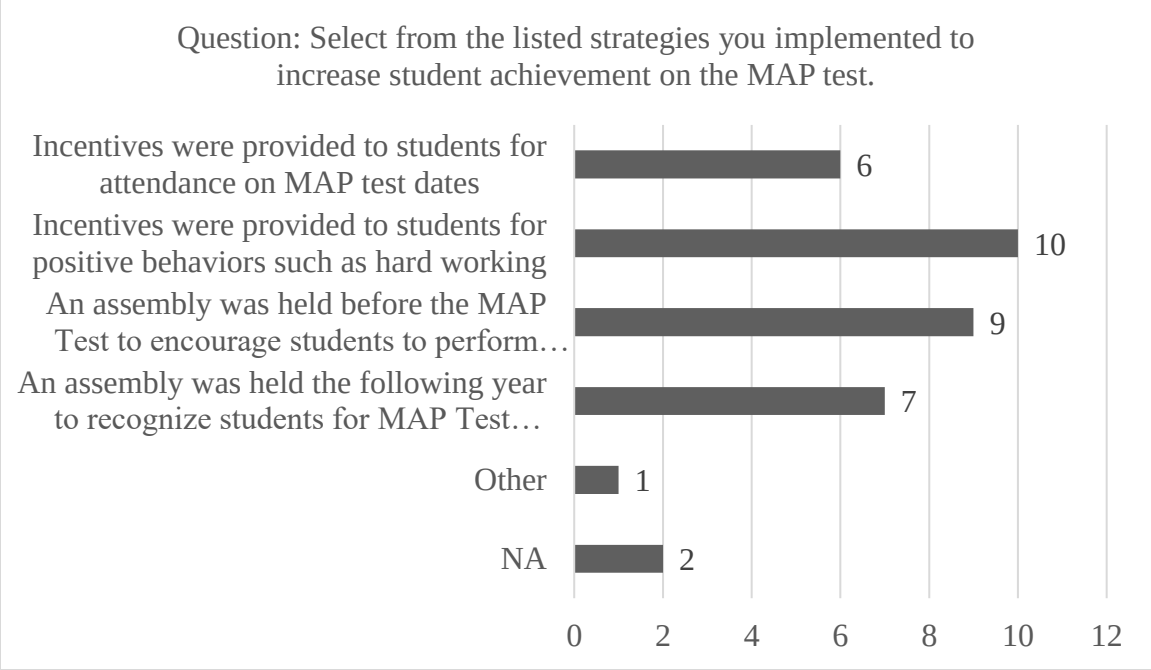

Figure 20. The survey of interviewee answers about the listed strategies used in the 2003–2004 school year to increase student achievement on the MAP test. From the researcher's Google Forms survey to staff, 2019.

The third question was open-ended, requiring staff members to describe any teaching strategies utilized and perceived as innovative. Participants reported various responses to the question and no common themes emerged. The prompt did not include a list of options. Responses included various strategies as shown in Table 17.

Table 17

Participant Responses to Questions About Teaching Strategies Utilized and Perceived as Innovative

Participant	Responses to question
Participant 1	• My most powerful strategy is to build strong relationships with my students. When students feel that you genuinely care about them and their success, problems will be minimal.
Participant 2	• Quarterly incentives per grade level (relatively expensive), weekly incentives per team/advisory class • Positive referrals, bucks handed out for being caught doing the right thing (store that bucks could be used for prizes or rewards) • Combining video clip reenactments to reinforce readings
Participant 3	• Math teachers attended Math Academy over the summer and learned a variety of hands-on lessons that had the students apply the math to real-life situations • Interactive lessons in math with the use of smartboards
Participant 4	• Reading groups were formed and based on interest levels as well as reading levels • Language arts combined with social studies for writing research projects on historical events
Participant 5	• Kagan Cooperative Learning
Participant 6	• That social skills were directly taught by staff during advisory times
Participant 7	• Tiger Tickets, positive praise 3-to-1, and monthly rewards
Participant 8	• Nothing necessarily innovative; however, each teacher taught the matrix and universals
Participant 9	• I have experimented with different types of lessons, assignments, and grading practices • I continually adjust and modify my discipline methods to help optimize student growth in the classroom
Participant 10	• Jigsaw, technology, growth mindset, flexible seating
Participant 11	• Reviewing MAP skills in competition style • I offered my students many choices before beginning a project or a lesson. The freedom of choices motivated them and kept them actively engaged.

