

A Study of the Longitudinal Influence of a Behavioral Support Program

Lisa Pluska

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in
partial fulfillment of the requirements for the degree of

Doctor of Education

In

Educational Leadership and Policy Studies

Glen Earthman, Chair

John Gratto

Lewis Romano

James Sellers

February 19, 2014

Blacksburg, Virginia

Keywords: school-wide discipline, effects, behavior, attendance, positive behavior supports

A Study of the Longitudinal Influence of a Behavioral Support Program

Lisa Pluska

ABSTRACT

Students need to be engaged in learning in order to have a successful school career. If attendance and discipline become an issue, instruction tends to be relegated to lesser importance. In order for students to be a contributor to society, education is important. As schools are held more accountable, the results of this study could encourage better practices to hold students more accountable.

The Students Taking Appropriate Responsibility (STAR) Program was implemented in 2004 in one school in a school division in southwestern Virginia to address problems in student behavior. The other three elementary schools did not implement this program. The program is a four year series of sequential activities designed to provide positive behavior supports to all students.

This program uses tenets of positive behavioral supports and effective school wide discipline programs. The first students who enrolled in 2004 had four years of instruction in the program and graduated from high school in 2013. Therefore, a study was undertaken to compare the behavior of the students in the treatment school with students in a control population.

The purpose of this study was to track data at a student level and compare one treated population with a random sample from three control populations who attended the same high school. All schools were located in a rural county in Virginia with similar demographics. The main research question was whether high school students who had received instruction in a program for four years show more self-regulation on selected measures of student behavior than

students who had not received such instruction. The variables used were attendance, discipline incidents, and drop-out status.

Research on positive behavior supports demonstrated the effectiveness in the short term. However, there were no longitudinal studies found that tracked positive behavior support programs by student. The expectation of this study was that students would take the information learned from the program and continue to use the knowledge to make better choices about school. Students should have been more willing to attend school, avoid behaviors that result in discipline referrals, and stay in school until graduation.

Using independent samples t-tests, data were analyzed using the entire treatment population and a randomly selected control population. The results of the study showed a significant difference in attendance for twelfth graders. Those students that had been instructed in the STAR program missed significantly fewer days than those students that had not been instructed. Overall, the ninth and eleventh graders in the treatment population had fewer missed days and ninth graders had fewer disciplinary incidents. Tenth grade students did not show the expected results, nor did any of the drop-out status statistics. All results other than twelfth grade were not significant.

Overall, the program could be useful for helping with attendance in future grades. More research would be needed before this study could be generalized. Other possible research venues would be to increase the grade levels or the variables studied.

Acknowledgment

I would like to thank several people that made this journey possible to complete. To Dr. Glen Earthman, my chair and advisor, thank you for your patience, guidance, and even for calling me out in front of my classmates on numerous occasions. Without your help this dissertation would not have been possible. To Dr. James Sellers, committee member and professor, you have been such an encouragement to a fellow “4”. Thank you for inspiring me to be better and pushing me further. To Dr. Lewis Romano, committee member and professor, thank you for your knowledge and willingness to share your expertise. I also appreciate all the laughter and even the edits. To Dr. John Gratto, committee member, thank you for your edits, patience, and willingness to help me make this a better document. I look forward to continuing to work with each of you in the future. I would also like to thank the other professors that have helped me within the cohort, Dr. Wayne Tripp, Dr. David Alexander, and Dr. Richard Salmon.

I would like to thank my cohort. We have had a great time, but have worked really hard. I feel blessed to have been in classes together and to have made such great friends and colleagues. To the girls that used 304 East Eggleston, I am greatly appreciative. Those days we went above and beyond made it possible for the three of us to graduate together. I would also like to thank Cindy Ryan, my co-worker, for first suggesting this topic when we were just talking about routine “school stuff”. To Floyd County Public Schools, thanks for letting me use the information and supporting me.

Dedication

I would like to dedicate this dissertation to my family. Without my husband, David, daughter, Lara, and son, Jakob, I would never have been able to complete my degree or this study. I know you are all tired of me writing and doing homework, but hopefully, more family time will be forthcoming. Without your help, I would not have been able to finish on time, especially to David for last minute help always. To my mom and dad, thank you for babysitting and supporting me in this venture. To my sisters Amy and Sara, first of all thanks for the last minute editing. Amy, thanks for being proud of me and asking me often how it was going. Sara, thanks for reminding me to continue writing and celebrating each milestone. Derrick, Jasper, and new baby, I could not write this without mentioning your names. You have reminded me of the joys of life and make me laugh on a regular basis. My family has been my support for many years and I am blessed to have you in my life. To my co-workers and friends, thanks for all your support and the kindness you have shown to me. Without the support of family and friends, this journey would never have been possible.

Table of Contents

ABSTRACT.....	ii
Acknowledgment	iv
Dedication	v
Table of Contents	vi
List of Tables	viii
Chapter 1	1
Introduction.....	1
Description of the STAR Program.....	3
Statement of the Problem.....	4
Research Questions.....	5
Significance.....	6
Limitations	7
Delimitations.....	8
Definitions of Key Terms	8
Chapter 2.....	10
Literature Review.....	10
Introduction.....	10
Analysis of Relevant Literature	11
Summary of Literature Review.....	42
Evaluation Approaches	42
Chapter 3.....	46
Methodology.....	46
Introduction.....	46
Population	46
Consent	50
Data Needed.....	51
Data Analysis	52
Chapter 4.....	54
Findings	54
Introduction.....	54
Data Analysis	54
Summary	71

Chapter 5.....	73
Discussion, Conclusion, and Recommendation for Future Studies	73
Introduction.....	73
Summary of Major Findings.....	73
Conclusion	75
Discussion.....	76
Recommendations for Further Study	80
References.....	82
Appendix A.....	85
Appendix B.....	87

List of Tables

Table 1 <i>Number of Eligible Students</i>	49
Table 2 <i>Ninth Grade Attendance Statistics</i>	55
Table 3 <i>Tenth Grade Attendance Statistics</i>	56
Table 4 <i>Eleventh Grade Attendance Statistics</i>	56
Table 5 <i>Twelfth Grade Attendance Statistics</i>	56
Table 6 <i>Ninth Grade Attendance Independent Samples Test</i>	57
Table 7 <i>Tenth Grade Attendance Independent Samples Test</i>	58
Table 8 <i>Eleventh Grade Attendance Independent Samples Test</i>	58
Table 9 <i>Twelfth Grade Attendance Independent Samples Test</i>	59
Table 10 <i>Ninth Grade Discipline Statistics</i>	60
Table 11 <i>Tenth Grade Discipline Statistics</i>	60
Table 12 <i>Eleventh Grade Discipline Statistics</i>	60
Table 13 <i>Twelfth Grade Discipline Statistics</i>	60
Table 14 <i>Ninth Grade Discipline Independent Samples Test</i>	61
Table 15 <i>Tenth Grade Discipline Independent Samples Test</i>	62
Table 16 <i>Eleventh Grade Discipline Independent Samples Test</i>	62
Table 17 <i>Twelfth Grade Discipline Independent Samples Test</i>	63
Table 18 <i>Twelfth Grade Drop-Out Statistics</i>	64
Table 19 <i>Twelfth Grade Drop-Out Independent Samples Test</i>	64
Table 20 <i>Large Ninth Grade Statistics</i>	65
Table 21 <i>Large Ninth Grade Independent Samples Test</i>	66
Table 22 <i>Large Tenth Grade Statistics</i>	67

Table 23 *Large Tenth Grade Independent Samples Test*..... 68
Table 24 *Large Eleventh Grade Statistics* 69
Table 25 *Large Eleventh Grade Independent Samples Test*..... 70

Chapter 1

Introduction

Many school divisions implement school-wide discipline programs to create an atmosphere conducive to learning. An effective school-wide discipline program uses positive behavioral interventions and supports to teach and reward the correct behaviors. Schools form teams that determine what the problem behaviors are and how to positively counteract those behaviors. The theory is based on the whole school working together to change problem behaviors while rewarding positive behaviors.

Traditionally, negative behaviors resulted in negative consequences. In order to effectively manage student behavior, the root of the problem must be extinguished, not just the symptoms treated. Too often school personnel and administrators react to the behavior at hand rather than proactively treating the root causes of the problem. School suspensions tend to be the consequence for a serious infraction or multiple minor infractions and are the most commonly used disciplinary sanction in schools (Christle, Nelson, & Jolivette, 2004, p. 509).

According to Skiba (2000), little evidence exists to support the effectiveness of suspension for improving student behavior (p. 13). Suspension removes the student from the school environment, but at some cost to that student. Schools have to be serious in deterring negative behavior, but with the majority of schools and administrators consistently using reactive approaches rather than proactive, the problem does not seem to be diminishing (Skiba, 2000, p. 15-16). Rather than treating the source of the behavior, schools seem to be treating the symptoms.

Students need to be engaged in learning and feel as if they are important to the community of learners. If a student is not properly engaged in learning, the student often times engages in disruptive behavior. If a student is not able to behave appropriately, educators have the responsibility of teaching what is appropriate in order to create a more effective learning environment. If a student is habitually absent and has a large number of discipline incidents, chances are fairly good that the student will eventually become a drop-out. Drop-outs can be an added drain on an already taxed economy. Without the skills necessary to persevere or learn a skill, a person would have difficulty obtaining and keeping a job. In instances of consistent unemployment, people will either turn to a life of crime or use governmental assistance programs designed to help those without the ability to help themselves. Either option would be funded by taxpayers.

