

The Effects of School-Wide Positive Behavior Supports Programs on Student Behavior and Achievement

The Effects of School-Wide Positive Behavior Support Programs on Student Behavior
and Achievement

A Field Study

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In Partial Fulfillment

Of

The Requirements for the Degree of

Education Specialist

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To the College of Graduate Studies:

We are submitting a field study written by Rachel Funderburk entitled “The Effects of Schoolwide Positive Behavior Support Programs on Academic Achievement.” We have examined the final copy of this field study for form and content. We recommend that it be accepted in partial fulfillment of the requirements for the degree of Educational Specialist.



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DEDICATION

This work is dedicated to my family. My husband, Luke Funderburk, and our children have graciously supported me throughout my education, as I have pursued one degree after another. My family's support has allowed me to further my education in order to become the best teacher I can be. Without their support I do not think I would have been able to pursue and complete this process. I would also like to thank my many colleagues that always share words of encouragement with me to keep me motivated and on task.

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ABSTRACT

RACHEL FUNDERBURK. The Effects of School-Wide Positive Behavior Support Programs on Academic Achievement (under the direction of DR. JOHN MCCONNELL III).

School-wide behavior support programs are preventative programs implemented by a school in order to prevent negative behaviors that warrant an office discipline referral from ever happening. If these behaviors can be prevented, it is thought that the amount of time taken away from instruction due to these behaviors would be decreased. The following study was conducted in order to determine if a school's school-wide positive behavior support program would be successful at not only reducing discipline referrals, but to see if it could also increase student academic achievement scores as measured by yearly state mandated academic testing in the areas of Reading Language Arts, Mathematics, and Science. If the behavior program is found to be effective in both areas, the benefits for schools could be great. Not only will schools be able to reduce negative behaviors, but in doing so they may also be able to increase academic achievement.

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CHAPTER I

INTRODUCTION

The ultimate goal of today's schools is to educate our children. Often, these goals are met, but along the way many roadblocks are encountered. One major roadblock faced by today's educator is behavior problems. Behavioral issues can take away from important instructional time and often develop into more than one student losing out on this precious instructional time. In today's rigorous classrooms, there is more emphasis on instruction than ever. Students are expected to know more meaningful content earlier than ever and need to ultimately be able to use that content knowledge in order to pass state mandated standardized tests (Tennessee Department of Education, 2016a).

According to Walker, Ramsey, and Gresham (n.d.), 45% of teachers in urban schools have reported losing two or more hours of teaching time each week due to disruptive student behaviors. School-wide positive behavior support (SWPBS) programs have been found to be an effective way to eliminate negative behaviors in the classroom. With these programs successfully reducing negative behaviors, could they also be an effective tool for increasing student engagement and academic achievement?

Statement of the Problem

A portion of an educator's evaluation of job performance is now based upon the achievement scores of their students on standardized tests. Teachers that are not responsible for teaching a tested grade level or class that takes these particular tests have their performance partially based upon the test scores of the entire school. Since student behavior plays a role in the amount of instructional time lost on a daily basis, it is important not just for classroom teachers, but teachers building-wide to help implement

and enforce behavior expectations. By doing so, the loss of valuable instructional time can be prevented. Instructional time that may previously have been lost due to negative or disruptive behaviors could also be recouped by being efficient at not only teaching, but by managing or preventing disruptive behaviors (Tennessee Department of Education, 2016b).

Purpose of the Study

The purpose of this study was to determine if SWPBS programs could be effective in not only decreasing negative student behaviors, but could they also be effective at increasing academic achievement through the reduction of disruptive student behaviors. To determine if SWPBS programs are effective at reducing negative behaviors, the historical office discipline referral (ODR) data was reviewed for one elementary school in a Tennessee school district. The three-year review began with the year prior to the school implementing the SWPBS program, the year the program was implemented, as well as the year after the program was implemented. The amount of referrals each year was examined.

In order to determine if SWPBS programs play a role in increasing academic achievement scores, historical data was examined for the same elementary school that provided ODR data. The school in this study used an SWPBS program and was evaluated on academic achievement improvement by examining the Tennessee Comprehensive Assessment Program (TCAP) scores one year prior to the program implementation, the year of implementation, and the year after implementation. By reviewing the first year's data, a baseline for achievement was determined. Once a baseline was established for

academic achievement, it was determined if there was an increase in achievement based upon the student's scale scores on the TCAP assessment each year in the academic areas of Reading/Language Arts (RLA), Mathematics, and Science. Since TCAP is only administered to third through fifth grade students in elementary schools, those were the grade levels that had scores examined in RLA, Mathematics, and Science. The baseline year focused on third grade scores; the implementation year examined fourth grade scores, and the second year of implementation reviewed fifth grade scores.

Significance of the Study

If the number of behavior referrals can be reduced using an SWPBS program, then essentially instructional time can be minimally impacted. The teacher can spend more quality time teaching the subject matter and less time dealing with disruptive classroom behaviors. If losing instructional time can be prevented, it can be said that student achievement should increase due to the decrease in student behaviors that would hinder productive instructional time. Gage, Sugai, Lewis, and Brzozowy (2015) conducted a study in which they looked specifically at previous research on the impacts of SWPBS programs and their possible impact on academic achievement. The research was mixed, and the study they conducted indicated there was not a direct impact on students in the state of Connecticut that they examined. The researchers indicated future research should be conducted in other geographic regions to see if the results were similar. This study takes that next step and examines the impacts of SWPBS programs on students in one county in the north central part of the state of Tennessee.

Delimitations

There are five specific delimitations for this study. The first is the location where the study took place. The researcher is employed for a school district in Tennessee and the study looked at data pertaining to one school in particular within that district.

The second delimitation is the achievement measure used to determine academic achievement. In the state of Tennessee, the state mandated test to measure RLA, Mathematics, and Science proficiency is the TCAP assessment. This study examined a specific group of student's TCAP assessment scores for the academic areas of RLA, Mathematics, and Science as they moved from third to fifth grades.

The third delimitation is the population of students chosen. Only a specific cohort of elementary school students were examined for this study. The elementary school these students attended must also have been using an SWPBS program. The program must have been implemented for at least two consecutive years. The purpose of this is the fourth delimitation, which is to look at the ODR and TCAP assessment data for said school the year prior to the implementation of the SWPBS program as well as two years of implementation. By looking at a year prior, a baseline was set for both the ODR data and TCAP scores in order to determine if the implementation of the program leads to a decrease in discipline referrals and an increase in achievement scores. Examining the second year of implementation determined if those changes were maintained, returned to baseline, or if the scores changed again.

The final delimitation was the choice to not compare one school's data to another. The demographics of schools in the district can vary greatly from school to school.

Therefore, the school that was chosen to have its ODR data and TCAP assessment scores reviewed were only compared to the previous year's data and not compared against another school. Schools may not have implemented SWPBS programs at the same time, so data for the same years was not available to be looked at for each school either. It was also found during the school search that there was only one viable option for the elementary school in the study, therefore there were no other schools to compare.

Limitations

There were six limitations that were taken into consideration with the development and completion of this study. The first limitation was the how the sample of students was chosen. The sample was chosen due to the availability of data.

The next limitation was not all schools in the district using SWPBS programs, and those that did may not all have implemented the program in the same ways. Some may only have Tier 1 interventions, while others may have Tier 2 and Tier 3 levels of intervention. It also could not be determined with what fidelity these schools had implemented and used the program in their building. Due to this limitation, only one school was chosen for review.

The availability of data was also a limitation in the study in that only the ODR and TCAP assessment scores for one school in one district in the state were being examined. Due to the fact only one school was being evaluated, the external validity of this study will be impacted. According to Shuttleworth (2009), having a small sample size for comparison can call into question the generalizability of the study to a larger population.

In order to collect data across multiple school years, it was most convenient to look at historical TCAP data related to the years of implementation of the school's SWPBS program. TCAP is a criterion-referenced achievement measure used to determine a student's mastery level of specific grade level standards. TCAP is only given to students in third through eighth grades on the elementary and middle school level. This means that the achievement of only those grades could be used to determine if the SWPBS program played a role in achievement for those grade levels.

A limitation related to the TCAP assessment also came up. Between the 2014-2015 school year there was a change in the Social Studies standards by the state, causing this academic area to be excluded from the TCAP assessment during that school year. Due to this exclusion, there were no Social Studies TCAP assessment scores to examine for that year, therefore the Social Studies TCAP assessment scores were excluded from the academic achievement analysis portion of this study.

The population of students in the district can be a limitation as well. The school district being examined had a very transient population of students. There is a military base located adjacent to the county, meaning this population of students often moves in and out of the district suddenly. For those moving in, if they came from out of state they did not have the same knowledge of the curriculum, and may not score as well on the TCAP exam as their peers.

Assumptions

The first assumption was that the TCAP test scores could be considered reliable and valid. All scores examined were historical data compiled in regards to how individual

students performed in the areas of RLA, Mathematics, and Science as indicated by the students scale score in each area.

In order to run a parametric analysis of the data, there were certain statistical assumptions that had to be met. First, the assumptions included data that was continuous and not discrete. Second, the data was normally distributed. Third, the samples were independent of each other, meaning there was no relationship between individuals in one sample and individuals in another sample. Finally, the variances of the samples were equal.

The final assumption is that the school examined had properly implemented their SWPBS program, they had trained all faculty and staff, and had implemented the program with fidelity across the years being studied. It was important for the school being examined to have had fidelity in implementation, as this study is longitudinal and looked at three consecutive years of data for the school. There needed to be consistency from year to year with how the program was being used in order to rule out other factors that could have an impact on discipline referrals and achievement scores.

Definition of Terms

1. Office Discipline Referral (ODR): Referrals for student behavior that must be addressed by the designated office staff member.
2. Positive Behavior Intervention Support (PBIS): A universal prevention program designed to improve the overall school environment by promoting positive change through reducing negative behaviors on school wide, classroom, or individual basis (Bradshaw, Koth, Bevens, Ialongo, & Leaf, 2008).
3. Schoolwide Positive Behavior Support (SWPBS): A universal prevention program designed to improve the overall school environment by promoting positive change through reducing negative behaviors (Bradshaw et al., 2008).
4. Tennessee Comprehensive Assessment Program (TCAP): A statewide criterion-referenced assessment used to measure student mastery of academic standards taught in the state of Tennessee. Students in third through eight grades take the achievement measure in the areas of RLA, Mathematics, Social Studies, and Science (Tennessee Department of Education, 2016a).

CHAPTER II

REVIEW OF LITERATURE

History of Discipline Practices

Educational practice is constantly evolving. Through educational research, new information as to what is effective educational practice is discovered all the time. One aspect of educational practice that has evolved throughout the years is classroom and schoolwide discipline practices. Adams (2000) states “discipline means the progression of some type of linear training and preparation to attain a desired goal (effect) or mastery of a desirable end. Discipline is both an antecedent and an expected outcome or predictable behavior” (p. 143).

One of the earliest forms of discipline in classrooms in the United States was a form of corporal punishment. Floggings were common practice in schools from the time of the one-room schoolhouse up until the mid 1960s to 1970s. This disciplinary practice was meant to act as a punishment for the offender as well as a deterrent for onlookers. This practice was thought to have been more effective in the days of the one-room schoolhouse; however, it lost its effectiveness within the changing structure and design of schools (Adams, 2000).