Note. From researcher's Google Forms survey to staff, 2019.

The researcher analyzed the responses to the three questions regarding strategies used to improve student achievement in the school of study. The responses were inconsistent; however, the time span of the study was up to 15 years ago, which is a limitation.

Research Question 4: How do teachers perceive implementation of PBIS?

To address the research question, the researcher analyzed answers to question number 4 administered through a Google Forms survey from staff members who worked at the school of study in the 2002–2003 school year through at least 2003–2004. The participant criteria identified staff members who worked at the school of study the school year before implementation and at least one year after implementation. The PBIS leadership team presented the components and steps needed to implement PBIS at the school of study. The survey prompt did not include a list of options. Staff responses included various strategies, with no identified common theme as shown in Table 18.

Table 18

Execution of PBIS at School of Study Perceptions

Participant	Response to question
Participant 1	Beginning stages: Teachers and administrators willing to work together to help with the success of all kids. Kids excited to take part in the schoolwide incentive programs.
Participant 2	Establishment of true PBIS still in progress.
Participant 3	PBIS at first had very vague objectives. As time went on, it became more data driven about specific objectives. Rewards were always a part of PBIS. We were told to say five positive comments for every negative comment we made to students.
Participant 4	Honestly, I feel that if everyone followed PBIS in the building it would work. The problem is that not all teachers follow the PBIS framework. I would say that a good 80%–90% try to implement PBIS.
Participant 5	PBIS was supported by faculty and staff. Capacity was built as staff were continuously involved in professional development to grow their tiered interventions. PBIS was executed with fidelity as measured by the SET and Tiered Fidelity Inventory. Student voice and choice was also integrated into incentives.
Participant 6	Having perspective now makes me realize what an excellent job PBIS did to get all employees on board. That is half the battle. All of us working together can evoke change in students' behaviors.
Participant 7	Our team met monthly and discussed data. We determined the universals and how they would be executed throughout the building. Tier 2 and 3 students were targeted, and an action plan went into place to help those students reach goals and become successful in school.
Participant 8	Disjointed. While there are pillars in place, there does not seem to be any unifying attributes. Teachers did not buy in and there were massive inconsistencies across the board (teachers, students, and administration). I feel that the process was rushed and not well thought out or coordinated, which caused the troubles. With more time and organization, I feel it could be a viable option.
Participant 9	School principal participation and modeling, school leadership team data-driven decision-making needed, data-based decision-making and problem-solving, multitiered systems, participation by all staff members across all settings.

Table 18 Continued

Participant	Response to question
Participant 10	At classroom; integration with schoolwide expectations and classroom practices; teacher participation in nonclassroom settings; effective instructional practices; daily use of effective classroom management practices; and peer collaborations and support.
Participant 11	At the very beginning, it was introduced to staff. We made universals, discussed, and differentiated between office and classroom handled discipline, talked about 4-to-1 positives (made it a priority), had individual and class reward systems, viewed discipline data as a staff, and met monthly (sometimes weekly).
Participant 12	A PBIS team was chosen and they worked closely with the staff.

Note. From researcher's Google Forms survey to staff, 2019.

Summary

Chapter Four included detailed quantitative and qualitative results of a mixed methods analysis the researcher completed at a small middle school in the Midwest United States. The purpose was to examine the difference between PBIS pre-to-post-implementation and the number of office referrals, number of failing grades, percentage of students scoring proficient or advanced, and daily average attendance percentage from the 2002–2003 to 2007–2008 school years. The researcher studied the specific strategies used schoolwide to promote potential positive changes in improving student achievement scores, as measured by MAP test scores in the levels of proficient or advanced, reduction in the year-end number of failing grades, reduction in the year-end number of discipline referrals, and increase in the year-end average daily attendance percentages, to determine whether the school district should reimplement PBIS to improve student achievement scores.