With students learning how to regulate their behavior and attendance, it stands to reason that a fairly successful school experience could occur. If a student was taught in the earlier grades proper behaviors for success, then it is logical to assume that the knowledge should carry over into the upper grades. This study will compare the variables of disciplinary incidents, attendance, and drop-out rates with a control group to determine the efficacy of the Students Taking Appropriate Responsibility (STAR) program currently being used in one elementary school. One of the four pre-kindergarten through seventh grade schools in the county uses the STAR program to effectively teach and reward acceptable school behavior. The other schools do not have a positive behavioral system or effective school-wide discipline program in place. All of the students in the school division then go to one high school that serves eighth through twelfth grades. The effectiveness of the program in the elementary schools is not in question. The question lies in the long lasting effectiveness of the program years after completion.

Description of the STAR Program

The STAR Program was developed in 2004 to encourage fourth through seventh grade students to be involved in and to make positive changes concerning their own education. Based on the concept that a strong coach keeps the team focused, the STAR program helps students set goals, focus, and reap the rewards. The principal of the school that initiated the STAR program realized the discipline of the students had not been very consistent or fair and something had to be done. In working with a similar program in the past, the decision was made to incorporate the program at this school with the approval and buy-in of the staff. The faculty and staff felt a positive approach was more beneficial for students.

The STAR program rewarded students for successful school behaviors by allowing them to choose an activity for the last twenty minutes of the school day if all criteria are met. Students should have completed all homework, should be ready for each class, and not have any behavioral issues for the day. If a student has not completed the requirements for the Student Activity Choice (SAC) time, then the student would go to a required study hall time to complete assignments, receive remediation, or work on homework. The teachers kept track of infractions as they would occur and gather the data at the end of the day to see if students were responsible enough to report to the correct location. If the student failed to report, a teacher, teacher assistant, or another student found the offending student who then had to report to study hall again the following day.

Every six weeks, the Parent Teacher Organization (PTO) funded a field trip for students who did not have to attend study hall for a certain number of times. Throughout the years, the school has changed the requirements to match each individual group's needs. The students who did not meet the requirements, stayed at the school and worked on the missed assignments or

received remediation or enrichment for class. The other three elementary schools did not have such a program.

The manifestations of the program included fewer days of school missed, fewer disciplinary incidents, and the active involvement of students as far as consequences of choices in their education. As a result of the program, students wanted to attend school and make appropriate choices. As appropriate choices were made, students were rewarded with an activity of their choice. As the students mature and change, the underlying goal of the program was to keep students coming to school and out of trouble. For high school students, this would translate to fewer days missed, fewer discipline incidents, and fewer drop-outs.

Statement of the Problem

Limited research was available on the effectiveness of a school-wide discipline system; however it has recently become an educational trend. An abundance of research was available on positive behavior supports within a school that showed the effectiveness in promoting positive behavior that is sustained within that environment. Administrators have been tasked with educating all children to the fullest, and discipline is a large detractor from instruction. Behavioral problems only detract from the time available for instruction. Knowing that poor attendance and negative behavior affect a student's ability to learn, a school-wide discipline system could only help decrease the amount of time spent on the two variables mentioned above. If teachers and administrators were not having to constantly deal with problem behavior, more attention could be focused on instruction. If a child has been consistently absent, effective instruction cannot occur. Having an evaluation of a school-wide discipline system incorporating positive behavior supports could help other educators determine the worth of investing the time needed to effectively implement said system for the entire division's benefit. Having

successfully implemented a positive behavior system program, teachers and administrators should determine if such an expenditure of time and resources result in long term positive behavior.

Research Questions

Positive behavioral interventions and supports and effective school-wide discipline programs have been linked to schools with fewer student disciplinary incidents and better self-regulation in the years the programs have been in operation. A review of available research seemed to indicate a limited supply of studies on the long-range effects of either program for students. The main question for this study was the following: Do high school students who have received instruction in the STAR program for four years show more self-regulation on selected measures of student behavior than students who have not received such instruction? This research question was then supported by three sub-questions to further guide and narrow the focus of the study.

- a. Do high school students who have received instruction in the STAR program for four years have better attendance records than students who have not received such instruction based on the results of a t-test to show significant difference?
- b. Do high school students who have received instruction in the STAR program for four years exhibit fewer disciplinary incidents than students who have not received such instruction based on the results of a t-test to show significant difference?

- c. Do fewer high school students who have received instruction in the STAR program for four years drop-out of school than students who have not received such instruction based on the results of a t-test to show significant difference?

Significance

This study examined the factors of absences, discipline referrals, and drop-out rates between students who have been instructed in an effective school-wide discipline program using positive behavioral supports and those that have not. With the data gathered from the study, administrators could begin to determine the factors that lead to success within their respective schools. As schools struggle to become more accountable with fewer resources, programs that can be developed within a school to match the specific needs while remaining feasible in cost would be more attractive and practical. This study evaluated the possible influence upon students of a school-wide discipline program. Results of the study could help a school or school division by showing one method of effectively evaluating the results of a program.

In order for schools to be more effective, the staff and students must feel safe and involved. If the staff and students feel safe and involved, then conditions for success have been created. As a school administrator, any program that would help the school to be successful might be worth the time, energy, and resources to incorporate it.

In researching this topic, studies that focused on short-term effects were in great supply. However, studies that show the long-term effects of either a school-wide discipline program or positive behavioral interventions and supports were not found. This study helped to fill the current gap and provides a basis for further research to determine the efficacy of an intervention program for the long-term.

Researchers could have a basis from which to develop further studies showing the efficacy of positive behavior supports from the enduring effects standpoint. Because all schools do not use positive behavior supports, the question of whether the program sustains long reaching effects might determine the best time to incorporate the program in the educational career if it is determined to do so.

Limitations

In this study, several limitations occurred based on showing a relationship between the students who have been treated using the STAR program and the number of absences, discipline referrals, and dropouts in later years. This study included data from the only high school located in only one county of Virginia.

The first limitation was the difference in faculty and staff within the schools. Since only one school in four used this program, results could be tied to the relationships built within that school rather than the program itself. One school in particular was notably smaller than the other schools. The size of the schools themselves, could beget better relationships between students and faculty and staff.

The second limitation was the geographic layout of the county itself. Though the demographics of each school were similar, the school zones differed. Since this study focused on the long term effects which were measured when all students were going to the same school in town, the distance from school could affect student and parental involvement. Both variables could be factors in the success or lack thereof for students. Within parental involvement, the influence of the family that would emphasize or de-emphasize the program and the importance of the tenets of the program could be a factor in the results.

The third limitation was the transience of students in particular areas. Though the data from transient students were discarded, this could cause a shift in the significance of the data. As economic concerns were exacerbated, transience became more of a factor within the study.

The fourth limitation was the amount of time away from the program itself. Students in the eighth and ninth grade could show more of an effect from the program learned in fourth through seventh grade than eleventh and twelfth graders.

The fifth limitation was the maturation of the students. As students age and realize what acceptable behavior consists of and the rewards of such behavior, changes may be made regardless of the involvement of such a program. Maturation of students is a typical limitation in studies over a long period of time that cannot be controlled for but should be mentioned as a limitation.

Delimitations

A delimitation of the study was the choice to study one specific program in one specific county. Since other programs or counties were not studied, the results cannot be generalized to other locales or programs.

Definitions of Key Terms

Discipline: For the purposes of this study, discipline refers to the punishment a student receives after an infraction occurs. Another definition of discipline used in this study is the training that occurs by teachers and administrators with students to correct or direct certain behaviors designated by the staff as objectionable. Discipline incidents will be measured by the number of referrals to the office per student.

Positive Behavior Intervention Supports, also referred to as Positive Behavior Supports:

An interactive framework designed to help support academic and behavioral decisions for success. Supports can be implemented for a large group, such as school wide, or for individuals. A team determines the problem behaviors, how to address the behaviors, and how to teach the correct behaviors. As the framework takes shape, the belief is that students will want to be in school and behave appropriately.

Self-regulation: Self-regulation refers to the process in which a person recognizes what rules need to be followed in order to succeed. For the purposes of this study, self-regulation is the students' knowledge of what tasks are needed to be undertaken in order to set the conditions that support success in school; such as attending school, not getting in trouble, and choosing to stay in school until graduation.

School wide discipline program: For the purposes of this study, a school wide discipline program is a program that the entire school follows to maintain order within the school. The faculty, staff, students, and community are part of the program to encourage positive behaviors and discourage negative behaviors.

Chapter 2

Literature Review

Introduction

Chapter two is comprised of a review of literature surrounding positive behavior supports, effective school wide discipline, and the effects of such programs. Many studies have been undertaken to show the success of positive behavior supports within the context of the school itself. Therefore, the studies show only short term effects of the program. In a review of the literature, studies showing the long range effects of such programs have not been found. This section consists of an analysis of relevant literature, the impact of effective discipline on student success, and evaluation studies.

Student success can be defined in numerous ways. For the purposes of this study, conditions that create the potential for student success will be predicated on the tenets of low absenteeism, low disciplinary referrals, and staying enrolled in school until graduation. According to Levin and Nolan (1996), studies have shown that reducing the number of referrals, suspensions, disciplinary actions, and increasing attendance can improve student outcomes. As attendance decreases and disciplinary actions increase, students are more likely to become a drop-out due to academic difficulties and peer difficulties (Elias & Tobias, 1996). As punishment increases, students may become more isolated and less likely to succeed.