The next evolution of disciplinary practices included the introduction and use of suspensions and expulsions for negative student behavior. These practices became an efficient way to handle disruptive behaviors among the growing population of students in schools. As more students entered public schools, these methods seemed to be a quick and effective way to stifle negative student behaviors. Suspensions and expulsions were

also seen as an easy way to protect the overall student population. By removing the problem student or students, the threat was deemed nullified (Adams, 2000).

Adams (2000) explains that these practices really gained popularity in the 1970s, and ultimately they came under the fire of the Supreme Court due to the fact that students were being denied their due process rights, as well as their right to a public education. Going forward after the court cases, schools now had to provide students with written documentation of the charges they faced and had to give students time to respond. Due to the new limitations on the expulsion and suspension practices, an alternative was developed.

The practice of in-school suspension was developed after numerous lawsuits were filed against school districts for their exclusionary practices of expelling and suspending students from school for disciplinary infractions. By the mid 1980s, in-school suspensions became the next form of punishment for students in need of disciplinary action. With in-school suspensions, disruptive students are still excluded from their peers in the regular classroom, but instead of being removed from the building altogether, they are placed in an isolated location in the building. When students serve an in-school suspension, they are still held accountable for instructional time and the schoolwork being completed in the classroom (Adams, 2000).

In the late 1980s and early 1990s, there was a rise in the amount of discipline problems schools were seeing on a daily basis. Not only did the amount of disruptive behaviors increase, but the intensity and severity of these behaviors increased as well. Schools began to encounter more violent acts on a more regular basis. With this

escalation, a new policy was developed. Zero-tolerance policies came about in order for schools to be able to take immediate action in regards to drastic or violent behavior infractions. With zero-tolerance policies, certain infractions, such as possession of a firearm or illegal drugs and substances, can lead to a student being “automatically suspended for up to five days or expelled from school. Such policies ensure that punishment is swift and certain” (Adams, 2000, p. 147).

Adams (2000) explains that these zero-tolerance policies can be detrimental to students as well. The first concern is related to the student being punished. Most often, they are the student most in need of an education. Second, at times students are expelled for zero-tolerance infractions that, compared to other infractions, are minor incidents. Finally, there are “no data to suggest that zero-tolerance policies actually reduce school violence. Schools where zero tolerance policies were put into place were actually found to be less safe than those without the harsh policy in some instances” (Adams, 2000, p. 148).

In the early 1990s, researchers began to look into behavioral practices that could be more preventative than reactive in regards to student behavior. Schoolwide programs based upon reinforcing positive behavior became the next area of research and development. By the 2000s, schoolwide positive behavior support programs had been developed and were beginning to be implemented in elementary and middle schools across the country (Colvin, Kameenui, & Sugai, 1993). Bradshaw and Pas (2011) explained that, as of the year 2011, “an estimated 14,000 schools in the United States

have received training in school-wide PBIS, with over 44 states developing statewide systems for training and coordination of these programs” (p.531).

Reactive Discipline Practices

According to Nichols (2004), teachers across the United States have reported that negative student behavior substantially limits attempts at teaching academic material on a daily basis. Disruptive behaviors were shown to impede student learning and impact student achievement in negative ways. Many school systems chose to use reactive discipline systems in order to handle problem behaviors. Consequences such as detention and suspensions were used as a deterrent for problem students and behaviors (Feuerborn & Chinn, 2012). While exclusionary practices like suspension were used in many forms throughout U.S. history, the use of suspensions greatly increased since the 1970s (Noltemeyer & Ward, 2015). Sugai and Horner (2002) explained that when these types of consequences are used on students with a history of these behaviors, it then becomes more likely that these students will repeat the behavior with more frequency and intensity.

Luiselli, Putnam, Handler, and Feinberg (2005) explained that based upon SWPBS research, it was found that every ODR resulted in a loss of 20 minutes of instructional time per referral. Each suspension resulted in a loss of six hours of instructional time. Every time a student received one of these consequences, they were losing out on precious instructional time needed in order to prepare students for the rigorous academic standards and achievement testing they are responsible for mastering and completing in order to show grade level mastery and to progress through each grade.

Skiba and Peterson (2003) noted that in recent years zero tolerance policies have played a large role in shaping a school's punishment and discipline procedures. It is thought that it is best to punish all misbehavior in a severe manner in order to send a strong warning message to others and prevent future behavior problems. One of the most common forms of discipline in an elementary school setting is to have the child removed from the classroom. Students are taken to another room or removed by an administrator. Students often receive some form of suspension either in-school or out-of-school. Research suggests these methods may not be the most effective when it comes to eliminating negative student behavior, as these exclusionary methods act as a reinforcement of the negative behavior, for some students. Avoidance can be a precursor to negative behavior and removing students from the classroom or school can be a way for student to avoid being in an undesirable situation. When students who exhibit avoidance behaviors learn they can misbehave and be removed from an undesirable situation, it is more likely they will continue to display these behaviors in order to be removed from the classroom. (Alsubaie, 2015).

Noltemeyer and Ward (2015) found that, nationwide, during the 2011-2012 school year, there were 3.5 million students who received in-school suspension (ISS), and 3.45 million students who received out-of-school suspension (OSS) for disruptive or negative behaviors in school. The purpose of either type of suspension is to serve as a punishment in order to decrease future negative or disruptive behaviors. In some cases, students did not see being removed from the classroom or the school as a punishment.

They saw it as a reward as they no longer have to be responsible for the demands of the classroom.

Research conducted on the effectiveness of ISS and OSS, found that these practices are ineffective at causing a positive behavioral change in students, and a link has been established between suspensions, academic failure, and school dropout rates. Schools with high suspension rates were shown to have a lower average score on their state's achievement tests compared to other schools with lower suspension rates. The cause for these lower achievement scores could be due to the fact that, when students are suspended, they miss important instructional time related to the content on the state tests (Noltemeyer & Ward, 2015).

While studies have been conducted on these reactive behavior solutions, the effectiveness of these discipline procedures, policies, and the responses of students receiving them have not been studied in meaningful ways in order to prove if these are a valid means of reducing or eliminating negative student behavior. While these reactive practices are often used because they can have a relatively immediate reduction in problematic behavior, they are often not effective in the long-term at preventing the problem behaviors and creating a positive school environment. These practices can give students, staff, and parents a false sense of security in regards to the way negative behaviors are being handled in school. In reality, these programs have not been found to assist in increasing teaching time, learning opportunities, nor the meaningful academic engagement of all students with the academic content all students are expected to master (Sugai & Horner, 2002).

Preventative Behavior Support Programs

Discipline problems in schools have a negative impact in many ways. Students and teachers may not feel safe at school, instructional time is lost dealing with behaviors, and it creates an overall negative learning environment. SWPBS programs were developed to be an alternative to schoolwide reactive discipline programs. These programs are a means of providing a schoolwide incentive for students to demonstrate positive behavior on a daily basis in school and in the process prevent undesirable behaviors (Solomon, Klein, Hintze, Cressey, & Peller, 2012). “SWPBS is a systems approach to establishing the overall social culture and intensive behavior supports needed to achieve academic and social success for all students” (Horner, Sugai, Smolkowski, Eber, Nakasato, Todd, & Esperanza, 2009, p. 133). Bradshaw et al. (2008) explained that SWPBS is a universal prevention strategy that aims to change the school environment by creating improved systems and procedures that promote a positive change not only in students but staff as well.

Fallon, McCarthy, and Sanetti (2014) posited that SWPBS programs are a “framework consisting of effective intervention practices aimed at establishing and improving the social culture, educational environment, and individual behavior of all students in a school” (p. 1). Gage et al. (2015) further explained that SWPBS programs were designed to improve the overall learning environment in schools by increasing the amount of time students are in school, engaged in instruction, and increasing the level of academic engagement of the students during said instructional time. “For students exhibiting problem behaviors, reducing discipline problems should increase exposure to

classroom instruction and in turn facilitate academic skill acquisition” (Gage et al., 2015, p. 199).

Sugai and Simonsen (2012) explained that Positive Behavior Intervention Support (PBIS) programs were adapted from “practices, principles, and systems implemented by behaviorists in the early 1960s and 1970s” (p. 4). These programs were a compilation of “behavioral theory, behavior analysis, positive behavior supports and prevention and implementation science that has been developed to improve how schools select, organize, implement, and evaluate behavioral practices in meeting the needs of all students” (Sugai & Simonsen, 2012, p.4).

PBIS programs were refined in the 1980s for students with behavioral disorders or students with disabilities that included unwanted or negative behaviors. Researchers then began to look at behavior systems that would focus on research-based practices that were data driven where the decision making process was concerned in order to teach social skills, improve student outcomes, and be preventative versus reactive. In 1997, the Individuals with Disabilities Education Act was reauthorized. Within this new legislation, it was written that a National Center on Positive Behavioral Interventions and Supports was to be developed. The purpose of its development was to provide assistance to schools with implementing evidence based practices that could be used to improve student outcomes for those with behavior disorders and special needs. The PBIS Center assisted in shaping the PBIS and SWPBS framework that is currently used in more than 16,000 schools nationwide (Sugai & Horner, 2002).

PBIS is defined as “a framework for enhancing the adoption and implementation of a continuum of evidence-based interventions to achieve academically and behaviorally important outcomes for all students” (Sugai & Simonsen, 2012, p. 2). Student outcomes serve as the main principle of these programs and the outcomes include academic and social, individual and small group, as well as outcomes that are educational and have social value (Sugai & Simonsen, 2012).

The goal of SWPBS is to “prevent disruptive behavior and enhance the school’s organizational health by creating and sustaining primary (schoolwide), secondary, (classroom), and tertiary (individual) systems of support” (Bradshaw et al., 2008, p. 463). Cohen, Kincaid, and Childs (2007) state that SWPBS uses “system-wide positive behavior interventions, including a positively stated purpose, clear expectations backed up by specific rules, and procedures for encouraging and adhering to and discouraging violations of the expectations” (p. 203).

Positive behavior support programs were developed to be multi-tiered intervention programs. The first level of intervention being the universal or schoolwide tier; this is the most common program used in schools adopting SWPBS programs. The schoolwide level is meant to “focus on intervention for all students in all settings” (McIntosh, Ty, & Miller, 2014, p. 209). The next level of intervention is the secondary or targeted Tier 2-intervention level. Students in Tier 2 are students who do not respond to the primary intervention level. These students are identified using a screening process in order to provide them with more specialized interventions on the secondary level. The final tier is the tertiary or intensive Tier 3, which provides the most intensive level of

support and is used for students who do not respond to either the primary or secondary levels of support. In this level of the program, students may undergo a functional behavior assessment in order to develop an intensive individualized behavior intervention plan that will meet their specific behavior needs (Martens & Andreen, 2013; McIntosh et al., 2014).

Tier 1 of the SWPBS framework contains these main components: “defined schoolwide behavior expectations, a process for teaching and re-teaching those expectations, an acknowledgement system, a process for preventing and addressing problem behaviors, and a system for collecting and analyzing data” (Martens & Andreen, 2013, p. 313). One of the main decisions a school must make when first implementing an SWPBS program is what the motto or purpose of the program will be. Before this can be done, Ross and Horner (2014) explained that schools need to form a “representative school problem-solving team” (p. 226). This team would then meet to make decisions in regards to administrative, academic, and social issues that would be affected by the implementation of the SWPBS program. This team would establish the clear positive schoolwide behavior expectations that will be used as the basis of the school’s SWPBS program.