The researcher used the *z*-test for difference in proportions to analyze the quantitative data. Evidence existed to support a difference in the number of ODRs pre-to-post-implementation of PBIS, with a decrease in the number of post-implementation office referrals. Enough evidence existed to support the claim that a difference in the number of failing grades pre-to-post-implementation of PBIS occurred, with a decrease in the number of failing grades post-implementation. Evidence existed to support the claim of a difference in the percentage of students scoring proficient or advanced pre- and post-implementation of PBIS, with an increase post-implementation of students scoring proficient or advanced. However, there was a lack of evidence to support a difference in the average daily attendance percentage between pre- and post-implementation of PBIS.

Qualitative analysis from staff members who worked at the school of study in the reimplementation 2002–2003 school year and at least through the implementation 2003–2004 school year yielded evidence suggesting the first year of PBIS implementation was not consistent throughout the survey questions. Based on the responses, many participants recalled that universal expectations for Tier 1 were posted in all settings, a student reward system existed, a matrix of all universal expectations in every setting was posted, and discipline data were shared with staff in an effort to decrease ODRs. Using a linear scale, most of the participants agreed on the use of specific strategies to promote potential positive changes in the reduction of failing grades; three responded *not applicable*; and three disagreed. Many participants recalled the use of monthly rewards for the top advisory classes in each grade level and having seen the current daily attendance average for each grade level posted on the bulletin board in front of the building for students and staff to see.

Related to the use of instructional strategy implementation to increase student achievement on the MAP test, the researcher found noteworthy responses. The majority reported incentives to students for positive behaviors, an assembly held before the MAP test to encourage students to perform their best, an assembly held the next school year to recognize students for MAP score achievements, and incentives to students for attendance on MAP test dates. Participants shared various responses related to strategies perceived as innovative and descriptions in execution of PBIS at the school of study.

Chapter Five: Discussion

Chapter Four included the analysis of quantitative and qualitative data collected in the study; Chapter Five includes a discussion of data analysis results. The researcher compared data through the triangulation of the data, reflected on the findings, and provides recommendations for PBIS implementation and future research. The purpose of this study was to use mixed methods to investigate whether implementation of PBIS in a middle school in the Midwest United States would increase student achievement scores, reduce office referrals, reduce the number of failing grades, and improve the daily attendance average percentage.

Throughout the course of formal education, students needed interventions and support to assist all in succeeding behaviorally. What changed over time was the ideology of providing interventions and support related to behavior and student achievement. Creating a positive learning environment for students was essential for helping the students to grow and be productive both in and out of school. Meeting the needs of all children was no easy task, but PBIS implementation with fidelity was a proven intervention system to assist in the challenge. Researchers demonstrated schoolwide behavior support could improve variables leading to improved academic performance, such as student attendance, time in school due to reduced exclusionary disciplinary practices, classroom instructional time, and academic engagement (Putnam et al., 2013).

Results

Based on the results of the study, enough evidence existed to support Hypotheses 1, 2, and 3 in making a positive difference through decreased numbers of ODRs, fewer failing grades, and an increased percentage of students scoring proficient or advanced on

assessment tests as evidenced by comparing pre- and post-implementation numbers. However, not enough evidence emerged to support Hypothesis 4 with regard to PBIS implementation making a difference in the average daily attendance percentage, as the post-implementation average daily attendance did not significantly increase.

Selection of the 2002–2003 school year as the baseline, with an additional five school years for the collection and analysis of data, ensured the best opportunity for accurate results. The researcher served as an administrator in the school of study from the 2003–2004 through 2007–2008 school years. First, he obtained permission from the superintendent of schools to perform the study by collecting specific data from particular sources, including the building administrative assistant and technology assistant. To obtain quantitative data, the researcher then administered checkbox, Likert-scale, and open-ended questions through a Google Forms survey to staff members who worked at the school of study in the 2002–2003 school year through at least 2003–2004. All data collected were anonymous to protect participants' identities.