More and more of the public is demanding that schools are to be held more accountable. To date, every school and school division reports on the numbers of discipline referrals and the category in which each referral falls, the attendance rates, and graduation rates. State and federal accreditation rely on certain percentages of attendance and graduation rates. Administrators and

teachers are tasked with the job of ensuring students come to school, stay in school, behave while there, and pass rigorous standards of learning assessments.

Analysis of Relevant Literature

The abundance of literature on positive behavior supports has directed a large part of this study. Literature studied encompassed single rural schools, single urban schools, multiple schools, school systems, and statewide implementation of behavior support programs. Two of the studies were longitudinal in nature, but only at the school in which the program was implemented, not following the students throughout their educational career.

Taylor-Greene et al. (1997) studied the impact of a school-wide behavioral support program based upon office referral data at a rural middle school. The program was designed to teach students appropriate behavior and reward them when the behavior occurred. Faculty and staff reviewed data to determine the problem areas and proceeded to develop a program to address the infractions most often reported. Training occurred with the behavior support team established by administration and the faculty at the University of Oregon (Taylor-Greene et al., 1997, p. 100). The behavior support team then trained the faculty and staff and together defined the curriculum and determined how to introduce the program to the students.

Students were taught the high-five expected behaviors: be respectful, be responsible, be there – be ready, follow directions, and hands and feet to self (Taylor-Greene et al., 1997, p. 103). Behaviors were identified, defined, modeled, practiced, and rewarded when students performed the target behavior. This training was accomplished in one day in stations located throughout the school. The rewards were tickets that could be exchanged for popcorn or snow cones.

After the initial training, faculty determined six key elements to include in the on-going system. The elements were reminders for students before changing settings, rewarding appropriate behaviors, consistency, corrective consequences, booster procedures, and targeted support for students with chronic behavior problems (Taylor-Greene et al., 1997, p. 104-105). The booster procedures were put in place after reviewing data that showed a spike in office referrals at certain times of the year. The faculty decided to incorporate new rewards during those times to encourage more positive behavior.

The data collected were office referrals for the year before implementation and the year of implementation. During the 1994-1995 school year, an average of fifteen referrals occurred per day with referrals showing an increase during the months preceding vacations (Taylor-Greene et al., 1997, p. 105). During the 1995-1996 school year when the program was implemented, the referrals decreased from fifteen per day to 8.7 per day which was a 42% reduction (Taylor-Greene et al., 1997, p. 108).

Another form of data collected were teacher surveys on satisfaction with the training for students. All teachers that responded to the survey were satisfied with the training and wanted to continue to implement the program the following year (Taylor-Greene et al., 1997, p. 109). The faculty felt the program was well organized and had a positive effect on students.

This study did encounter limitations. One limitation was that by not using an experimental design, causality could not be determined. Another limitation was that the findings could not be generalized to the larger context of all schools because these results were only at one school in a rural setting and the data were obtained from a different group of students in attendance than during the base year the data were obtained. However, this study did show that

further research was needed to determine more variables to be studied in different locales with different populations (Taylor-Greene et al., 1997, p. 110-111).

Tyre, Feuerborn, and Pierce (2011) researched and evaluated the effects of a schoolwide intervention to reduce student tardiness in one combination tribal middle and high school. The school that participated in the study was located in Washington. The population consisted of seventh through twelfth graders from more than 66 tribes. The school was 98% Native American with other ethnicities including Pacific Islander, Latino, African American, and Caucasian. Students receiving special education comprised 16% of the population and 100% of the students received free and reduced-price lunches (Tyre et al., 2011, p. 133).

In this particular school, chronic tardiness was a problem and taking away instructional time, according to the staff. In order to more effectively determine if the perception of the staff was correct and if so, whether patterns existed, the assistant principal began documenting tardies. Beginning in September 2006 and continuing through November 2006, an average of 60 tardies a day was documented for 355 students (Tyre et al., 2011, p. 135). The data showed the problem to be widespread and applicable to all grade levels and instructional periods (Tyre et al., 2011, p. 134). Therefore, the decision to implement a schoolwide intervention was made. The administration chose a program entitled, Safe Transitions and Reduced Tardies (START) on Time, to help guide the intervention with professional development.

START on Time was designed to target safe and timely transitions in secondary schools (Tyre et al., 2011, p. 134). The focus of the program was to have active supervision of students during transitions, clear expectations and teaching of those expectations during transitions, consistent consequences, and data-based decision making. A group of administrators and

teachers designed the implementation of the program. Data were collected, the intervention and plan for implementation was developed, and a timeline was established in September and October 2006 (Tyre et al., 2011, p. 134). The data collected were not only the number of tardies, but also the reason for the tardies. The data were obtained through informal questioning of students and staff and conducted to determine the reason behind the tardiness.

Lessons were included with START on Time and the team adapted these lessons to meet the needs of the school. Three days were used to teach the students at specific times to ensure all students received the training. All staff received training for three days, one hour each day. The last day included time to practice teaching the students. Implementation began in November and was fully implemented in December 2006 (Tyre et al., 2011, p. 134).

The implementation of the START on Time program involved heavy supervision during transitions. Teachers and administrators actively supervised their assigned areas. A team was formed for each transition time that consisted of teachers with a planning period after the transition. The teachers were assigned zones to oversee and escorted any student that was tardy to class. At that time, the student filled out a postcard to be mailed home and the tardy was recorded. Approximately ten minutes of the teacher's planning time was used for the intervention. All teachers were a part of the team at some point in the day to help garner support schoolwide. All teachers also deemed it important to not write hall passes for the first twenty minutes of class to avoid student traffic in the hallway.

The results of the study showed a large numbers of tardies for the months of September (54 per day), October (72 per day), and November (56 per day) of 2006, averaging 60 tardies per day before implementation of START on Time (Tyre et al., 2011, p. 135). After the

implementation of the program, the number of tardies started decreasing immediately. In December 2006 there were only 22 tardies per day. The number of tardies varied from 13 to 30 tardies per day from January 2007 to June 2008 with an average of 20 tardies per day during implementation (Tyre et al., 2011, p. 135). This translated to a decrease of average daily tardies by 67%. All data points were lower after implementation as compared to before implementation.

Based on the results of the study, it would appear that START on Time was an effective schoolwide intervention to help reduce tardiness. The premise of the program was to teach the expectations, actively supervise during transitions, and consistently apply consequences to promote positive behavior (Tyre et al., 2011, p. 136). The program was adapted to meet the needs of this tribal middle and high school. Changes were made in the consequences of being tardy and the addition of positive reinforcement to reward the appropriate behaviors.

Limitations did occur in the study. One was the non-experimental design of the study which would prevent any causality to be inferred without controlling variables. Another limitation was the 93% rate of implementation which could lead one to presume without 100%, the program's fidelity is jeopardized. One other aspect to determine is the amount of intense supervision in this program. The last major limitation was the lack of a tiered system. This program did not focus on repeated behaviors or targeted levels like schoolwide positive behavior support research suggests (Tyre et al., 2011, p. 137), though that could be the adaptation the school makes based on need.

This study offered a broader literature base for reducing problem behavior during transitions, especially in tribal schools. Future research is needed to control for other possible variables in an experimental design. Also, future research could be done on other aspects of

success for intervention programs such as fewer office referrals, increased academic achievement, and increased safety (Tyre et al., 2011, p. 137).

In another study, Warren et al. (2006) studied the implementation and a preliminary evaluation of positive behavior supports (PBS) in an urban middle school. This school was an inner-city school with a diverse student population and approximately 80% of the students qualified for free and reduced lunch. Researchers formed relationships and participated in school activities during the first year of the study to build rapport (Warren et al., 2006, p. 191). Half way through the year, two training sessions were held on the fundamentals of PBS, functional behavior assessments (FBA), and the comparison of how the staff viewed discipline as well as how PBS could help the process. By the end of the first year, a short list of expectations for positive behavior began to be developed (Warren et al., 2006, p. 191). A two day training then occurred for the self-selected group that became the team responsible for helping train the other staff. Part of this training allowed teachers and administrators to provide lesson plans to teach the behavioral expectations to the students (Warren et al., 2006, p. 191). The training then concluded with a school-wide training for all employees.

When school began during the second year of the study, teachers modeled and taught the behavioral expectations and allowed students to practice both the correct and incorrect behaviors. Tickets were given to students who demonstrated the correct behavioral expectations. The tickets could then be turned in to be added to a drawing for a special prize – stuffed animals, school supplies, or extra gym time. Students who won prizes were recognized with a picture and name in the trophy case (Warren et al., 2006, p. 192).

In this particular school, specialized training was offered to teachers and administrators for students who needed extra support. This allowed the teachers to gain more knowledge of the motivators of students and how to deter poor behaviors while encouraging positive behaviors. Researchers also trained school personnel on how to continue training new employees, form partnerships with community agencies, and how to use data to formulate the adjustments necessary in their PBS program (Warren et al., 2006, p. 192).