The school’s motto and behavior expectations will help draw students in and set the stage for the program’s purpose. Bradshaw, Mitchell, and Leaf (2010) explained further that expectations should be clearly defined and known by students and staff. Schoolwide rules should be limited to three to five positively stated expectations such as be respectful, be responsible, and be ready. The next aspect needed is explicitly clear

expectations for every area of the school. Hill and Flores (2014) maintained that these rules should be clearly posted in every room in the building, using not only words, but pictures as well.

According to Ross and Horner (2014), once these positive rules are established, guidelines of what these rules look like throughout each area of the school should be created. Then explicit lesson plans should be developed in order to teach the students what it looks like to be respectful, responsible, and ready in all areas of the school: the library, cafeteria, classroom, playground, hallway, etc. These expectations should be taught and modeled using direct instruction methods.

Solomon et al. (2012) elaborated further on teaching the expectations of the program to students. Some schools have gone as far as having planned behavioral lessons for each expectation in each area of the school and teaching these explicit lessons to students in those areas at the beginning of the school year, as well as teaching refresher lessons throughout the school year, usually after long breaks from school. With each new school year, the SWPBS practices of the school should also be retaught to all members of the faculty and staff to ensure that new members of the faculty and staff as well as returning members have the most up to date information on how to use and model these principles and practices.

One of the last steps in developing an SWPBS program is deciding what type of reinforcement will be used to reward students for following the expected behaviors (Ross & Horner, 2014). Hill and Flores (2014) explained the one thing that can be used for a schoolwide incentive is “gotcha tickets” (p. 95). Each time a teacher observes a student

demonstrating one of the schoolwide expected behaviors, the teacher would mark the ticket with the observed behavior, and then, using positive praise, give the ticket to the student. When giving out the gotcha tickets or the chosen incentive, it is important that the person giving the ticket clearly states to the student specifically why they are receiving the ticket in order to reinforce their positive behavior as well as provide a model for other students as to what desired behaviors look like (Hill & Flores, 2014). An example of the positive praise would be “Lauren, I like that you were respectful by raising your hand to speak” (Hill & Flores, 2014, p. 95).

Lane, Menzies, Ennis, and Bezdek (2013) explained that when using the ticket reward system, schools also need to have in place an exchange system in which students exchange their earned tickets for previously identified reinforcers. It is important the reinforcers appeal to all students as this helps students want to participate in the program. Reinforcement should be “a wide variety of items like homework passes, gift cards, schools supplies, and access to SWPBS assemblies in order to ensure that all students will find something they like” (Lane et al., 2013, p. 10).

It is very important that positive reinforcement be given frequently in order to acknowledge when a student meets these expectations, and logical consequences should be in place for when inappropriate behaviors occur (Horner, Sugai, & Anderson, 2010). Solomon et al. (2012) explained it is important that the means of positive reinforcement or the incentives provided for following expectations be meaningful to the students in order to get them to buy into the program. The authors went on to state that it is still just as important to maintain a system for discipline referrals, detentions, and suspensions,

and that most often existing policies can be kept in place, but may need to be adjusted to co-exist with the SWPBS model the school chooses to adopt.

Tier 2, or the secondary level of support, is offered to students who do not respond well to the primary level of support. Tier 2 supports may be given to a selected group of students and include social skill groups, behavior contracts, and additional incentives to support positive behavior. Lane, et al. (2013) explained “Tier 2 supports are low-moderate intensity supports provided to a selected group of students. These supports are additive and are not intended to replace Tier 1 behavior interventions” (p. 11). Debnam, Pas, and Bradshaw (2013) stated that “Tier 2 interventions may include a small group of students, identified by a teacher, that need more help developing a specific social skill, or meeting a specific behavior goal” (p. 117).

The final level of support would be the Tier 3 or individual level of support. This level of support is provided to students who do not respond to the universal intervention program, Tier 1, or the secondary level of intervention, Tier 2 (Debnam et al., 2013). “Tier 3 supports typically include more intensive, individualized interventions, like function-based behavior plans, individual counseling sessions, and wraparound services to meet students’ specific behavior needs” (Debnam et al., 2013, p. 117). Yong and Cheney (2013) explained, “within a multitier system of support, effective interventions at lower tiers translate to fewer students needing more intensive support in the higher tiers” (p. 845).

Since their development, beginning in the 1980s, there have been many experimental studies conducted on the effectiveness of the PBIS framework at the

schoolwide level. These studies have found positive improvements related to decreased disciplinary problems and an increase in the organizational health or school climate of schools. Increases in student engagement, as well as academic achievement, were found in some instances. Studies even found that instructional time was increased due to the reduction in the number of ODRs a school saw in an academic year (Sugai & Simonsen, 2012).

Bradshaw et al. (2008) conducted a longitudinal study over a three-year period looking at the effects of PBIS on the overall organizational health in thirty-seven elementary schools. The researchers hypothesized, with the implementation and use of PBIS principles, they could boost overall faculty and staff morale. The researchers thought this may play a role in how well the principal or administration are able to lead, not only staff, but students as well, to have a successful school year. The Organizational Health Inventory for Elementary Schools is a measure in which staff report on a school's organizational health. It consists of five different aspects: institutional integrity, staff affiliation, academic emphasis, collegial leadership, and resource influence. This measure was given to 2,507 school staff members across the 37 elementary schools involved in the study.

It was found that schools that implemented PBIS showed significant improvement in several aspects of their school's organizational health. While the case can be made that the PBIS intervention program played a role in the improvement of the school's organizational health, the researchers cannot determine exactly how the five facets

studied using the Organizational Health Inventory were influenced (Bradshaw et al., 2008).

Caldarella, Shatzer, Gray, Young, and Young, (2011) conducted a longitudinal study over four years in order to determine the effects of SWPBS on school climate using the Indicators of School Quality to determine effectiveness. The Indicators of School Quality reflected significant upward trends in school climate for the treatment school over the four-year study. These results were similar to that of Bradshaw et al. (2008) in that both studies found a positive link between SWPBS and improved school climate or organizational health as it relates to the faculty and staff.

Mass-Galloway, Panyan, Smith, and Wessendorf (2008) conducted a longitudinal study beginning in 2002, using 108 Iowa schools in order to determine the effects of SWPBS on behavior referrals. Each school developed their own ODR form, and all staff members were given these forms to complete after a minor or major discipline problem. Behavior referral data was collected and studied using a web-based data-tracking program. Areas that were tracked included the problem behavior, location, time, and students. The data were then reported by ODRs per day, month, and per 100 students (Mass-Galloway et al., 2008).

Data related to the ODRs indicated a significant decrease in referrals for cohort one, and a decrease for cohort three, however cohort two actually showed an increase of office referrals each of the three years. “Seventy-five percent of these schools showed a 42% average rate of decrease in ODRs per day per 100 students across a two-year period” (Mass-Galloway et al., 2008, p. 132). Another trend noticed during this study was

the amount of instructional time saved by the reduction in ODRs. One site saved 53 instructional hours; another saved 239 instructional hours, while a third saved 43.6 instructional hours (Mass-Galloway et al., 2008).

Curtis, Van Horne, Robertson, and Karvonen (2010) also conducted a study in which they analyzed data in the following areas: behavioral referrals to the principal, extended timeouts within the school day, out-of-school suspensions, and instructional days lost. Upon analyzing archival data, it was found that “behavior referrals decreased by 47.8% from the baseline year of 2002-2003 and 2006-2007. Extended timeouts during the same time period decreased 1.7%. Out-of-school suspensions decreased 67% and instructional days lost decreased by 56.5% during the same time frame” (Curtis et al., 2010, p. 161).

Bradshaw et al. (2010) completed research on the outcome of a five-year longitudinal study conducted to determine the effectiveness of SWPBS on the behavioral outcomes of students in thirty-seven Maryland elementary schools. After analyzing the data, researchers found that, at the end of the first year of the study, the rate of ODRs per 100 students per day was .201, and that dropped to .159 by the last year of the trial. These numbers were both well below the average national rate of .34 to .37 among schools using SWPBS during the same years that this study was conducted.

Student Achievement

In recent years, academic achievement has become an important aspect of everyday teaching and learning in schools nationwide. With the passing of the No Child Left Behind Act (NCLB) in 2002, all schools in the United States would now be required

to “conduct annual achievement assessments linked to states standards in order to identify schools failing to make adequate yearly progress toward the goal of having all students achieve proficiency in reading and math by 2013-2014” (Dee & Jacob, 2011, p. 418). This legislation drastically increased the federal governments reach in the involvement of public education in every state and school. NCLB required states to implement accountability systems that included annual testing of public school students in third grade through eighth in order to measure school performance and determine if adequate yearly progress is being met according to each state’s proficiency goals (Dee & Jacob, 2011).

The NCLB reform was just the first of multiple changes in the education community over the past twenty years. Part of the NCLB act included the state mandated testing of a set of academic standards set forth by each state. “Standards describe what students should know and be able to do in specific grades and subjects, typically accompanied by examinations that determine the extent to which students have met these benchmarks” (Murphy & Torff, 2014, p. 19).

The next reform is based upon the need for states to have a given set of standards. The Common Core State Standards (CCSS) Initiative was introduced in 2010, and by 2014 had been implemented in 45 states (Murphy & Torff, 2014). The CCSS were developed through collaboration between the “Council of Chief State School Officers and the National Governors Association, along with input from parents, teachers, school administrators, and content experts” (Neuman, & Roskos, 2013, p. 9).

These standards were developed to be a progression of learning expectations in the academic areas of Reading Language Arts and Mathematics. The purpose of these rigorous standards was to ensure that all students in grades K-12 would leave having graduated from school, college and career ready. Another consideration with the development of the CCSS was the current variability from state to state in the academic standards being taught. In the past, states had standards in place, although they varied greatly, not only in their expectation, but their coverage from state to state. With the development, implementation, and adoption of the CCSS, most states, regardless of where students live or may move, would now be held to the same set of standards in any state having adopted the CCSS (Neuman & Roskos, 2013).

Research, evidence-based practices, and even standards from other countries were evaluated and used during the development of the CCSS, because other countries are known to provide their students with a high-quality education. When developing the CCSS, it was important to ensure they would be demanding and rigorous at all levels in order to prepare students for higher education and/or their career choice. These standards are clear and consistent, include content that evokes higher order thinking skills, are evidence based, and are aligned with college and work expectations (Neuman & Roskos, 2013).

Further education reform was also passed in order to ensure accountability related to educational practices. The U.S. Department of Education rolled out the Race to the Top program in 2013. The Race to the Top program provides funding to states in exchange for implementation of policies that would hold teachers and administrators

accountable for the test results of their students. These new accountability practices would mean that an educator's evaluations would now be based upon the performance of their students on the high-stakes testing. These tests were developed and centered on the implementation of the new rigorous standards. This means the Race to the Top program could also impact job retention and tenure for educators as their evaluation scores were now directly linked to their students' academic performance on their states high stakes testing (Neuman & Roskos, 2013).

The most recent piece of educational legislation was passed in December of 2015. The Every Student Succeeds Act (ESSA) was signed into law by President Obama as a reauthorization of the Elementary and Secondary Education Act (ESEA), which provided equal opportunity for all students. Some of the provisions in the ESSA included a mandate that all students be taught using high academic standards that will ensure success. Annual statewide testing will be conducted in order to measure every student's progress towards meeting those high standards. It also expands on the amount of funding used towards preschool programs in order to increase the amount of programs offered throughout the country (U.S. Department of Education, 2016).