Office Referrals

A positive difference existed in the number of ODRs occurring pre- and post-implementation of PBIS. The number of referrals from the 2002–2003 to 2007–2008 school years decreased from 1,190 to 659. The researcher used a *z*-test for difference in proportions and a left-tailed analysis for the data. Enough evidence existed to support the claim of a difference in the number of ODRs occurring pre- and post-implementation of PBIS with a decrease in post-implementation number of office referrals. The school of study focused on implementing PBIS with fidelity by creating and posting universal expectations for all situations in all settings. Staff also used common terminology with

students and parents to avoid as much confusion as possible. Each setting had its own universal expectations that fell under the three Rs of being “Ready, Responsible, and Respectful.”

Another essential element of PBIS was using data to make decisions, such as considering the number of referrals per day per month, the number of referrals by student, the number of referrals by location, the number and types of problem behaviors, and the number of problem behaviors by time of day. The school of study also shared a list of students who received a certain number of referrals. Administration and staff used data to determine if students required Tier 2 interventions. The school of study used an alternative school for serious disciplinary infractions (Tier 3) or repeated disciplinary infractions. The assistant superintendent from the school of study investigated and determined Tier 3 intervention and support, which involved the use of an alternative school for serious or repeated disciplinary infractions.

School administrators expected a reduction in ODRs after the implementation of PBIS, once the staff had the opportunity to implement the strategies with consistency. The results mirrored what many prior researchers indicated, as reviewed in Chapter Two and as cited. The researcher recommended the school of study continue with reimplementation of PBIS to reduce the number of ODRs. Improved behavior supports related to improved academic outcomes. According to Putnam et al. (2013), schools implementing schoolwide behavior support showed greater academic improvements compared to schools not implementing schoolwide behavior support.

Failing Grades

A difference existed in the number of failing grades when comparing pre- and post-implementation of PBIS. The number of failing grades decreased from 452 to 144 from the 2002–2003 to the 2007–2008 school year. The researcher used a *z*-test for difference in proportions and left-tailed analysis for the data. Enough change occurred to support the claim of a difference in the number of failing grades when comparing activity pre- and post-implementation of PBIS, as post-implementation office referrals decreased.

The school administrator expected a reduction in the number of failing grades post–PBIS implementation after staff had the opportunity to implement with consistent strategies. The results mirrored those of many researchers in Chapter Two (Beaudette, Banks, Obiakor, Bazelon, Swain-Bradway, Freeman, Kittelman, Nese, Romney, Houchens, Caldarella, Irvin, and Sugai). The researcher recommended the school of study continue with reimplementation of PBIS to reduce the number of failing grades.

MAP Test Scores

A difference existed in student achievement performance as measured by MAP for each subject content tested. The percentage of students scoring proficient or advanced on the MAP test improved from the 2002–2003 to the 2007–2008 school year, from 5.5% to 30% in math, 23.6% to 40% in English/language arts, and 5.6% to 33% in science. The researcher used a *z*-test for difference in proportions and right-tailed analysis for the data. Enough evidence existed to support the claim of a difference in the percentage of students scoring proficient or advanced between the years of pre– and post–PBIS implementation. The post-implementation percentage was higher in all subjects. The Annual Performance Report score assigned to a middle school was partly based on student achievement scores

determined by how students scored on the MAP test which included the number of students scoring proficient or advanced.

Administrators at the school of study expected an increase in the percentage of students scoring at proficient or advanced levels post-implementation of PBIS after staff had the opportunity to implement strategies with consistency. The results mirrored many of the studies cited in Chapter Two. The researcher recommended the school of study continue with PBIS reimplementation to increase the percentage of students scoring at proficient or advanced levels on the MAP, and for students who scored below basic to improve to basic, as reflected in greater MAP performance index points.