After implementing PBS for a year, the researchers studied the differences between the first year without PBS and the second year with PBS. Disciplinary outcomes, which included office referrals, in-school conferences, time-outs, in-school suspensions, short-term suspensions, and out-of-school placements, were compared between Year 1 and Year 2 (Warren et al., 2006, p. 193). All of the categories showed a decrease in the number of incidences except out-of-school placements which remained the same. Office referrals decreased by 20%, in-school conferences decreased by 17%, time-outs decreased by 23%, in-school suspensions decreased by 5%, and short-term suspensions decreased by 57% (Warren et al., 2006, p. 193). Teachers and administrators also responded positively in recognition of the improvement in student behavior and the understanding of the behaviors.

The third year showed a decline in the gains of the program. The factors that were attributed to the decline were the implementation of a new zero tolerance policy that mandated specific punishments for specific infractions, fewer efforts to teach the expectations, less reinforcement of positive behaviors, and a school uniform policy which caused conflict and power struggles (Warren et al., 2006, p. 194). Though the results were not as positive, there were still some successes in identifying the impact of policies which led to policy revisions.

This study helped to support the research showing school-wide PBS efforts can be successful by showing the success in a different environment, an urban middle school with diversity, high free and reduced lunch rates, and high rates of problem behavior (Warren et al., 2006, p. 194). However, the number of tickets that were distributed for positive behavior showed that “approximately 72% of the positive behavior tickets were given out by 25% of the teachers and staff.” (Warren et al., 2006, p. 195) The effect of the study could have been greater had more teachers and staff been instrumental in acknowledging and rewarding positive behavior. One of the limitations of the study was that this cannot be considered a causal study, it was not experimental in design and no comparisons with other matched schools were incorporated. Therefore, it cannot be said with certainty that PBS caused the decrease in discipline incidences (Warren et al., 2006, p. 195).

Bohanon et al. (2006) studied the application of schoolwide positive behavior supports in an urban high school. This study was a three year evaluation study to determine the modifications for PBS needed in high schools and once implemented the effect on discipline outcomes. The high school was a culturally diverse, low socio-economic (89% free and reduced lunch) high school in an urban setting. When the high school was chosen, “there was an overall 86% average daily attendance, 19% dropout rate, 30% mobility rate, and 20% special education rate.” (Bohanon et al., 2006, p. 133). This was a mixed method study with a quantitative measure of the fidelity and outcomes of discipline referrals and a qualitative measure of the interventions necessary for success and the perceptions of participants on the success of the program.

The first phase of the study included an overview of PBS with the principal and an initial needs assessment of the staff, followed by presentations to the teachers, support staff, and

administration. A lot of time was spent by researchers observing and interviewing. After the final presentations were given to the staff of the school on the results of observing and interviewing, the researchers were given permission to begin to develop a team to lead the PBS initiative (Bohanon et al., 2006, p. 136). The second phase of the study began with a formalized survey and retrieval of office discipline data for years one and two. Results of both the survey and office data were presented to the faculty. Areas of concern to be addressed were then determined by the faculty and staff (Bohanon et al., 2006, p. 137). The third phase of the study included training. The team included students, a parent/community agency member, teachers, an administrator, and a writing lab representative (Bohanon et al., 2006, p. 137). Proposed schoolwide expectations were developed by the team as well as an acknowledgement system, discipline policies, mission and vision statements, questions for the staff, and a sample syllabus for teachers (Bohanon et al., 2006, p. 137). Afterwards, remaining faculty and staff were trained and everyone decided how the program was to be implemented.

Year three of the study incorporated the implementation of PBS for the school. All staff were trained and given resources. Students were trained and rewarded for positive behavior. The reward system included tickets that could be redeemed for food in the school's cantina. Those tickets were then entered into a weekly drawing to select from donated items. Two schoolwide celebrations also occurred during year three of the study. The celebrations were a dance and movie tickets based on the decrease of discipline incidences. Using community support, a movie theater donated 1,800 tickets to continue to reduce discipline referrals (Bohanon et al., 2006, p. 138).

Based on a survey that has been tested for reliability and validity, the program was implemented to the suggested level of 80%, but not in all aspects. Staff perception on the survey

showed there were significant differences between the year without PBS and the year with PBS. Following the complete implementation of PBS after year two showed an even greater increase in support for PBS and the positive changes that occurred when implemented (Bohanon et al., 2006, p. 140). Discipline referral data between the second and third year showed a 20% decrease in average daily office referrals. During the final year of the study, a goal of 15% reduction rate of office referrals in April was surpassed with a 28% reduction rate. However, September showed the greatest reduction at 66%. A change in the number of incidences per child also decreased between years two and three (Bohanon et al., 2006, p. 140-141).

Issues in the study included the lack of teaching expectations in the high school setting. Though the school could not be considered in full implementation and work still needed to occur, there was still a treatment effect in the overall program (Bohanon et al., 2006, p. 141). The challenges unique to high school included schoolwide acknowledgement system, teaching behaviors, logistics of implementation, enacting consistent policies, and modifying the forms to track discipline data (Bohanon et al., 2006, p. 141).

Luiselli, Putnam, and Sunderland (2002) studied the longitudinal evaluation of a behavior support intervention in a rural public middle school. This study looked at data across four academic years in the same school. The school was situated in a middle to upper-middle class rural area with little diversity and negligible socio-economic status issues. The rate of free and reduced price lunch was 7%. The staff determined it was necessary to create incentive for positive behaviors. Since it was a local system and the program was designed by the educators, there was buy-in and the incentive to continue to adjust the program as needed (Luiselli et al., 2002, p. 184-185). Knowing the wealth of research on the effectiveness of PBS in the short term, the researchers decided to investigate the longitudinal effects.

A committee of school employees, parents, and community members coordinated the program. Areas of concern were identified by the committee along with behavioral expectations and determined guidelines and procedures. The objective was to reduce discipline referrals. Students were eligible to receive recognition cards that were entered into a drawing based on predetermined criteria – specified grade point average, all passing grades, no more than two homework detentions, no more than two absences and one unexcused late arrival, and no behavior detentions. Teachers or administrators could enter the name of the student that had shown significant improvement even if the other criteria had not been met. Three drawings were conducted each year. Students could also be given Caught Being Good cards if they showed exemplary behavior. These cards were also entered into a drawing for each Friday and again monthly and quarterly (Luiselli et al., 2002, p. 183-184).

The researchers measured the number of detention slips issued each academic year, as well as the category of the offense, absences, and the percentage of students who qualified for drawings (Luiselli et al., 2002, p. 183). The data showed a decrease for each year in overall detention slips given as well as in each category. The percentage of student attendance and students who qualified for drawings increased each year (Luiselli et al., 2002, p. 185).

There were some limitations in the study. There was no baseline data to show the program was correlated to the decrease of detention slips and increase in attendance and drawings. Also, the reliability of recording student discipline and the fidelity of the implementation of the program were not analyzed. Since this study was not experimental in design, it cannot be conclusively stated that the intervention was solely responsible for the findings. This study also did not differentiate between students with frequent discipline problems and those with infrequent discipline problems (Luiselli et al., 2002, p. 186). The

longitudinal method of study showed “progressive improvement over the 4-year period.”
(Luiselli et al., 2002, p. 187)

McCrary, Lechtenberger, and Wang (2012) studied the effects of schoolwide positive behavioral supports on children in poor rural community schools. This study occurred in Texas in four schools spread through three school districts. The three districts served a population of less than 2,500 community members and had more than 50% of their students receiving free or reduced-price lunch. The four schools had a majority of Hispanic students, with White and African American students in respective order. Economically disadvantaged students ranged from 71.41% to 78.15% (McCrary et al., 2012, p. 2-3).

In the first year of the study, training occurred and teams were created. Before schoolwide positive behavior supports (SWPBS) were implemented, the staff had to have an 80% buy-in rate and had to vote to implement the program. Then the researchers observed each campus to determine the training needs. Trainings were scheduled and each team developed behavior expectations. Each school began the implementation of the program at the beginning of the school year and continued for the full academic year (McCrary et al., 2012, p. 3).

One school was a middle/junior high school with 129 students. In the year prior to implementing SWPBS, there were 203 discipline referrals which were then decreased to 131 discipline referrals during the year SWPBS was in place. This reflected a 59% drop in office referrals during the first year of SWPBS (McCrary et al., 2012, p. 4). Another research site was a high school with 166 students. The school decided to focus on academic performance and a reduction of discipline referrals. Student failure rates for 6-week periods decreased 54% and discipline referral rates decreased 71% for the entire year (McCrary et al., 2012, p. 4).

An elementary school with 177 students was also included in the study and wanted to address coming to class unprepared. The researchers tracked in-school suspension (ISS) referrals and discovered a decrease in multi-day ISS from 331 to 11 and one-day ISS from 497 to 59 (McCrary et al., 2012, p. 5). The final school was a junior high school with 321 students who tracked disciplinary referrals. This school realized a 38% decrease in disciplinary placements in the first six weeks, a 61% decrease in students with two or more disciplinary placements, and a 44% decrease in disciplinary placement days (McCrary et al., 2012, p. 5).

The researchers did learn some lessons throughout the study. More planning on data collection should have occurred to ensure quality data. Administrative support and ongoing training of leadership teams are crucial to the success of SWPBS. Prioritizing the specific behavior proved helpful in focusing on what should be handled in the classroom versus the office. Monitoring and updating kept the faculty motivated to continue the program (McCrary et al., 2012, p. 6). This study showed that engaging school personnel in positive behavior supports allowed students to spend more time in the classroom and less time in restrictive punitive environments. Though this was just the first year of a five year study, the results were promising and showed that students in impoverished rural areas can be served positively with SWPBS (McCrary et al., 2012, p. 6).