TCAP/TN Ready

After states began to adopt the CCSS in 2010 and 2011, it was determined there was now a need for high-stakes testing that would be aligned with the new more rigorous academic standards. In the past, states had varying methods of assessment in order to determine proficiency with their state standards. The Partnership for Assessment of Readiness for College and Careers (PARCC) was developed in order to be a rigorous

assessment made to match the new CCSS. At this time, eleven states have adopted PARCC as their method of annual assessment used to measure student proficiency and adequate yearly progress. Many states that have implemented CCSS have chosen not to adopt the PARCC assessment at this time (Partnership for Assessment of Readiness for College and Careers, 2016).

Tennessee has yet to adopt the PARCC assessment. The state of Tennessee has used the TCAP assessment as its testing program since 1988 (Tennessee Department of Education, 2016a). In 2015-2016, the state rolled out a new assessment based upon previous TCAP testing, however, it was improved in order to better assess student achievement based upon the state's new educational standards adopted in 2010. The TCAP assessment was annually given to all students in third through eighth grade in the state of Tennessee. The assessment was given to measure student progress and growth in RLA, Mathematics, Science, and Social Studies. The new and improved TN Ready assessment, which still falls under the main TCAP umbrella, is intended for students in third through eleventh grade in the subjects of English Language Arts and Mathematics (National Center for Education Statistics, n.d.; Tennessee Department of Education, 2016c).

Students and educators in the state of Tennessee are measured on the proficiency rate students achieve on the assessment. The performance levels are based upon a scale and it includes below basic, basic, proficient, and advanced. These levels indicate to what extent the students have mastered their grade level content. Students' proficiency rates are based upon their scale scores. The students' scale scores are used to compare the

students' performance from year to year. These scale scores are used because questions on the test often change from one year to another. However, the rate of proficiency does not change from year to year (Tennessee Department of Education, 2016d).

SWPBS Research

In order to guide the current study, an extensive literature search was conducted to find other research related to the effects of SWPBS programs on office discipline referrals and academic achievement in elementary and middle schools. A search of the ERIC, Education Full Text, and JSTOR databases was conducted using variations of the terms: schoolwide positive behavior support, SWPBS, PBS, and academic achievement.

Eight studies were found and identified as having some research component related to SWPBS programs and the achievement scores of students in elementary and/or middle school. From the identified studies, three of the eight studies strictly looked at the effects of SWPBS programs on academic achievement for the purpose of their research (Bradshaw & Pas, 2011; Gage et al., 2015; Sailor, Zuna, Choi, Thomas, McCart, & Roger, 2006).

The other five studies researched the effects of SWPBS on student outcomes. Student outcomes can include several variables related to student performance. Student academic achievement, office discipline referrals, suspension, and social behavior scales were all considered student outcomes (Bradshaw et al., 2010; Horner, et al., 2009; Luiselli et al., 2005; Muscott, Mann, & LeBrun, 2008; Simonsen, Eber, Black, Sugai, Lewandowski, Sims, & Myers, 2012).

Of the eight identified studies, four looked specifically at elementary school students only. Luiselli et al. (2005) looked at one elementary school in the state of Maryland with an average of 563 students. Bradshaw et al. (2010) conducted an experimental study, which involved 37 elementary schools in the state of Maryland. Twenty-one of those were treatment schools and the other 16 served as control schools. The average number of students between the schools was 489. Bradshaw and Pas (2011) also studied elementary schools in Maryland; however, they studied a much larger population. In their study, 807 elementary schools were analyzed with an average of 458 students. The fourth study was set up as an experimental study using 30 treatment schools and 30 control schools, all of which were elementary schools. The schools involved were from either Hawaii or Illinois (Horner et al, 2009).

Only one study strictly looked at middle school students. Sailor et al. (2006) conducted a case study looking at three middle schools in California with fifth through eighth grades. The three remaining studies looked at schools on all three levels: elementary, middle, and high schools. Muscott et al. (2008) looked at 21 schools; 12 elementary schools, two multi-level schools, five middle schools, and two high schools. All of these schools were located in New Hampshire. Simonsen et al. (2012) researched a total of 428 schools in Illinois. Of those schools, 274 were elementary schools, 46 were K-8 grade schools, 91 were middle schools, and 17 were high schools. Gage et al. (2015) conducted a longitudinal study looking at 1,157 elementary, middle and high schools in Connecticut.

All eight of the research studies evaluated for the purpose of guiding this study, used the high stakes assessment from the states in which the schools were located as the measure of academic achievement to determine if the SWPBS programs implemented in the schools had an effect on overall student achievement (Bradshaw et al., 2010; Bradshaw & Pas, 2011; Gage et al., 2015; Horner et al., 2009; Luiselli et al., 2005; Muscott et al., 2008; Sailor et al., 2006; Simonsen et al., 2012).

Bradshaw et al. (2010) studied the gain in students who moved above proficient on the Maryland School Assessment in both RLA and Mathematics. Bradshaw and Pas (2011) examined scores only in reading. Their study examined how implementation of a SWPBS program impacted the number of students whom scored proficient or advanced on the Maryland Student Achievement test in RLA. Gage et al. (2015) reviewed historical data across a five-year span to determine the differences in the number of students at or above proficient on the Connecticut Mastery Test (CMT) and the Connecticut Academic Performance Test (CAPT). They examined the scores in three content areas: RLA, Mathematics, and Writing. Horner et al. (2009) only studied the academic area of RLA by looking at the number of third grade students at or above the state reading standards on the Illinois State Achievement Test for the schools in their study located in Illinois. For the schools in their study located in Hawaii, they also only looked at RLA scores of third grade students, except the Stanford Achievement Test was used as the measure of achievement. Luiselli et al. (2005) examined student percentile ranks on the Metropolitan Achievement Test (MAT-7) in the academic areas of RLA and Mathematics. Muscott et al. (2008) studied the number of students at or above the basic

achievement level on the New Hampshire Educational Improvement and Assessment Program in the areas of both RLA and Mathematics. Sailor et al. (2006) researched the change in student test scores for those at or above proficient from one year to the next after the implementation of SWPBS programs in three middle schools. The measure used to determine academic achievement was the California Standardized test. Both English and Mathematics were examined as part of the study. Finally, Simonsen et al. (2012) studied the Mathematics and RLA scores of students on the Illinois State Achievement Test. In order to determine if achievement was impacted, they evaluated the number of students meeting or exceeding grade level mastery according to the state assessment.

Literature Review Findings. The results among the eight different research studies varied from the outcome to the degree of the outcome. Three of the studies reported no statistical change in academic achievement scores in any of the academic areas examined during the course of their research (Bradshaw et al., 2010; Gage et al., 2015; & Horner et al., 2009).

Bradshaw and Pas (2011) had mixed results within their study. Since they also looked at what degree of fidelity schools had implemented SWPBS programs, they then compared fidelity to student achievement. In all of the schools examined, the RLA scores were significantly impacted by how well the SWPBS program was implemented and with what degree of fidelity. The results indicated that the less training schools received on implementing their SWPBS program, the lower the percentage of students at or above proficient or advanced in RLA.

The four remaining studies all indicated a positive increase in academic achievement related to the implementation and use of a SWPBS program at the schools studied. Luiselli et al. (2005) found that the average percentile rank of students increased an average of 18% in Reading and 25% in Math from the pre-intervention year to the first year of implementation of the SWPBS program. Muscott et al. (2008) discovered positive increases in both RLA and Mathematics while conducting their study. In the area of Mathematics, 73% of the schools studied reflected an increase in the number of students at or above basic on the New Hampshire state assessment. In the area of RLA, 41% of schools reported an increase in the number of students at or above basic on the same assessment.

Sailor et al. (2006) examined test scores of students in middle schools, in grades fifth, sixth, seventh, and eighth on The California Standardized Test. During the first two years, 2003 and 2004, only 7% of students were above proficiency. During the 2005 school year, that percentage increased to 16%. Sixth grade students did not show any detectable change over any of the three years examined during the study. During the 2003 school year, only 4% of seventh grade students were above proficient; that increased to 7% in 2004, and increased yet again during the 2005 school year to 21%. For eighth grade students, only 3% were above proficient in 2003, in 2004 that increased to 6%, and in 2005 their scores increased again to 11% of students above proficient.

Simonsen et al. (2012) first identified schools found to be implementing their SWPBS program with fidelity using the Schoolwide Evaluation Tool (SET). Schools were then placed in two groups. The first were schools that had implemented the program

with fidelity, the other group were those identified as not having implemented with fidelity. For schools found to be implementing with fidelity, there was a significant difference between Mathematics achievement scores. However, no statistically significant differences were found between the two groups for RLA achievement scores.

Gaps in the Literature

Each of the studies varied in some way; the way they were conducted, what they were researching, and their findings. They did however, each make recommendations for future research based upon their research and conclusions. Bradshaw and Pas (2011) explained that the number of years an SWPBS program has been put in place might have an impact on increasing student achievement over time. Therefore, a longitudinal study should be conducted in order to see if student achievement scores increase over time with the SWPBS program. Two of the other studies also indicated a need for further research based upon the need for longitudinal research in order to discern any patterns that could be related to implementation and sustainability (Horner et al., 2009; Luiselli et al., 2005).

Bradshaw et al. (2010) listed variability among the different school districts they studied as a possible variable in the outcome of their study. The differences in the expectations from one district to the next can be very different. Those expectations could be how SWPBS programs are implemented, how they are maintained and run from district to district, or even from school to school. Muscott et al. (2008) listed the same concern as an area of future research indicating that the variability from one district to another could possibly impact the effectiveness of an SWPBS program, thus hindering the benefit the program could play on academic achievement. Gage et al. (2015) further

explained that even the geographic location of their study could be a factor, since they studied schools only in the state of Connecticut. Simonsen et al. (2012) also listed their geographic location as an area of concern regarding future research. Their study involved schools in the state of Illinois. They indicated future research should be conducted in other states to see if similar results are found.

Several studies indicated that how SWPBS impacts specific grade levels or different groups of grade levels is an area that should be studied in the future. Some of the current research looked specifically at only elementary schools and one looked only at middle schools (Bradshaw & Pas, 2011; Bradshaw et al., 2010; Horner et al., 2009; Muscott et al., 2008; Sailor et al., 2006). Muscott et al. (2008) looked at kindergarten through twelfth grade in their study, and indicated, while they had positive results, it would be beneficial to look at grade level scores in order to help control for more variables. It would also allow researchers to detect any possible patterns in academic achievement based upon grade level.

Gage et al. (2015) and Simonsen et al. (2012) indicated that further research could be conducted using different measures of academic achievement as well. All of the current research used statewide achievement testing in order to determine if academic growth had been made. Simonsen et al. (2012) noted that curriculum based assessments (CBAs) or curriculum based measures (CBMs) may be a better indicator of student achievement, as they may be more closely aligned to what is being taught in the classroom compared to the state standardized assessments.

Literature Review Conclusion

The literature review laid out the need for SWPBS programs, what SPWBS programs are, and how they are beneficial to schools that implement them correctly. The literature also showed that they are effective in many ways. Research has indicated SWPBS programs had been found to reduce negative behaviors in schools by reducing the number of ODRs and suspensions schools used as a form of punishment. Positive prevention programs were found to be successful in preventing negative behaviors from ever happening. Recent studies also found in some instances academic achievement was also impacted in a positive way after schools implemented SWPBS programs in their schools.