Average Daily Attendance Percentage

A non-significant difference existed in the average daily attendance percentages between pre– and post–PBIS implementation. The average daily attendance percentage improved from 91.87% to 93.2% from the 2002–2003 to 2007–2008 school year. The researcher used a *z*-test for difference in proportions and right-tailed analysis for the data. The researcher found insufficient evidence to support the claim of a significant difference in the percentage of students scoring proficient or advanced pre-to-post- average daily attendance after implementation of PBIS; even so, the school of study was pleased with the improvement. Administrators expected an increase in the average daily attendance percentage post-implementation of PBIS after staff had the opportunity to implement strategies with consistency. Based on the results mirroring findings from the literature reviewed in Chapter Two, the researcher recommended the school of study continue with reimplementation of PBIS to increase the average daily attendance percentage.

In the researcher's experience, the school of study used Tier 1 strategies, such as an engaging school climate, positive relationships with students and families, understanding the relationship between absences and student achievement, chronic absence data monitoring, good and improved attendance recognition, and identifying and addressing common barriers. Implementing specific strategies was a means to fulfill the goal of improving average daily attendance, increasing communication with students and parents to inform them of how absence altered student achievement, and recognizing improved attendance by students. The school of study maintained a list of students with 90% or less attendance to meet with the principal and the parents. The goal was to set up action plans that included adults in the school who had a relationship with the student. In the researcher's experience, the school of study also maintained a list of students who had missed 20% or more of school days. The school then involved counseling resources and, in some cases, contacted legal authorities with truancy reports. The Annual Performance Report score assigned to middle schools was based partly on students' average daily attendance.

Recommendations for Future Studies

The researcher recommended checking on the availability of specific data before future scholars create hypotheses and research questions in an attempt to replicate the study or conduct something similar. For example, the researcher collected data on MAP test results of only seventh and eighth grade students who were administered the assessments for ELA, Math, and Science, which included seventh and eighth grade students in the baseline year but only eighth grade students in the 2007–2008 school year. Students did not complete the MAP tests in sixth grade.

Based on the findings, one recommendation was for future researchers to ensure specific data collection systems or tools are available. The researcher of the study was fortunate, because the district technology networks and systems administrator and the middle school's administrative assistant both worked in the school of study during the baseline year through the 2007–2008 school year. Therefore, the researcher had access to Lemberger and SIS.

The researcher recommended investigating specific strategies, other than PBIS, to improve student achievement scores and average daily attendance. These could include the implementation of professional learning communities with fidelity to determine appropriate power standards for each subject area at each grade level. Another recommendation would be investigating the use of appropriate daily learning targets, improvement of instructional practices, effective formative assessments, and addressing the four corollary questions of what do you want the students to learn, how do you know when they learn it, what do you do for those who don't learn it, and what do you do for those who do learn it. Recommendations for improving attendance would be to have various personnel involved in attendance collection and analysis to create interventions and supports, which subsequent researchers could measure and evaluate. Other recommendations for improving school attendance is the addition of the School Encouragement Program in which a judge, deputy juvenile officer, and the school counselor meet with students at-risk in regards to attendance concerns to set goals, discuss importance of school, and to celebrate accomplishments; this program has helped improve student attendance at the school of study over the two school years most recent to this study. Researchers can further expand on the findings in the study by investigating

students in different settings, as opposed to one school, as the researcher selected following PBIS implementation. Investigating different settings would provide more than one set of data in support of PBIS implementation to improve student achievement scores.

Discussion

With full implementation of schoolwide positive behavior support, Putnam et al. (2013) identified five components of a behaviorally competent school: (a) classroom management and curriculum variables adapted so academic tasks become less aversive, (b) a reduction in ODRs would mean more minutes spent in academic instruction; (c) minutes spent in academic instruction would be more effective; (d) less peer support would lead decreased academic failure; and (e) an increase in the structured prompts, contingent feedback, and support for academic behavior would improve students' overall success. The researcher was confident in the success of the school of study's decision to implement PBIS to improve the climate and culture surrounding discipline, student achievement, and attendance. In addition, the review of literature and the results from the quantitative and qualitative methods of analysis supported reimplementation.