A team of researchers led by Daunic (2012) chose to study the efficacy of the Tools for Getting Along program designed to reduce problem behavior in upper elementary grade students. Cognitive-behavioral interventions have been used throughout the years to contend with emotional and behavioral problems. The idea is to prevent difficulties by teaching students to self-regulate behavioral and emotional responses. If students can be captured early before the disrupting behaviors occur, the support of other classmates could become invaluable as examples

of positive behavior (Daunic et al., 2012, p. 151). Therefore, a schoolwide attempt at a cognitive-behavioral intervention could capture students who may not have even been identified as having problems. Cognitive-behavioral interventions are not new and have been studied the past 25 years. This study focused on the Tools for Getting Along (TFGA) program designed to teach students how to use social problem solving (Daunic et al., 2012, p. 151).

The TFGA program was focused on learning, rehearsing, reviewing, and practicing how to problem solve to prevent behavioral problems. The curriculum takes into account that social cognition is a part of the development of aggression. “The model consists of 6 steps: (a) encoding of external and internal cues, (b) cue interpretation and mental representation, (c) clarification or selection of a goal, (d) response access or construction, (e) response decision, and (f) behavioral enactment” (Daunic et al., 2012, p. 151). The first two steps focused on recognizing social problems and learning to calm down. Calming down allows cognition to engage. The third step defined the problem to clarify goals and barriers to those goals. The fourth step was to brainstorm solutions that help to construct the response. The fifth and sixth steps allowed the child to select and evaluate the response that was selected (Daunic et al., 2012, p. 151-152).

Two preliminary studies showed positive treatment effects for TFGA, however, the studies were limited by small sample sizes and lack of knowledge on the fidelity of the program’s introduction. This study investigated whether the TFGA program improved the risk of emotional and behavioral problems. The hypothesis was that by improving knowledge of students about problem solving, improving teacher-reported behaviors of students dealing with executive function, and improving teacher-rated accounts of student social-emotional adjustment

and aggression the program would then positively affect students' self-rated anger control, expression, and social problem solving (Daunic et al., 2012, p. 152).

In this particular study, TFGA was used in a universal design. The design of the study included a pretest and a pretest-by-condition interaction for the outcome variables (Daunic et al., 2012, p. 152). Therefore, the possibility of benefits to all students could be studied as well as the specific interaction effects. Other variables that were controlled for included gender, race/ethnicity, and socio-economic status (Daunic et al., 2012, p. 152). Use of the Florida Comprehensive Achievement Test (FCAT) was implemented to control for academic competence since all students take the statewide assessment.

Fourteen elementary schools agreed to participate in the study. They had to have at least 60% of students qualified for free or reduced lunch. The researchers met with the fourth and fifth grade teachers to explain the study and program. At least 75% of the teachers had to agree to participate before random assignment took place. The schools were then matched based on the percentage of free or reduced price lunch. Within the fourteen schools, there were 87 classrooms and 1,775 potential students. Forty-four were treatment classrooms and forty-three were control with a range of 65% to 90% qualifying for free or reduced lunch. Of the 1,775 students, consent from parents for 1,341 was obtained. The final sample included 1,296 students due to exclusion based on missing data (Daunic et al., 2012, p. 153).

Six different instruments were used in this study to determine the efficacy of the treatment (TFGA). Three of these instruments were for the students and three for the teachers. All included a pretest and posttest. A knowledge questionnaire on problem-solving was developed and given to students as a pretest and a posttest after being taught concepts through

TFGA. Another instrument for students was the anger expression scale for children. Using a Likert scale, students answered questions in four categories – trait anger, anger-out, anger-in, and anger control. Higher trait anger and anger-out scores tend to indicate more anger and outward displays while anger-in and anger control scores show more effort to contain anger (Daunic et al., 2012, p. 154-155). The last instrument for students was the social problem-solving inventory-revised. Again this instrument used a Likert scale for students to self-report problem solving issues from awareness of problems to the skills necessary to solve problems.

The teachers were asked to fill out three different instruments. The behavior rating inventory of executive function (BRIEF) form also employed a Likert scale. Teachers rated students based on the Behavioral Regulation Index (BRI) and the Metacognition Index (MI) and Global Executive Composite (GEC) scores (Daunic et al., 2012, p. 154). Each of these scales measured control and the ability to manage emotions and behavior as well as the ability to manage tasks and monitor performance (Daunic et al., 2012, p. 154). The second instrument for teachers was the clinical assessment of behavior teacher rating form. This scale measured the internalizing, externalizing, social skills, and competence for students to determine possible conduct disorders or other behavior disorders. The last teacher instrument was the reactive-proactive aggression scale. This scale was used to determine the possibility of aggression for students. There were two subscales: Reactive Aggression, and Proactive Aggression. (Daunic et al., 2012, p. 154).

Training for the teachers and guidance counselors in the treatment schools occurred for two days during the second full month every year of the study (Daunic et al., 2012, p. 155). Within two weeks of the training, but before the program was implemented, pretests were given to students and teachers. As soon as the baseline data were collected, teachers began teaching

the TFGA lessons at the rate of approximately one to two a week (Daunic et al., 2012, p. 156). Follow-up meetings were held with the treatment schools at mid-year to answer questions, receive feedback, and to reemphasize the goals of the TFGA curriculum. Posttests were given two weeks following the end of instruction for both treatment and control schools.

Researchers examined the pretests prior to treatment to determine any significant differences between control and treatment groups. The control group participants were at higher risk for Trait Anger and Anger Out on the self-report of the anger expression scale for children (Daunic et al., 2012, p. 157). All other subscales for the tests showed no significant differences. In viewing the condition effects, it was noted that students with lower problem-solving knowledge did benefit more from the intervention than students with a higher problem-solving knowledge score. Treatment also affected the size of the pretest and posttest risk on the Behavioral Regulation Index and the Metacognition Index scores, Proactive Aggression subscale, and Anger-Out and Trait Anger subscales (Daunic et al., 2012, p. 157). Positive changes occurred at both the teacher-reported level and the student-reported level showing a better approach for solving social problems. Student characteristics, such as gender, race, free or reduced lunch, reading and math scores, also showed some significant effects. Due to the variance of risk based on afore mentioned characteristics, the researchers chose to control for those variables (Daunic et al., 2012, p. 158-159).

Teachers were observed and asked to complete checklists to show how and when the TFGA curriculum was used. Based on observations, most teachers followed the curriculum as designed. The curriculum checklists completed by teachers also indicated the lesson content was all or mostly covered with the components of activities and worksheets employed. The TFGA Teacher Questionnaire indicated that teachers felt the program was fairly easy to implement and

the effects on student behavior were positive (Daunic et al., 2012, p. 160). The efficacy of TFGA was investigated by using a randomized controlled trial. The data showed significant and positive effects on problem solving, social-emotional adjustment and aggression, and anger control and expression.

The knowledge of social problem solving was the significant main effect of treatment (Daunic et al., 2012, p. 160). Solving social problems requires a foundation of knowledge about problem solving. Teachers reported higher scores on the ability of students to manage behavior and control impulses and to transition as needed per circumstances. Other areas of significance included initiating strategies, organizing plans, and monitoring performance to help self-regulate behaviors and problem solving (Daunic et al., 2012, p. 161). TFGA also seemed to positively impact proactive aggression which helps with better social skills. Students who had some impulse control benefitted more from TFGA than those with less impulse control in the short term. It appeared the students were able to look at long term consequences of aggressive choices (Daunic et al., 2012, p. 161). Another benefit to TFGA was the lower risk of self-reported trait anger and outward expressions of anger. The intervention was focused on anger awareness, calming techniques, and opportunities to practice events causing anger. Students were most likely more aware of both traits (Daunic et al., 2012, p. 161). One other positive effect was the tendency of students to approach problems positively rather than negatively. “Collectively, study findings indicate that treatment affected aspects of intra-individual self-regulation,” (Daunic et al., 2012, p. 162).

In light of these findings, researchers concluded that the universal design was an important component to reach all students and teach positive problem solving skills. Even if the effect sizes were not significant, reaching students who could be at risk for social-emotional

problems would far outweigh the costs. This intervention could help prevent referrals to special education in the long run for students who may not be able to function in the general education setting without accommodations later. At-risk students were able to learn the steps for positive problem solving alongside peers before a significant problem appears (Daunic et al., 2012, p. 162).

Some limitations were cited in this study. One was the possibility of sampling bias. Students who had consent were pretested, but others were not. The chances of them being drastically different in a randomly assigned school experiment are slight, but could possibly be an issue. There is also the possibility of teacher bias. Since teachers are being trained to focus on behavior and problem solving techniques, it is possible that the shift in perception can cause a biased outcome on the posttests. Self-reported data can also show bias based on individual characteristics of students. The reliability of the posttest for student problem-solving knowledge was below the acceptable .70 measuring at .67. Therefore, adding more information such as a parent observation and direct observations of students could help shore up the data. Another limitation was the finding that students showed improvement on control, but not on externalizing that behavior.

Bradshaw et al. (2008) sought to study the effects of positive behavioral interventions and supports (PBIS) on school climate, specifically elementary schools. In order to fully investigate the possibilities, the researchers used thirty-seven Maryland public elementary schools from five school districts that were both rural and suburban over three years. The data were collected based on a group randomized study. The schools were matched according to free and reduced lunch percentages, student enrollment, and percentage of students suspended (Bradshaw et al.,

2008, p. 464). Twenty-one schools were the experimental group that received PBIS training and sixteen schools were the control group that did not implement PBIS.