Current Study. The current study looked to extend the research related to the effects of SWPBS programs on the academic achievement of the students involved in the school using the program. Based upon the studies examined in the literature review, certain decisions were made as to how the current study was set up and carried out. This study examined the effects of SWPBS programs on elementary school students in a north central Tennessee school district. One particular school within the district that had implemented an SWPBS program was asked to share the year the program was implemented in order to look at historical discipline data and achievement data for that school around the years of implementation.

Due to the fact multiple studies indicated the need for research on SWPBS program over time, it was decided a longitudinal review of the schools historical TCAP assessment data would be the best way to determine the studied schools SWPBS program

played a role in the decreasing ODRs and increasing achievement scores. In order to review historical discipline data the school was asked to pull historical discipline reports for the entire school for the year prior to the program being implemented, the year the program was implemented, and the year after the program was implemented.

The most convenient way to measure student achievement was to use historical TCAP assessment data for the school involved in the study. The TCAP assessment is the one common assessment of which students in the third through fifth grades participate. Therefore, these scores could be compared to each other over time. Assessment data for three consecutive years was reviewed. Previous research used different forms of assessments as their academic achievement measure, including standardized achievement tests, as well as state mandated measures.

Research Questions

1. Did the implementation of an SWPBS program reduce the amount of office discipline referrals the school received?
2. Do SWPBS programs positively impact the performance of students on standardized achievement measures related to the state standards?

Research Hypothesis

1. The use of a School-Wide Positive Behavior Support programs will reduce the number of office discipline referrals a school receives in one academic year.
2. School-wide Positive Behavior Support Programs will have a positive impact on students' RLA, Mathematics, and Science academic achievement scores over time.

CHAPTER III
METHODOLOGY

Participants

This study looked at historical data for a particular cohort of students in an elementary school located in a North Central Tennessee school district. The elementary school used in this study was asked to report the year they implemented its program. The school reported having implemented and used an SWPBS program for at least three consecutive school years. The school was also asked to share their ODR data for the year prior to implementation, the year of implementation, as well as the year after implementation.

The effectiveness of the SWPBS program on reducing office discipline referrals was evaluated by its impact on the entire enrolled student population during the three school years, 2012-2013, 2013-2014, 2014-2015. The number of students enrolled during these three years were, 729, 766, and 729.

Table 1
The Number of Participants Based on Ethnicity

School Year	White	African American	Hispanic	Other	Total
2013	333	225	90	81	729
2014	325	251	105	85	766
2015	284	238	114	92	729

In order to have a consistent set of students, one cohort from the school was followed during the three-year period. The TCAP assessment scores for students in third grade during the 2012-2013 school year, the year prior to the school having implemented the SWPBS program, were compared to that same group of students' scores in fourth grade, the 2013-2014 school year, and then that same group when in fifth grade, during the 2014-2015 school year. In order to have the same group of students, only those that were enrolled across all three academic years had their scores examined. The total number of students enrolled for each of these three years was 61.

Materials

The independent variable was time. In order to determine if SWPBS programs impacted achievement, the TCAP assessment scores were examined over time. In order to determine a baseline for achievement scores, the data from the year prior to the schools reported implementation year was examined. This was the 2012-2013 school year. The next set of data examined was from the year the school reported they had implemented their SWPBS program. This was the 2013-2014 school year. Finally, the last set of data examined came from the second year of implementation. This was the 2014-2015 school year.

The dependent variable in this study for the academic achievement analysis was TCAP assessment scores. The study looked specifically at the students' scale scores for the academic areas of RLA, Mathematics, and Science. Historical TCAP assessment scores were provided through the school district's data analyst. The scale scores were

found on the Reporting Category Performance Index or (RCPI) reports provided by the districts data analyst.

The effectiveness of the SWPBS program on ODRs was determined by looking at the schoolwide amount of disciple referrals for each of the three years. This information was obtained by accessing the discipline reports that are logged in the schoolwide program PowerTeacher. The PowerTeacher program has many functions in the school system, one of which is tracking all major discipline referrals that are seen by administration in the office.

By examining achievement data over time, it can be determined if the SWPBS program truly had an impact on the student's achievement. By establishing a baseline for student achievement, the immediate impact can be determined by looking at the implementation years data. In order to determine if that trend continued, the second year of implementation data were examined as well.

Procedures

In order to collect the data needed for this study, elementary schools within the district were asked to share whether or not they were using an SWPBS program. The one school found to be using an SWPBS program that could be used in the study was then asked to divulge the year they implemented their program.

Once the school reported their year of implementation, office discipline referral information was obtained through PowerSchool reports that indicated the total number of students enrolled at the end of each academic year involved in the study, and the total number of office referrals received at the end of each year.

Historical TCAP assessment data was gathered and reviewed as well based upon the year the school's SWPBS program was implemented. In order to look at the same group of elementary school students over time, the TCAP assessment scores for third grade students the year prior to implementation were reviewed. The data for fourth grade, the year of implementation, and fifth grade, the second year of implementation, were also reviewed.

The reason only certain grades were looked at over certain years was to try and control the variability in the student population as much as possible across the three years. By following the same cohort of students, it is more likely to get an accurate depiction of the effects of the SWPBS program on their achievement scores over the three-year period.

The RCPI reports for each class, for the subjects of RLA, Mathematics, and Science were provided for the years of 2013, 2014, and 2015. These reports included the scores for each student who took the TCAP assessment during that school year in those classes. Each year over 100 students took the exam; however not all of these students were enrolled in the school across all three years being examined. In order to determine if the treatment impacted the students across all three years, only scores for students enrolled at the school for all three testing years were examined. This reduced the number of participant scores to 61. Each of the 61 students was then randomly assigned an ID number for the purpose of data entry.

Statistical Analysis

Office Discipline Referrals. The first data analysis completed for this study was related to the number of discipline referrals received by the school for each of the academic school years. Pairwise comparisons were conducted in order to determine if there was a statistically significant change in the amount of office referrals among the entire population of students during the three-years examined. The comparisons were made between the 2012-2013 to 2013-2014 school year, 2013-2014 to the 2014-2015 school year then an overall comparison was done between the 2012-2013 school year and the 2014-2015 school year.

These pairwise comparisons were conducted using a two-sample z -test for proportions. The number of referrals and total number of students for each year was used to create a proportion that indicated what proportion of students each school year had received an office discipline referral. The two-proportion z -test was completed using the following z -test formula:

$$z = \frac{(\hat{p}_1 - \hat{p}_2)}{\sqrt{\hat{p}(1-\hat{p})\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}}$$

Academic Achievement. Due to the factors related to the study, a Repeated Measures Analysis of Variance (RM-ANOVA) was chosen to run the statistical analysis on the academic achievement data. According to Hinkle, Wiersma, and Jurs (2003), it is appropriate to use a RM-ANOVA when the independent variable in a study is time and the dependent variable is being examined over time. In this study, TCAP assessment scores are being examined at three different points in time, the students third, fourth, and

fifth grade years. The ANOVA is used to detect the overall differences between related means across three or more points in time. In this study, that would be the means of the TCAP assessment scores across the three years evaluated.

Before running the statistical analysis, four assumptions for the RM-ANOVA had to be met. First, the sample had to be randomly selected from the population. Second, the dependent variable had to be normally distributed in the population. Third, the population variances for the test occasion were assumed to be homogenous. Finally, the population correlation coefficients between pairs of test occasion scores are equal (Hinkle et al., 2003).

Partial eta squared (η_p^2) was used to determine effect sizes and was calculated as:

$$\eta_p^2 = \frac{df_{effect} \times F_{effect}}{(df_{effect} \times F_{effect}) + df_{error}}.$$

Because the error terms for each comparison in this study were the same, using η_p^2 , estimates were deemed appropriate and defined as either small ($\eta_p^2 \leq .03$), medium ($.03 < \eta_p^2 \leq .06$), or large ($\eta_p^2 > .06$), in accordance with those suggested by Cohen (1988). It should be noted, however, that care should be taken when comparing these estimates with those from other studies, as the error terms must be comparable in order to do so (Fritz, Morris, & Richler, 2012).

In order to run this statistical analysis with precision, the SPSS Statistics 24 software was used as the statistical tool to run the analysis of the data related to academic achievement scores.

CHAPTER IV

RESULTS

Office Discipline Referral Analysis

A two-sample z-test for proportions was conducted comparing the proportion of students that received an office referral for the academic years of 2012-2015. During the school year prior to program implementation, there were 729 students enrolled and 393 behavior referrals. The 2013-2014 school year was the year the SWPBS program was implemented. During that school year there were 766 students enrolled and 273 behavior referrals. The 2014-2015 school year was the second year of implementation. During this year, there were 729 students enrolled and 177 behavior referrals.

In order to determine if there was an impact from the implementation of the program, the baseline year and the implementation year were compared first. This pairwise comparison found there was a significant difference in the proportion of students that received a behavior referral from the baseline year to the implementation year, $z = 8.31, p < .05$.

The second pairwise comparison was between the implementation year and the second year of implementation. This comparison was made to determine if the change from the baseline to the implementation year stayed the same or changed again. The comparison for the implementation year and the second year of implementation found there was a significant difference in the proportion of students that received a behavior referral from one year to the next, $z = 5.38, p < .05$.

The final comparison was made between the 2012-2013 school year, the implementation year, and the 2014-2015 school year (the second year of implementation) in order to determine if there was a significant change across the three years this study reviewed. The pairwise comparison found there was a significant difference in the proportion of students that received a behavior referral from the baseline year to the second year of implementation, $z = 13.45, p < .05$.

When looking specifically at the behavior referrals for the cohort of 61 students involved in the academic achievement analysis the results were similar to the schoolwide findings. There was a decrease in referrals for the cohort the first year the program was implemented. The number of referrals then decreased again during the second year of implementation.

Table 2

Cohort Office Discipline Referrals By Gender

School Year	Males	Females	Total
2013	45	0	45
2014	30	5	35
2015	27	0	27

Academic Achievement Analysis

A RM-ANOVA is a statistical test used to compare the means of three or more groups when the participants in each group are the same. An example of when this would happen would be if a group of students is given a specific intervention and they are

measured multiple times in order to determine the effectiveness of the intervention. An ANOVA with repeated measures was chosen for the statistical analysis due to the fact that the same group of students was being analyzed across three separate time points using the same dependent variable, TCAP assessment scores.

Assumptions. Prior to running the repeated measures ANOVA, five assumptions had to be met. The first assumption was the dependent variable is continuous. In this study, the dependent variable was achievement scores which came from the state mandated TCAP assessment. This assumption was met.

Assumption number two was the independent variable consists of at least two related groups. Meaning that the same subjects were used in the groups being analyzed. When using a RM-ANOVA, the same group was being measured on more than one occasions. In this study, the same group of 61 students was analyzed in third grade, fourth grade, and fifth grade.

The third assumption was there are no significant outliers in the related groups. A significant outlier would be a score that is much higher or much lower than the average score. Using a boxplot analysis, it was determined there were no outliers in the RLA data set. In the Mathematics data set, there were two outliers during the 2015 school year, these scores were below the average. Two outliers were also found in the Science data set; one in 2013, and one in 2014. The outliers found during the analysis were not extreme outliers nor were they that far from the average. All but one of the outliers was within two standard deviations of the mean and the fourth was just outside of the

threshold of two standard deviations, which justified keeping these in the data set (Moore, McCabe, Craig, 2009).