The messages students received from the environment — home, community, and school — can either build confidence or work to destroy it (Muhammad, 2009). The implementation of PBIS relied on teacher–student relationships, implying agency, efficacy, respect for what the child brought to the class, including home, culture, and peers, and in-class recognition of the child's experiences (Hattie, 2009). The researcher recalled the focus throughout PBIS implementation was for teachers to build positive relationships with students and their parents. Further, developing relationships required

teacher skills, such as listening, empathy, caring, and having a positive regard for others (Hattie, 2009).

Past researchers noted building a positive school climate and culture as critical in student achievement. Because children cannot yet comprehend the long-term outcomes of failure - to succeed in school, the researcher believed in the necessity to involve parents and teachers in efforts to help the students succeed (Muhammad, 2009). Providing feedback to students when each displayed appropriate or inappropriate behavior was important; however, giving feedback to the teacher was critical, as well. When teachers sought or at least were open to feedback from students as to what the students knew and understood, where they made errors, when they had misconceptions, and when they were not engaged, then teaching and learning became synchronized and powerful (Hattie, 2009).

For the 2002–2003 school year, staff members rejected using familiar methodologies familiar in favor of implementing PBIS with fidelity. The decision came in part because of high numbers of discipline referrals and failing grades coupled with low average daily attendance and percent of students scoring proficient and advanced on the MAP test. Results of the study showed the staff made the appropriate decision, even in the face of such challenges.

Professional development was critical in implementing a schoolwide system, such as PBIS. As shared in previous chapters, staff at the school of study received ongoing professional development opportunities and training. In addition, the staff at the time of dissertation completion received professional development for PBIS implementation at all three tiers.

Conclusion

Based on study outcomes, the researcher recommended the school of study continue with reimplementation of PBIS to reduce the number of ODRs and failing grades, and to improve the percentages of average daily attendance and students scoring at proficient or advanced levels on the MAP test. The implementation included the creation and correct implementation of a PBIS leadership team posting Tier 1 expectations and providing interventions and support to meet the needs of students qualifying for Tiers 2 and 3. In the researcher's experience, training all staff members through every step of PBIS implementation was necessary, so each responded in the affirmative to questions found in the SWPBIS Tiered Fidelity Inventory.