Teams were formed at each of the 21 schools that were implementing PBIS. Each team attended two-day training with George Sugai, one of the developers of PBIS. Support coaches, a regional coordinator, and a state leadership team were all a part of the scaffolding of support that was offered to the schools (Bradshaw et al., 2008, p. 464). Each summer, the teams then attended training events to ensure fidelity of the intervention. Coaches were trained four times a year. All schools that implemented PBIS in this study did so with high fidelity (Bradshaw et al., 2008, p. 464).

Data were collected from all 37 elementary schools. There were 2,507 participating staff members – including general education teachers ($n = 1,387$; 55.33%) and student support staff ($n = 1,120$; 44.67%) (Bradshaw et al., 2008, p. 465). Student support staff included school psychologists, counselors, teaching assistants, office staff, and resource teachers (Bradshaw et al., 2008, p. 465). The majority of the staff was female (91.34%) and Caucasian (86.48%) with the African American population accounting for 11.21%. The ages of the staff were spread fairly evenly throughout each decade (Bradshaw et al., 2008, p. 465). Baseline data were gathered and a table of demographics was provided.

To determine organizational health, the Organizational Health Inventory for Elementary Schools (OHI) was used. According to Bradshaw et al. (2008, p. 466) this inventory, developed by Hoy & Feldman in 1987, is widely used and has been validated to show organizational health. This inventory was used to measure the healthiness of a school based on five aspects: *institutional integrity* (school's ability to withstand destructive outside forces; teachers are

protected from unreasonable community and parental demands), *staff affiliation* (friendly and positive interactions with trust and confidence among staff, commitment to students, and sense of accomplishment), *academic emphasis* (respectful, cooperative students driven to improve skills), *collegial leadership* (principal is friendly, open, supportive, and neither restrictive nor directive), and *resource influence* (principal's ability to lobby and influence resources from district for the school) (Bradshaw et al., 2008, p. 466). The instrument utilized a Likert Scale to determine an overall OHI score by averaging the five subcategories.

Since the study was over four years, the data included baseline data plus the three following years. Staff response ranged from 80% to 86% throughout the study (Bradshaw et al., 2008, p. 466). When looking at the baseline data, no significant difference was found between the control and experimental groups concerning the OHI scores and demographic characteristics based on a multivariate analysis of variance that was conducted (Bradshaw et al., 2008, p. 466-467). Therefore, the researchers studied the amount of change during the four year study.

Each school was assigned to a group of either control or experimental as the school level variable. Adjustments were made for the staff based on sex, race, age, and role in school (Bradshaw et al., 2008, p. 467). The researchers also controlled for staff perception by adjusting for free and reduced lunch percentages, student mobility, faculty turnover, and school enrollment (Bradshaw et al., 2008, p. 467). The baseline data did not show any significant differences between the control and experimental groups which indicated equal opportunity for growth. Longitudinally however, differences occurred. The experimental group, schools that implemented PBIS, showed a significant difference from the control group in the overall OHI, resource influence, and staff affiliation (Bradshaw et al., 2008, p. 467). Academic emphasis showed a slight significant difference. No significant differences were found for collegial

leadership or institutional integrity (Bradshaw et al., 2008, p. 467). As stated earlier, school and staff level variables were controlled in the analyses. Based on intervention effect sizes, overall OHI, resource influence, staff affiliation, and academic emphasis were also considered significant.

The experimental group, schools that implemented PBIS, showed significant improvements in overall organizational health, resource influence, and staff affiliation (Bradshaw et al., 2008, p. 469). Academic emphasis also showed some significance. No significant effects were found in collegial leadership or institutional integrity. The researchers again theorized that PBIS does not directly target management and leadership style; therefore, it is possible that PBIS does not affect principal leadership overtly. As to institutional integrity, the theory is that school districts and legislators have more influence than unreasonable demands of the public (Bradshaw et al., 2008, p. 469). The researchers did denote association among “staff- and school-level characteristics and perceptions of the school environment” (Bradshaw et al., 2008, p. 469). The significance of this association serves to show the importance of controlling for variables before an examination of the changes in the organization are occurring.

A major limitation is the reliance on self-reporting of the staff (Bradshaw et al., 2008, p. 471). This could affect both internal and external validity. Since the study was voluntary, it is possible that the non-respondents versus the respondents could have different demographics that could be biased; though the demographics overall were the same. Another limitation was the schools were all voluntary which keeps the study from being randomized. It could be that the schools that volunteered to be a part of the study were ready for changes and therefore embraced the intervention more readily with better results. Also, no urban schools or secondary schools were used in this study (Bradshaw et al., 2008, p. 471). Another factor to consider is the strength

of the PBIS training in Maryland versus other states. Due to the support available, this study may not be generalizable.

The findings of the study indicated that PBIS has a positive effect on the health of the organization. Since this study was over a four year period, most likely the effect sizes were even greater as time progressed (Bradshaw et al., 2008, p. 472). The results of this study could be helpful to administrators and school psychologists as well. Based on the overall health indicators, extra support could be given in places where needed. Administrators that are interested in increasing the overall organizational health of their building could implement a school-wide program like PBIS that could improve the perception of healthiness. However, sufficient time and resources need to be allocated to allow for the successful implementation (Bradshaw et al., 2008, p. 472).

Muscott (2004) led a team of researchers to study the preliminary results of implementing a system of positive behavioral interventions and supports (PBIS) in the state of New Hampshire. Schools in Oregon and Illinois experienced reductions in referrals, suspensions, and expulsions. As a result, the same schools saw an increase in academic achievement scores (Muscott et al., 2004, p. 455). The purpose of this study was to gauge the effectiveness of large-scale implementation of PBIS (Muscott et al., 2004, p. 469).

Schools in other states that have been helped by the national Center on Positive Behavioral Interventions and Supports located at the University of Oregon are Alabama, Arizona, Colorado, Illinois, Maryland, Missouri, New York, New Hampshire, and Hawaii with the sole purpose of having schools address behavior comprehensively (Muscott et al., 2004, p. 456). Using a research-validated measure of implementation created by Sugai, Lewis-Palmer, Todd, &

Homer in 2001, called the School-wide Evaluation Tool (SET), Illinois, Maryland, and Colorado showed success in implementing PBIS (Muscott et al., 2004, p. 456). Based on the previous data, New Hampshire decided to implement PBIS across the state and the New Hampshire Center for Effective Behavioral Interventions and Supports (NH CEBIS) was created to implement the program.

This study focused on whether the state could effectively implement a school-wide system and would it show a decrease in discipline referrals and dropouts while showing an increase in academic achievement. Other factors that were also determined during this study were whether PBIS could be implemented with fidelity and whether the success of the implementation was dependent on whether the school was elementary, middle, high, or multi-level. The first part of the method of study was selection of schools. Following two full days of workshops and two days of school discipline information in which all principals, superintendents, and special education directors in the state were invited, an application process was developed. New Hampshire CEBIS trained and offered technical assistance to selected schools to implement PBIS. New Hampshire CEBIS did ask that schools commit to a three year process and organize employees and families into teams to address the three tiers of PBIS. The schools also had to agree to certain requirements that showed readiness.

All 26 schools that applied were accepted into the program. In addition to the initiative of positive behavioral intervention supports, another initiative in New Hampshire at the time was the Achievement for dropout Prevention and Excellence (APEX). APEX asked that two additional high schools with high dropout rates be included since PBIS was one of the pillars of the initiative. Therefore, 28 schools were included in this study ranging from a Head Start preschool, thirteen elementary schools, six middle schools, four high schools, and four multi-

level schools (Muscott et al., 2004, p. 458). The schools factored in every geographical region in the state, and enrollments varied from a small multi-level school of 124 students to a large urban high school of 2,381 students. Demographically, the students were predominantly Caucasian, free and reduced lunch percentages ranged from 2.1% to 100%, English as second language students (ESL) ranged from 0% to 14%, and dropout rates were from 0.9% to 10.8% (Muscott et al., 2004, p. 458).

The next facet of the study was to create leadership teams in the schools. Administrators were asked to formulate a “Universal Leadership Team (ULT) to guide the development, implementation, maintenance, and evaluation of the program” (Muscott et al., 2004, p. 462). The team was to consist of major stakeholders and peers that were respected. One person was labeled the PBIS coach. Typically the team was approximately 8 to 12 people that met on a regular basis. An administrator, general educator, special educator, behavioral or mental health specialist, parent, and student (if applicable) made up the ULT (Muscott et al., 2004, p. 462). Other members could be added if deemed necessary.

Trainings then occurred for the ULTs. New Hampshire CEBIS provided the trainings with the idea of sustainability. For the first year, the focus was on the development of the first tier, then moving toward the third tier. Coaches were trained separately. In this particular study, the first tier was be spotlighted. All of this training occurred in four full days. A PBIS facilitator was then assigned to each school for either a half or full day per month for technical assistance.

Data were collected from all 28 schools in November and December of 2003 using the SET, which meant it was approximately six months after training and approximately four months after introducing the program to students. Other data, such as surveys and student outcomes,

were to be collected throughout the program. Evaluators set up interviews and visits with the administrators. After the interview, documentation and facilities were examined. Evaluators then interviewed students and staff about rules and whether they were being taught and rewarded. Using the SET data and criteria, an analysis showed that 15 of the 28 schools (54%) met the average of 80% standard for successful implementation. The schools met the criteria overall, but did a better job at managing discipline rather than being proactive based on the criteria.