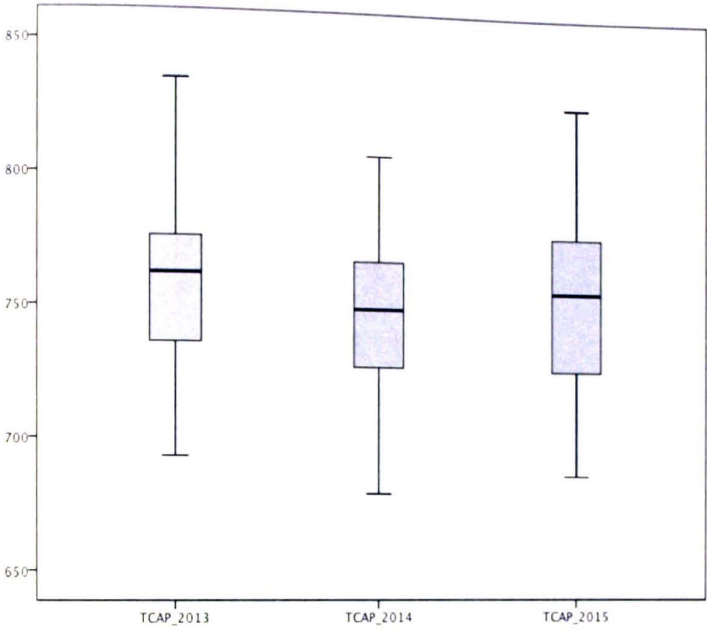


Figure 1. RLA Boxplot.

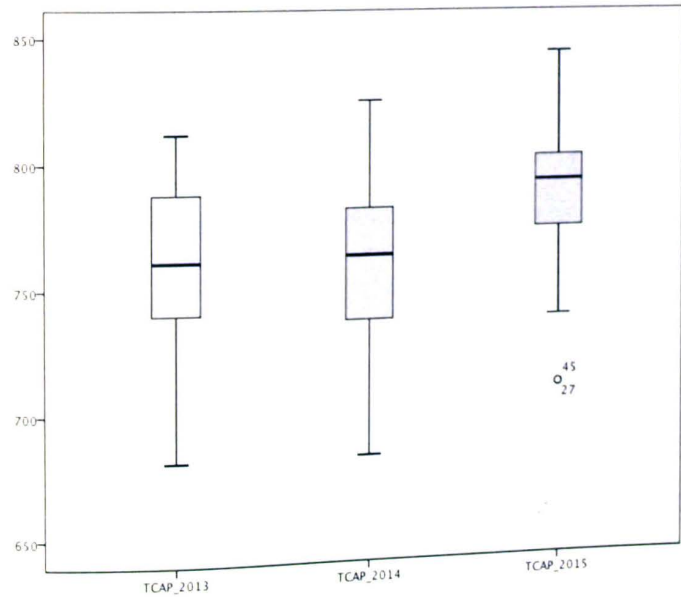


Figure 2. Mathematics Boxplot.

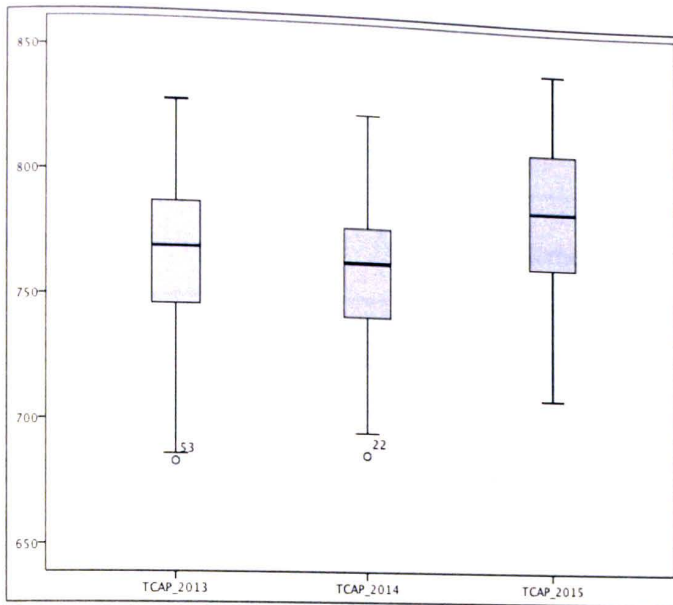


Figure 3. Science Boxplot.

The fourth assumption was that the dependent variable was approximately normally distributed for each level of the within-subjects factor. In order to determine if each set of data were normally distributed, the Shapiro-Wilk test for normality was used. It was found that TCAP assessment score concentration was normally distributed at each time point, as assessed by Shapiro-Wilk's test ($p > .05$).

Table 3
Shapiro-Wilk Results for Achievement Scores

School Year	RLA			Mathematics			Science		
	<i>SW</i>	<i>F</i> _(1,61)	<i>p</i>	<i>SW</i>	<i>F</i> _(1,61)	<i>p</i>	<i>SW</i>	<i>F</i> _(1,61)	<i>p</i>
2013	.976	61	.284	.966	61	.092	.968	61	.113
2014	.983	61	.565	.979	61	.389	.977	61	.319
2015	.982	61	.509	.966	61	.085	.971	61	.160

The final assumption was the test of sphericity, in which the variances of the differences between all combinations of levels of the within-subject factors must be equal. If this assumption is not met, it is more likely to have a Type I error, which can show a statistically significant result when one is not present. For the RLA data set, Mauchly's test of sphericity indicated that the assumption of sphericity had not been violated, $\chi^2(2) = 2.010, p = .366$. The Mauchly's test of sphericity indicated that the assumption of sphericity had not been violated, $\chi^2(2) = .018, p = .991$, for the Mathematics data set. Finally, for the Science data set, Mauchly's test of sphericity indicated that the assumption of sphericity had been violated, $\chi^2(2) = 8.082, p = .018$.

Due to sphericity being violated on the Science data set, a correction was needed in order to proceed with the data analysis. Adjustments were made to the degrees of freedom and error effect in order to continue with the analysis for the Science data. The

Greenhouse-Geisser correction was used since the assumption of sphericity was not met in order to determine if the study results are statistically significant.

RM-ANOVA Results

A RM-ANOVA was used to analyze the relationship between the implementation of the SWPBS program and academic achievement scores over time. The independent variable in this study was time, while the dependent variable was TCAP assessment scores. Student achievement scores were evaluated at three different time points and were analyzed to see if there was a change in achievement after the implementation of the program. The first time point was the baseline year, the second time point was the year the program was implemented, and the third time point was a follow up year. The scores for three different subjects, RLA, Mathematics, and Science were all analyzed using the same procedures.

Descriptive Statistics. For the academic area of RLA, it was found that academic achievement scores decreased from baseline to the implementation year, then increased in the second implementation year. However, the increase during the third year was still less than the average initial score prior to the SWPBS program being implemented.

For the academic area of Mathematics, it was found that academic achievement scores decreased from baseline to the implementation year, then increased the second year of implementation. The increase in the average score in Mathematics the third year was greater than the baseline year average score.

For the final academic area analyzed, Science, it was found that academic achievement scores decreased from baseline to the implementation year, then increased

the second year of implementation. Science was similar to Mathematics in that, during the second year of implementation, the average score increased from the implementation year, and the increase was higher than the baseline year.

Table 4

Descriptive Statistics for Academic Achievement Scores

Subject	School Year	<i>M</i>	<i>SD</i>	<i>n</i>
RLA	2013	756	30	61
	2014	747	28	61
	2015	755	32	61
Mathematics	2013	763	32	61
	2014	759	29	61
	2015	787	28	61
Science	2013	767	37	61
	2014	760	31	61
	2015	782	30	61

Tests of Within-Subjects Effects. There was a statistically significant difference in RLA TCAP assessment scores at the different time points during the three-year period examined, $F(2,120) = 5.809, p < .05$, partial $\eta_p^2 = .088$. The effect size calculated for the RLA assessment scores indicated a large effect size meaning the change in scores over

the three-year period could be considered substantial. For RLA, it is a substantial drop in scores.

In the subject of Mathematics, the TCAP assessment scores were statistically significantly different at the different time points during the three year period examined, $F(2,120) = 40.335, p < .05$, partial $\eta_p^2 = .402$. The effect size for the area of Mathematics was a large effect size, which indicated a substantial increase in scores over the three-year period.

For the academic area of Science, since the assumption of sphericity was violated, the Greenhouse-Geisser row of the Tests of Within-Subjects Effects table was used to determine significance, because the results of this row have taken into account the adjustments that needed to be made due to the assumption of sphericity not being met. The results indicated the intervention elicited statistically significant changes in academic achievement concentration over time, $F(1.773,106.381) = 22.824, p < .05$, partial $\eta_p^2 = .276$. The effect size for the Science over the three-year period examined in this study was also found to have a large effect size, which indicated a substantial change in assessment scores. This change for science was an increase in TCAP assessment scores.

Table 5

RM-ANOVA Results for Academic Achievement Scores

RM-ANOVA						
Subject	Source	MS	df	$F_{(2,120)}$	p	η_p^2
RLA	SA	1316.98	2	5.809	.004	.088
Mathematics	SA	13767.743	2	40.335	.000	.402
Science	GG	8640.728	1.773	22.824	.000	.276

Note. SA- Sphericity Assumed, GG- Greenhouse-Geisser

Pairwise Comparisons

In order to determine if there were statistically significant changes between specific pairs of data, the pairwise comparisons were examined for each of the three subject areas.

RLA. When looking at the academic area of RLA it was found that there was a decrease in academic achievement scores from baseline ($M = 756, SD = 30$) to the first year of implementation ($M = 747, SD = 28$), a statistically significant mean decrease of 9, 95% CI [2.550, 14.695], $p = .003$.

The next pair comparison was between the implementation year and the second year of implementation. It was found there was an increase in academic achievement scores from the first year of implementation ($M = 747, SD = 28$) to the second year of

implementation ($M = 755$, $SD = 32$), a statistically significant mean increase of -7 , 95% CI $[-14.275, -2.550]$, $p = .003$.

The final pairwise comparison for the academic area of RLA was between the baseline year and the second year of implementation. It was found there was a decrease in academic achievement scores from the baseline year ($M = 756$, $SD = 30$) to the second year of implementation ($M = 755$, $SD = 32$), a statistically significant mean decrease of 1.311 , 95% CI $[-5.752, 8.375]$, which was not statistically significant, $p = 1$.

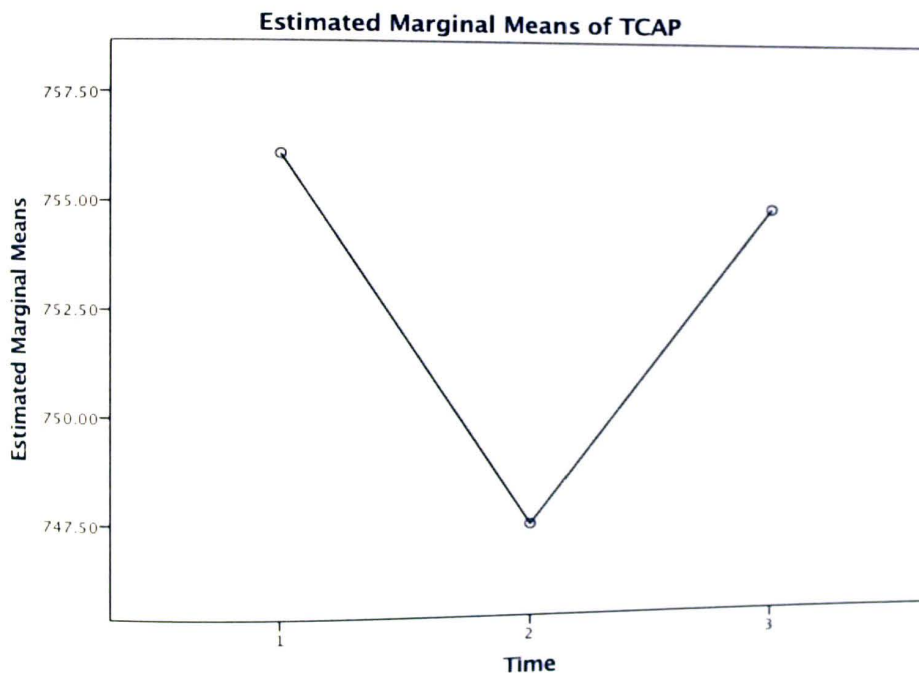


Figure 4. RLA Profile Plot.