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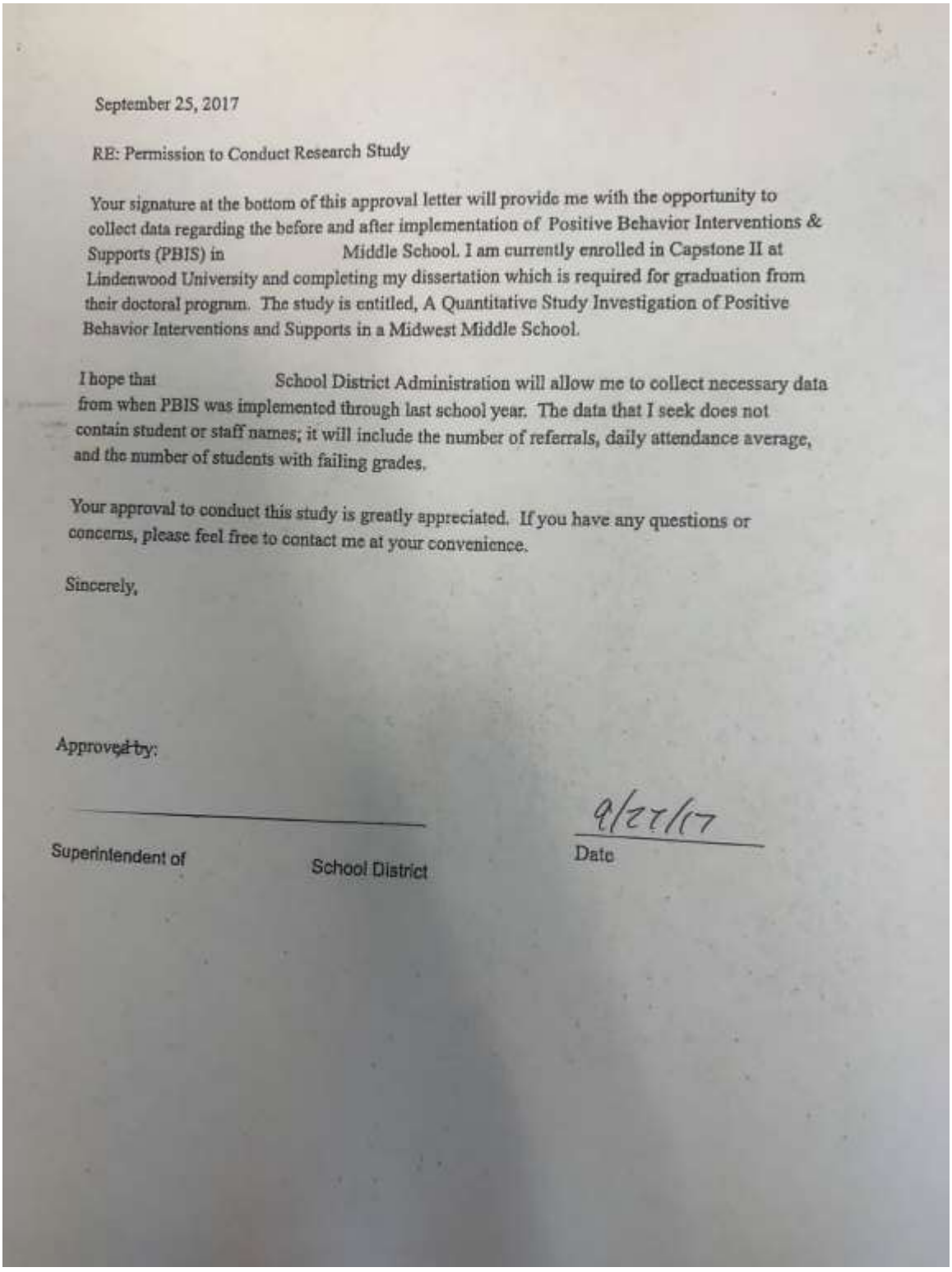
Appendix



September 25, 2017

RE: Permission to Conduct Research Study

Your signature at the bottom of this approval letter will provide me with the opportunity to collect data regarding the before and after implementation of Positive Behavior Interventions & Supports (PBIS) in Middle School. I am currently enrolled in Capstone II at Lindenwood University and completing my dissertation which is required for graduation from their doctoral program. The study is entitled, A Quantitative Study Investigation of Positive Behavior Interventions and Supports in a Midwest Middle School.

I hope that School District Administration will allow me to collect necessary data from when PBIS was implemented through last school year. The data that I seek does not contain student or staff names; it will include the number of referrals, daily attendance average, and the number of students with failing grades.

Your approval to conduct this study is greatly appreciated. If you have any questions or concerns, please feel free to contact me at your convenience.

Sincerely,

Approved by:

Superintendent of School District

9/27/17
Date

Vitae

Thomas Dittrich, Jr., graduated from Harris-Stowe State University in 1998 and taught middle school level students Communication Arts 7 for one school year. After one year, he transferred to the high school level to teach Communication Arts 9, Communication Arts 10, Career Academic Transition 9, Career Academic Transition 10, Core Credit Recovery 10-12, and Sports Literature for four years. During his first five years as a teacher in the district, he coached cross country, basketball, and baseball. Thomas earned a Master of Arts Degree from Lindenwood University in 2003. After teaching for five years, Thomas served as an administrative intern for one year at the middle school. Following this internship, he served as the assistant principal in the middle school for eight years, from 2004 to 2012, in which he also earned an Educational Specialist Degree in Educational Administration from Lindenwood University in 2011. Thomas transferred to the high school and served as the assistant principal and athletic director for two years from 2012 to 2014. At the time of the dissertation completion, he worked as the principal of the middle school and upon completing his doctorate, planned to continue in the role of principal at the middle school and was eager to explore positions, such as Assistant Superintendent and other roles at the central office level.