Five levels of schooling were used in this study – one preschool, 13 elementary schools, six middle schools, four high schools, and four multi-level schools. In looking at the SET scores, at least half of the schools at the individual levels of schooling, except for the high school level, successfully implemented the program. Preschool had the highest averages, but only had one school in the category. Multi-level schools had three of the four schools successfully implement the program. Elementary schools had 62% successful implementation while the middle schools had 50% successfully implement the program. None of the four schools in the high school category meet the 80% average required to be considered successfully implemented. Implementation at the preschool, elementary, middle, and multi-level schools was considered to be successful. The high school sample was not a successful implementation.

The achievement rates discussed above were similar to other states that have studied the effectiveness of PBIS on large scales. In New Hampshire, the study began at the earliest stages of implementation which is encouraging since other data were gathered within one to two years of implementation.

Consistent with findings in Maryland and Colorado, high schools seemed to be the least successful in implementing a schoolwide discipline program. Reasons for this conundrum were

the complexity and size of the school made it more difficult to systematically accept change quickly, a shift in culture required to move from punitive to proactive discipline does not dovetail with high school teachers' expectations of high school students, or the idea that high school students should know how to behave and teachers should not have to teach behavior with academics. High school teachers tend to have very high standards for behavior whether the students are able to reach that standard or not. The problem of unsuccessful implementation of a program that has research supported success in high schools should cause concern. By the time students reach high school, more serious consequences of their actions occur, more egregious violations occur, and less time is at hand to correct behavior before it has an impact on society.

Perhaps the reasons multi-level schools have been more successful at implementing positive behavior support programs are based on the small size of the schools, the sense of community in those schools, and the influence of the younger students in the schools. More research would be needed to determine if multi-level schools truly have a better chance at implementing PBIS than other levels of schools. The researchers in this study only used four multi-level schools which does not lend to generalizable results.

If the findings of this study continue to be replicated, the implications for policy, practice, and research could be great. If office discipline referrals and problem behavior continue to decrease while achievement increases, other states may decide to implement PBIS on large scales. The support at the state level and the national PBIS Center at the University of Oregon were considered to be crucial in the success of the implementation of the program. Since the training, standards, and processes were all stemming from the same source, the program was implemented comprehensively and not piecemeal. Support from the district and school were considered to be critical components.

The study included six possible limitations to consider. The small number of schools at each level plus the two high schools that became a part of the study only due to the dropout prevention grant (APEX) was considered a limitation. Baseline data were not collected so it cannot be interpreted that the implementation of the program caused the decline in problem behavior. The evaluators could have had bias since they were members of the NH CEBIS and they knew the research questions ahead of time. Lastly, the data were collected using only one instrument so no control measures were in place.

Snyder et al. (2010) studied the impact of a school-based program that focused on social-emotional learning and character development. This particular program was entitled *Positive Action (PA)*. According to Snyder et al. (2010), “The *Positive Action* program (<http://www.positiveaction.net>) is a comprehensive schoolwide social-emotional and character development (SACD) program designed to improve academics, student behaviors, and character”(p. 31). The purpose of the study was to evaluate academic achievement, absenteeism, and disciplinary referrals (Snyder, et al., 2010, p. 29). The researchers hypothesized that the implementation and use of *PA* with fidelity would have a positive effect at the school level with absenteeism, discipline referrals, retention, and achievement. (Snyder et al., 2010, p. 30).

The study occurred in Hawaii using 20 public elementary schools that are either K-5 or K-6 in organization. These schools were typical community schools that did not cater to specialized groups of students such as special education, magnet, or charter. The schools had to meet three criteria to be involved in the study. Schools had to have: (1) at least 25% of students on free and reduced-price lunch, (2) lower standardized scores than the top quartile in the state, and (3) fewer than 20% of students moving in or out on a regular basis (Snyder et al., 2010, p. 30). Schools were then ranked and matched on an index based on demographics, special

groupings of students, and behavior and performance outcomes (Snyder et al., 2010, p. 30). Then schools were matched in pairs based on the index scoring which included free or reduced lunch percentages, school size, percentage stability, ethnic data, percentage of special education and limited English proficient students, standardized test scores, absenteeism, and suspensions. The schools were then randomly assigned to either the control or intervention group before being asked to be in the study (Snyder et al., 2010, p. 30). Intervention schools were asked to implement *PA* and control schools were asked to make no major changes based on social-emotional and character development programs (p. 30). Intervention schools were given the program at no charge while control schools were given a monetary incentive and option to implement the *PA* program afterwards (p. 31).

The *PA* program can be utilized in the K-12 setting, but only the elementary component was used in the study. The curriculum consisted of “a schoolwide climate development component, including teacher/staff training by the developer, a *PA* coordinator’s (principal’s) manual, school counselor’s program, *PA* coordinator/committee guide, and family-and community-involvement programs” (Snyder et al., 2010, p. 31). When the program was fully implemented, students were exposed to the program approximately one hour a week (Snyder et al., 2010, p. 31). Lessons were organized in six units: self-concept, physical and intellectual actions, social/emotional actions for managing oneself responsibly, getting along with others, being honest with yourself and others, and continuous self-improvement (Snyder et al., 2010, p. 31). Teachers were to use an interactive approach rather than just lecture to fully involve students. *PA* training sessions were conducted prior to the academic year by the program developer. The amount of time for the sessions lessened each year the study progressed because the faculty and staff began to understand the program.

Using the School Report Card (SRC) of the Hawaii Department of Education, school-level data were obtained from 1997 to 2007. In the year 2002, data were available for all indicators that the study was utilizing to determine effectiveness. These data became the baseline for all statistical comparisons. Since student performance data were readily available showing absenteeism, suspensions, retentions, and achievement, these data became the dependent variables for the study (Snyder et al., 2010, p. 32). The four academic achievement indicators were the “Grade 5 math and reading standardized test and Grade 4 math and reading Hawaii Content and Performance Standards” (Snyder et al., 2010, p. 34).

The researchers chose two matched-paired t tests to denote differences between the final year of implementation and the baseline data. Since data for all schools were available for 2002, this became the baseline data. There were no significant differences between intervention and control schools on any of the variables for baseline data (Snyder et al., 2010, p. 37). In regards to implementation, it seems the schools implemented the program adequately, but more fidelity could have been shown (Snyder et al., 2010, p. 39). At baseline, the *PA* and control schools were significantly below state averages, but by the posttest and one year post trial, intervention schools met or exceeded state averages for academic achievement. The other indicators show the same pattern of divergence after the intervention took place.

According to the matched paired t tests, posttests results indicated that *PA* schools had significantly higher math and reading HCPS II scores and significantly lower absenteeism with marginally fewer suspensions (Snyder et al., 2010, p. 42). Even at the one year post trial, the schools that continued to use *PA* had increases in academic achievement indicators while absenteeism and suspensions were significantly lower. Overall, the results of the tests showed

decreased absenteeism, disciplinary referrals, and retentions for intervention schools in comparison to control schools (Snyder et al., 2010, p. 45).

The purpose of this study was to evaluate the effects of *PA* on academic achievement, absenteeism, and disciplinary outcomes (Snyder et al., 2010, p. 29). This study was an extension of prior research and confirmed the preliminary findings (p. 47). The results of the study demonstrate *PA* to be an effective program for social-emotional and character development which helps to then influence academic behaviors. *PA* is a comprehensive program which involves all stakeholders in education to increase positive behaviors. The program uses various modes of delivery and touches on multiple modes of learning to further reach students.

The study did have limitations. One limitation was the lack of availability of classroom or student level data due to privacy concerns. Another limitation was how each school may report data. The fidelity of reporting could skew the results. Also, only 20 schools participated which could result in “low statistical power” (Snyder et al., 2010, p. 48). A larger sample would have been helpful to be able to gather more observations for the random-effects growth curve models. Implementation data were not sufficiently collected to be able to use implementation as a covariate in the study; therefore, effects of fidelity of implementation could not be studied in this research. Last, results cannot be generalizable to all schools, only those willing to conduct the program. “This study makes clear that a comprehensive school-based program that addresses multiple co-occurring behaviors can positively affect both behavior and academics” (Snyder et al., 2010, p. 49).

Summary of Literature Review

The purpose of this chapter was to review the data already available on positive behavior supports in schools. High attendance rates and low discipline incidents indicate prerequisite conditions for a successful school career. Both of those variables also correlate positively to low drop-out rates. In order for schools to be considered successful, students need to be in attendance for instruction.

The studies referred to above are just a sampling of research studies on positive behavior supports. The intention was to show how positive behavior supports have been successful in many different venues and over various amounts of time. The longitudinal studies however were only at one location and did not follow the students themselves. The present study followed students throughout their educational career to determine the enduring effects of a positive behavior supports program.

Evaluation Approaches

During the twentieth century, an expansion of program evaluation approaches occurred due to international and national activity. Strengthening the defense system, new civil rights laws, federal requirements of evaluations for the Great Society programs, accountability in school systems, and new international competitiveness for the United States led to a demand for more and better evaluation approaches (Stufflebeam, 2001, p. 8). According to Stufflebeam, “evaluation means a study designed and conducted to assist some audience to assess an object’s merit and worth” (2001, p. 11).