Mathematics. The first pairwise comparison made for the academic area of Mathematics was the baseline year and the year of implementation. It was found that there was a decrease in academic achievement scores from baseline ($M = 763$, $SD = 32$)

to the first year of implementation ($M = 759, SD = 29$), a statistically significant mean decrease of 3.656, 95% CI [-4.616, 11.927], which was not statistically significant, $p = 0.842$.

The next pairwise comparison for the academic area of Mathematics was between the implementation year and the second year of implementation. It was found there was an increase in academic achievement scores from the first year of implementation ($M = 759, SD = 29$) to the second year of implementation ($M = 787, SD = 28$), a statistically significant mean increase of -27.656, 95% CI [-35.824, -19.488, $p = .000$.

The final comparison for the academic area of Mathematics was between the baseline year and the second year of implementation. It was found there was an increase in academic achievement scores from the baseline year ($M = 763, SD = 32$) to the second year of implementation ($M = 787, SD = 28$), a statistically significant mean increase of -24, 95% CI [-32.278 -15.722], $p = .000$.

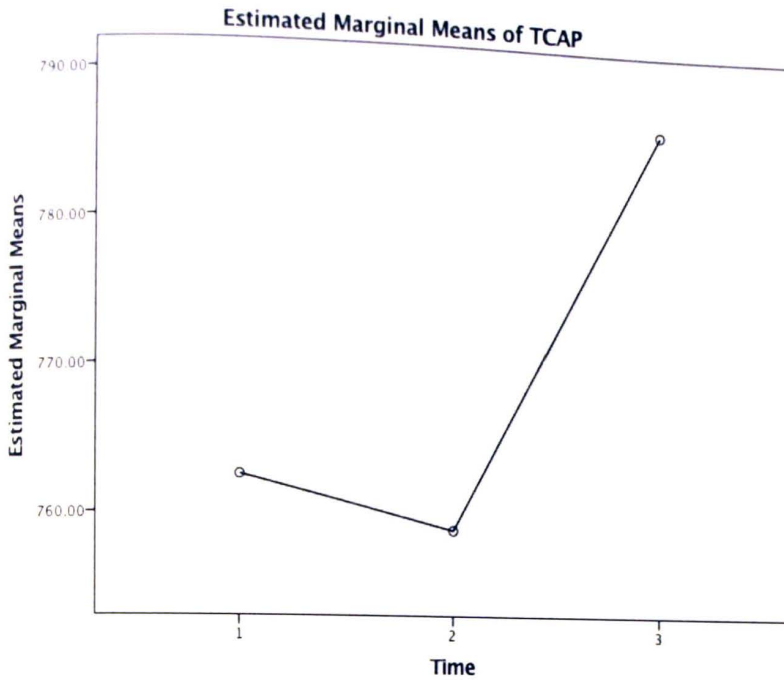


Figure 5. Mathematics Profile Plot.

Science. The first pairwise comparison made for the academic area of Science was the baseline year and the year of implementation. It was found that there was a decrease in academic achievement scores from baseline ($M = 767$, $SD = 37$) to the first year of implementation ($M = 760$, $SD = 31$), a statistically significant mean decrease of 7.295, 95% CI [0.060, 14.530], $p = .047$.

The second pairwise comparison for the academic area of Science was between the implementation year and the second year of implementation. It was found there was an increase in academic achievement scores from the first year of implementation ($M = 760$, $SD = 31$) to the second year of implementation ($M = 782$, $SD = 30$), a statistically significant mean increase of -22, 95% CI [-29.580, -14.420], $p = .000$.

The final pairwise comparison for the academic area of Science was between the baseline year and the second year of implementation. It was found there was an increase

in academic achievement scores from the baseline year ($M = 767$, $SD = 37$) to the second year of implementation ($M = 782$, $SD = 30$), a statistically significant mean increase of -14.705, 95% CI [-24.215, -5.194], $p = .001$.

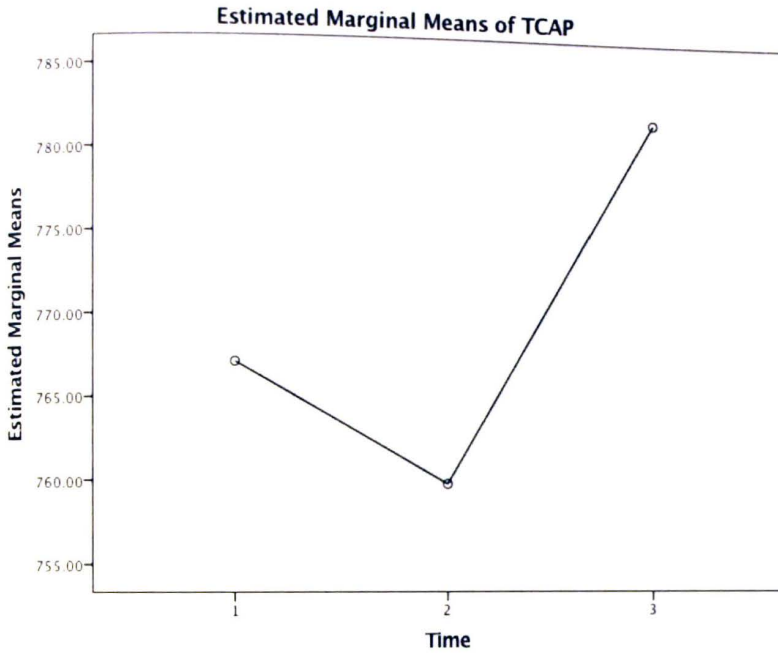


Figure 6. Science Profile Plot.

From these data, it was determined there was a change in academic achievement scores from the baseline year to the first year of implementation of the SWPBS program, however that change was a decrease in scores. That decrease was significant for each academic area except Mathematics. Each academic area also showed a statistically significant increase in academic scores from the first year of implementation to the second year of implementation. Overall, the RLA scores did not show a statistically significant increase from the baseline year to the second year of implementation, however Mathematics and Science did show a statistically significant increase in achievement scores from the baseline year to the second year of implementation.

CHAPTER V

DISCUSSION

Office Discipline Referrals

The previous research related to the benefits of using SWPBS programs to reduce and prevent negative behavior in elementary schools had shown positive results. The studies indicated, in most instances, a reduction in the number of ODRs a school would receive over an academic school year. This in turn, in many cases also increased the amount of time students were on task and actively engaged in the learning process.

The results of this study had similar findings related to the amount of ODRs the elementary school received after the implementation of their SWPBS program. The results indicated there was a positive impact made by the program on the number of referrals received each year. The baseline year had 393 referrals, the implementation year had 273, and the second year of implementation had 177 referrals. The analysis results indicated when these years were compared there was a statistically significant change between the years compared for each of the three comparisons. The years compared were the baseline year to the implementation year, the implementation year to the second year of implementation, and finally the baseline year to the second year of implementation.

Each statistical comparison found there was a significant difference between the proportion of students who received an office discipline referral each year. That change was a decrease in the number of referrals, therefore, the null hypothesis that the SWPBS program would not reduce the number of behavior referrals a school receives each year, can be rejected. The schools SWPBS program was found to be an effective means at

reducing negative behaviors and the amount of office discipline referrals the school received each year.

Academic Achievement

Previous research on the impact of SWPBS programs on academic achievement scores had shown mixed results. In some instances, a positive change was found, while in others there was no statistically significant change. The current study reviewed the TCAP assessment data for three consecutive years, in three different academic areas in order to determine if they were impacted by the implementation of a schoolwide positive behavior support program. The first year of data was from the year prior to the SWPBS program being implemented, the second year of data was the implementation year, and the third year was the second year of implementation. When analyzing the data, the overall change from year one to three was tested, as well as the changes from year one to two, and year two to three.

RLA Achievement Results. The results of the repeated measures ANOVA indicated there was a not statistically significant change in TCAP RLA scores for the cohort of students over the three-year period. The change over the three-year period was actually a negative change. The average RLA TCAP score for the 2012-2013 school year was 756. The average RLA TCAP score for the 2014-2015 school year was 755.

Pair-wise comparisons were also made between the baseline year and the implementation year, as well as the implementation year and year two of implementation. When comparing the 2012-2013 school year to the 2013-2014 school year, a statistically significant change was found. This change was, however, a negative change. The average

RLA score decreased from 756 to 747. When comparing the 2013-2014 school year to the 2014-2015 school year a statistically significant change was found as well. This change was a positive increase. The average scores increased from 747 to 755.

During the 2013-2014 school year, there was a shift in the states academic state standards. The new CCSS went into full implementation in the areas of English Language Arts (ELA) and Mathematics. These new rigorous standards were not what was being taught in all grade levels statewide. With the implementation of these standards, some students were caught in a gap of learning the old state standards, and now changing to the new. Many of the new CCSS are a continuation of what students learn in previous grades. Students in the higher grades when this implementation took place, did not have the background knowledge that students in lower grades would be taught in order to be successful as they progress through the grade levels with these CCSS (Tennessee Education Association, 2017).

Another initiative introduced in the state of TN was the Response to Instruction and Intervention (RTI²) program, which was implemented in elementary schools statewide during the 2014-2015 school year (Tennessee Department of Education, 2017b). According to the Tennessee Department of Education (2017a) “RTI², is a teaching system that uses a data to identify students' specific needs and match those needs with appropriate instructional strategies” (para. 1).

RTI² is comprised of three tiers, Tier 1, which is the universal tier in which all students receive high quality research-based instruction. Tier 2 is made up of students identified using a universal screening method. These students are identified and placed

into a small group based upon the deficit indicated using the universal screening tool. Tier 3 includes students that need the most intensive interventions. These students are at least 1.5 grade levels behind their peers, have been found to not be making progress with tier 2 interventions, or fall below the 10th percentile on the universal screening tool in a certain skill. Both Tier 2 and Tier 3 students are progress monitored on a weekly basis in order to monitor and determine student growth. All students are given the universal screening assessment three times a year in order to identify possible candidates for Tier 2 and Tier 3 instruction, as well as determine those in the tiers that may need to be exited (Tennessee Department of Education, 2017a).

With the implementation of this program, students that may not have otherwise interventions were now receiving small group instruction in their identified areas need. This could help explain the increase in achievement scores from the SWPBS implementation year to the second year of implementation.

Mathematics Achievement Results. For the three-year period examined, the repeated measures ANOVA indicated there was a statistically significant change in Mathematics TCAP scores over the three-year period. The change was a change for the positive. The average Mathematics score for the 2012-2013 school year was 763 and the average Mathematics score increased to 787 during the 2014-2015 school year, which was the second year of implementation.

The pair-wise comparison between the baseline year, 2012-2013, and the year of implementation, 2013-2014, found there was a decrease in the average Mathematics TCAP score, however, that decrease was not statistically significant. The average score

decreased from 763 to 759. When comparing the implementation year, 2013-2014, to the second year of implementation, 2014-2015, a statistically significant positive change was found in the average TCAP assessment score. The average score increased from 759 to 787.

The academic area of Mathematics also saw a change in the standards being taught during the 2013-2014, with the implementation of the CCSS. The same gap in the standards discussed for RLA could also be a contributing factor in the drop in achievement scores between the baseline year and the implementation year (Tennessee Education Association, 2017).

Due to the fact that RTI² interventions are used to meet student's needs in not only RLA but also Mathematics, the increase in Mathematics achievement scores could have also been impacted by the implementation of the RTI² program statewide during the 2014-2015 school year.

Science Achievement Results. The repeated measures ANOVA indicated there was a statistically significant increase in the Science TCAP assessment scores over the three-year period examined in this study. The average Science score increased over the three-year period from 767 during the baseline year of 2012-2013 to 782 during the second year of implementation in 2014-2015.

Using the pair-wise comparison for the Science scores, it was determined there was a statistically significant decrease in the average Science score from the baseline year to the first year of implementation. The average score for the year of 2012-2013 was 767 that decreased to 760 during the 2013-2014 school year. The pairwise comparison for the

year of implementation, 2013-2014, and the second year of implementation, 2014-2015, also found a statistically significant change in TCAP assessment scores. This change was a positive change with the average score increasing from 760 to 782.

According to the statistical analysis, there was a statistically significant difference between means and, therefore, the null hypothesis can be rejected. After the implementation of the schools SWPBS program there was an increase in academic achievement scores.

While the new set of CCSS were implemented during the 2013-2014 school year for ELA and Mathematics, there was no change in the state standards for Science. While the shift in standards could have been a contributing factor in the drop in achievement scores for those academic areas, it is not a viable explanation for Science, as the standards did not change (Tennessee Education Association, 2017).

While Science was not an academic area students received interventions in using the RTI² program, their scores could still have been impacted due to the fact that so much of how students learn other subject areas is through reading, students receiving RLA interventions may have had their Science scores impacted because of the RTI² interventions.

Implications

Office Discipline Referrals. The data related to the amount of students that received an office discipline referral each year indicated a very clear decrease in the amount of referrals each year. The implications of this could be great. Ultimately, research has indicated that SWPBS programs improve the overall learning environment

in schools by increasing the amount of time students are in school, engaged in instruction, as well as increases the level of academic engagement of the students during said instructional time. “For students exhibiting problem behaviors, reducing discipline problems increases exposure to classroom instruction and in turn facilitates academic skill acquisition” (Gage et al., 2015, p. 199).

This was a fact demonstrated in this study, due to the findings that the proportion of students that received an ODR each year decreased significantly. Ultimately at the end of the three-year period, the Mathematics and Science achievement scores had shown a statistically significant increase from the year prior to the SWPBS program being implemented at the elementary school. If SWPBS programs can be effective in this school, at not only decreasing negative behaviors, but also increasing achievement scores, could they then also be effective in other elementary school grades? The study would seem to indicate this could be the case.

Bradshaw et al. (2008) also conducted a three-year study examining the effects of implementing a SWPBS program on behavior outcomes. Those researchers stated that while their study found improvements during their three-year implementation period, it can really take up to five years to determine if the SWPBS program is sustainable and an effective long term solution for decreasing negative behaviors, and improving student outcomes.

Academic Achievement. The RM-ANOVA found there was a statistically significant difference between academic achievement scores for the areas of Mathematics and Science from the baseline year and the second year of implementation. The data

indicated the change was for the better. The student's scores indicated an overall increase in those two subjects by the end of the third year. After the first year of implementation, there was a decrease in academic achievement scores in each academic area, however, after the second year two of the three areas had shown an increase that was even more than the beginning baseline score. If this trend were to continue after each year, achievement scores could continue the upward trend, which would be a positive for all students and teachers.

Due to other statewide initiatives happening at the same time as this schools' SWPBS program implementation, it can not be definitively said the increases in achievement that were found were strictly the result of the SWPBS program. Gage et al. (2015) found the same thing with the research they conducted. The researchers indicated, "the results of this study suggest that universal SWPBS, alone may not affect school-level academic achievement" (p. 207). They went on to further explain that when SWPBS programs were paired with evidence-based intervention practices, it was more likely to find increases in academic achievement.

This study is a prime example of that happening. Achievement scores for the school examined in this study dropped after the first year on implementation when no other universal intervention program was being used, however during the second year of implementation of the school's SWPBS program a new statewide academic intervention program was implemented and during this school year achievement scores increased. The increase in Mathematics and Science was even greater than the initial baseline year scores.

Future Research

Office Discipline Referrals. Bradshaw et al. (2008) explain that SWPBS programs are a universal prevention strategy that aims to change the school environment by creating improved systems and procedures that promote a positive change in not only students but staff as well. The results of this study indicated a significant decrease in the amount of office behavior referrals each year after the baseline year of 2012-2013, indicating that there was a positive change in student behavior during the two years after the implementation of the SWPBS program.

The results of this study indicated that the implementation of the SWPBS program for this school directly impacted their ODR referrals within the first year of implementation. Since this study only looked at two years of discipline referrals after the implementation of the SWPBS program, future research should be conducted to determine if the SWPBS program is a viable long-term solution to reduce negative behaviors over several years.

Future research could also delve into the implementation of the schools SWPBS program and the fidelity with which it is used from year to year. Research could compare the implementation process of schools with successful programs to schools with programs that did not seem to be as successful to determine if there is a certain set of implementation procedures that were used among schools that have been found to have a successful SPWBS program.

The fidelity of which a program and its procedures are used throughout the school year and from one year to the next could be examined in order to determine if the

consistency with which the program is used could also play a role in how successful a schools program is found to be. Part of this research could include teacher attitude surveys that could gauge the way teachers feel about the program and if teacher attitudes play a role in the fidelity and effectiveness of the schools program.

The fidelity with which the schools program is followed each year is something that could also be examined. If changes in staff occur and expectations are not maintained with the program, its sustainability could be put in jeopardy and ultimately its effectiveness at preventing ODRs could decrease. This is another area of follow up that could be researched. The amount of ODRs the school receives each year for the first five years the program is used could be a good indicator of whether the SWPBS program is a viable long-term option for reducing negative behaviors, or if it is simply a quick fix that does not last.

Finally, another way to extend the research related to the effectiveness with which SWPBS programs reduce negative behavior could be related to the expansion of the program from a one-tier intervention to a multi-tiered intervention program. McIntosh et al. (2014) explain positive behavior support programs were developed to be multi-tiered intervention programs. The first level of intervention being the universal or schoolwide tier, which is the most common program used in schools adopting SWPBS programs. The next level of intervention is the secondary, or targeted Tier 2 intervention level students that do not respond to the primary intervention level are identified in order to provide them with a more specialized intervention on the secondary level. The final tier is the tertiary or intensive tier. Tier 3 provides the most intensive level of support and is used

for students that do not respond to either the primary or secondary levels of support. In this tier, the students receive intensive individualized behavior intervention plans (Martens & Andreen, 2013; McIntosh et al., 2014). Further research could examine the effectiveness of schools using multi-tiered behavior intervention programs compared to the effectiveness of a school simply using one or two of the tiers for intervention.

Academic Achievement. While this study did indicate there was an overall increase in student achievement across the three years in Mathematics and Science for the particular cohort of students looked at, future research is still warranted. The first question left unanswered is why after the initial year of implementation did the achievement scores in all three academic areas decrease.

Since SWPBS programs were developed specifically to reduce negative behaviors, and a indirect result of these programs may be the increase in achievement scores, could it take more time for the increase in achievement to happen?

Other questions left unanswered include; did the implementation of the SWPBS program at this particular school play a role in the decrease of the student's academic scores or were there other factors involved? Did the change in state standards and the difficulty level of these new standards contribute to the decrease? Did the implementation of the RTI² program play a role in the subsequent increase seen the third year examined in the study?

Research into the relationship between the implementation of both the SWPBS program and the schools RTI² program could be examined as well. Future research possible into how universal screening scores were impacted with the introduction of an

SWPBS program could help determine if a schools SWPBS program played a role in changing student achievement. This could address two areas of need for future research.

First, it could be determined if the implementation a schools SWPBS program impacted achievement by comparing students universal screening scores from one year to the next. Second, because all students take the universal screening measure it could be determined if the change in achievement was a school-wide change instead of simple looking at one particular group of students. Gage et al. (2015) stated, “research should examine whether academic interventions with and without SWPBS have differential effects on school-level academic achievement and vice versa” (p. 207).

Future research could also be conducted on a schoolwide basis in schools that are thinking about implementing a SPWBS program of some type. Research could be conducted in which the school compares their achievement scores to a similar school without an SWPBS program to determine if the treatment school has achievement scores that are higher than others. In this scenario, schools would have to be as similar as possible in the make up of their schools as well as the curriculum they teach and the standardized testing they are using to measure achievement.

Much like this study, a school could also compare the achievement scores of their students across time and include more than just one grade level each year to determine if the positive results are truly schoolwide. In this study the results were positive, however, as far as achievement is concerned, it cannot be determined if these results could be generalized to the whole school since only one particular group of students were examined.

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APPENDICES

APPENDIX A

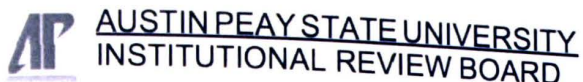
Austin Peay State University

Institutional Review Board

Letter of Approval

To

Conduct Study



Date: 3/7/2017

RE 17:015 The Effects of School Wide Positive Behavior Support Programs on Student Achievement

Dear Ms. Funderburk and Dr. McConnell,

We appreciate your cooperation with the human research review process. This letter is to inform you that the amendment to study 17-015 has been reviewed on an expedited level. It is my pleasure to inform you that your study amendment has been approved.

This approval is subject to APSU Policies and Procedures governing human subject research. The IRB reserves the right to withdraw approval if unresolved issues are raised during the review period. Any changes or deviations from the approved protocol must be submitted in writing to the IRB for further review and approval before continuing.

The approval remains for one calendar year from the original approval date and a closed study report or request for continuing review is required on or before the expiration date. If you have any questions or require further information, you can contact me by phone (931-221-7506) or email (butterfieldj@apsu.edu).

Sincerely,

A handwritten signature in black ink, appearing to be 'JB' with a stylized flourish extending to the right.

Jonniann Butterfield, Ph. D. Chair, APIRB

APPENDIX B

Clarksville Montgomery County Schools

Letter of Approval

To

Conduct Study



From: Dr. Kimi Sucharski
CMCSS Accountability
612 Gracey Ave
Clarksville, TN 37040

September 27, 2016

To: Rachel Funderburk

Subject: Request to Conduct Research in CMCSS

The Clarksville Montgomery County School System Research Committee has met and approved your request to conduct research in the District at KES exploring School-wide Positive Behavior Support Program and the relationship to achievement. This includes approval to collect student achievement data.

Sincerely,

Dr. Kimi Sucharski
CMCSS Accountability and Assessment
Kimi.sucharski@cmcss.net
(931) 920-7813 office