Within the broad scope of evaluation approaches, Stufflebeam classified the evaluation approaches into four categories – pseudoevaluations, Questions and/or Methods-Oriented,

Improvement/Accountability, and Social Agenda/Advocacy (Stufflebeam, 2001, p. 11). The first category promotes invalid or incomplete findings; the other three are considered relevant approaches. The Questions and/or Methods-Oriented evaluation approach answers specified questions and/or uses a particular method (Stufflebeam, 2001, p. 16). This approach will begin with narrowly defined questions. There are treatments, problem statements, independent and dependent variables, questions, and hypotheses used as advance organizers (Stufflebeam, 2001, p. 43). This approach can determine cause and effect relationships in programs and will show a program's effects on outcomes (Stufflebeam, 2001, p. 44-45). The strengths of this approach include: common sense appeal, stress on validity and reliability, focuses on outcomes and the possibility of cause and effect relationships, and it is a widely known and applied approach (Stufflebeam, 2001, p. 50-51). The weaknesses of this approach are possibilities of yielding terminal information that does not help improve a program, providing too narrow of a basis for judging the true merit and worth of a program, and missing important side effects (Stufflebeam, 2001, p. 53-54).

The other two approaches are Improvement/Accountability and Social Agenda/Advocacy. Improvement/Accountability approaches are expansive and comprehensive in nature. These approaches assess the needs of the stakeholders as well as the criteria to assess a program. Improvement/Accountability approaches examine technical, economic, and operative aspects of programs. They are objective and seek definitive answers by using multiple quantitative and qualitative criteria (Stufflebeam, 2001, p. 42).

Social Agenda/Advocacy approaches seek to make a difference in society through program evaluation. These approaches are designed to make sure equal access is available to all educational and social opportunities and services (Stufflebeam, 2001, p. 62). Social

Agenda/Advocacy approaches tend to look at programs through the lens of the disadvantaged. The idea is not to find the right answer, but to find reflective practices and stress “cultural pluralism, moral relativity, and multiple realities” (Stufflebeam, 2001, p. 62). Engagement of stakeholders is an important tenet of these approaches in both obtaining and interpreting the findings (Stufflebeam, 2001, p. 62).

Within this category of questions and/or methods-oriented evaluation, a formative or summative approach has been identified. “Formative evaluation is conducted during the development or improvement of a program or product” (Madaus & Kellaghan, 2000, p. 28). Summative evaluation occurs after the program has been completed and is usually for someone other than the participants or a decision-maker (Madaus & Kellaghan, 2000, p. 28).

McMillan & Wergin (2010) discussed methods of evaluating educational research and narrowed the discussion to specific designs. A “type of quantitative nonexperimental design that investigates relationships is comparative” (McMillan & Wergin, 2010, p. 15). The purpose of this design is to compare two groups or more on specific phenomenon (McMillan & Wergin, 2010, p. 15). Comparative studies can be used to show differences over time and is considered longitudinal if the same group of subjects is investigated. Longitudinal studies are considered stronger and more credible (McMillan & Wergin, 2010, p. 15) because differences in variables can be controlled more easily. The caution of using a nonexperimental design would be to not infer causality from correlations, regressions, or comparative differences whether significant or not (McMillan & Wergin, 2010, p. 15).

The present study of the longitudinal influence of a behavioral support program will attempt to evaluate the long term effects of a positive behavior support program in one

elementary school compared to a random sampling of other elementary school students in the same county. The effects to be studied will be attendance, dropouts, and discipline referrals after all students enter the same high school in the county to control further for variances. Therefore, according to the above descriptions, the present study will be categorized as a quantitative nonexperimental design using a questions and/or methods-oriented summative evaluation comparing two groups of students longitudinally.

Chapter 3

Methodology

Introduction

The purpose of this study was to determine if high school students who have received instruction in the STAR program for four years in the elementary school demonstrated more self-regulation on selected measures of student behavior than students who have not received such instruction. The present study followed students throughout their educational career to determine the enduring effects of a positive behavior supports program. In order to determine the successfulness of self-regulation, attendance records, discipline incidents, and drop-out rates were reviewed as students progressed through high school. This information was recovered from reports given during school board meetings that compared school effectiveness on a long term basis according to the statistics listed above.

The purpose of this chapter is to describe the methodology and the population of this study. The data needed to complete the study were also explained. In gathering the data, the methods of gaining consent and data, and the treatment and analysis of the data were detailed to further delineate the process of the study.

Population

The population of this study consisted of all 619 students from grades nine through twelve who were enrolled during the 2012-2013 academic year at a single high school that serves an entire county. The one high school contains grades eight through twelve for all students of the county. However, eighth grade students were not chosen for inclusion in the study because the first year of high school is a transition year and data could be skewed as a result of student adjustments. Further, the majority of high schools are a ninth through twelfth grade

configuration. In order for this study to be replicable, ninth through twelfth grade students were used.

The population of this study attended one of four elementary schools that contained pre-kindergarten through seventh grades. One elementary school implemented the STAR program that was designed to help students begin to self-regulate behavior. For the purposes of this study, the elementary school that utilized the STAR program was referred to as School A. The rest of the three elementary schools were assigned a similar designation. The largest elementary school in the school division was School B, while the next largest was School C. The smallest school was referred to as School D.

According to the Virginia Department of Education website, the school division had 33.82% free and reduced lunch in the 2004-2005 academic year. In 2012-2013, the school division had 45.94% free and reduced lunch. During the seven years, the number gradually increased as factories closed, jobs were relocated, and people were unemployed. The population in the county has increased from 14,493 people in 2005 to 15,378 people in 2010. People have apparently stayed in the county even as jobs became scarce.

The special education population was 18% of all students in 2004-2005 and in 2012-2013 the population was 15.34% of all students. This percentage remained comparable. Total division enrollment has decreased over the years with 2,095 students in 2004-2005 and 2,027 in 2012-2013.

The student population was chosen based on the date of the inception of the STAR program at School A. Since the STAR program targeted fourth through seventh grade students, the first group of fourth graders that received four years of instruction with the program was the group that was in fourth grade during the 2004-2005 academic year. Each succeeding fourth

grade class was also instructed in the program for four years. The students in first grade in 2004-2005 were ninth graders in 2012-2013. While second grade students in 2004-2005 were tenth graders in 2012-2013. Therefore, those students in first through fourth grade during the academic year of 2004-2005 were ninth through twelfth grade students for the 2012-2013 academic year.

For the purposes of this study, only students who received four years of instruction in the STAR program from School A and have completed their education with the school system was eligible. Based on the information provided by the central office staff report to the School Board, only 72 total students from School A that began the STAR program in the fourth grade and completed four years of the program were included in the study. There were originally 104 students, but 20 students either transferred or were homeschooled during their high school years. Twelve students graduated or dropped out, but were not at School A for four years of instruction in the STAR program leaving 72 students of the original 104 students. The sample for treated students consisted of those students in School A who received four years of training in STAR. This translated to the following high school enrollment for School A: 9th grade had 20 students, 10th grade had 18 students, 11th grade had 17 students, and 12th grade had 17 students.

The sample of control students consisted of a random sample of students from the remainder of the elementary schools. This was done by randomly selecting the appropriate number of students from the rest of the high school population that equaled the number from School A by grade level. Since Schools B, C, and D did not have instruction in the STAR program, all students from those schools were combined in order to draw a random sample. However, only students who have spent their elementary school years in the other schools and completed their education with this school system were eligible for the study as a control group.

Therefore, 20 ninth grade students were chosen from the 86 students available from Schools B, C, and D that attended those schools for fourth through seventh grade. Eighteen students were chosen from the 92 available tenth graders, 17 were chosen from the 103 available eleventh graders, and 17 were chosen from the 112 available twelfth graders. Transfer students were taken out of the random selection because it was unknown as to whether any positive behavior supports had been used for instruction in other school systems.

Table 1 shows the number of students from School A by grade level compared to the number of students in the remainder of the school population by grade level. The table shows there were 20 eligible students who attended School A, received four years of instruction in the STAR program, and completed their education out of 166 total ninth graders in the high school. Each grade level shows the students who are eligible for the study.

Table 1

Number of Eligible Students

2012-2013					
Number of Eligible Students Compared to Total High School Population					
Grade	9th	10th	11th	12th	
School A	20	18	17	17	
Schools B, C, D	86	92	103	112	
Transfer Students	60	43	27	24	
Total	166	153	147	153	619

In 2004-2005, there were 545 students in first through fourth grades in the school division. By the time those students were in high school, the number of students had grown to 619. Therefore, the school division had gained 74 students over the years. This represented over

a 10% increase in student population. The implication of this increase was that the school division has a fairly transitory population.

In order to gather the necessary data, School A was assigned the number one, School B was number two, School C was number three, and School D was number four. Using the Statistical Package for Social Sciences (SPSS) software, all schools that were greater than one were filtered and copied to a new data set. Within the new data set, SPSS randomly selected the corresponding population necessary to equal the treatment group by grade level. The remaining data was deleted by SPSS. The data from School A and the new randomly selected data were merged into one data set to run statistical analyses.

Consent

Though the school division policy stipulates consent was not necessary in the event research is conducted to compare or show effectiveness of instructional techniques, curricula, or classroom management methods if subjects cannot be identified (Floyd County Public Schools Policy JHDA, 2012), consent was obtained from the division superintendent. A conversation with the superintendent of the school system confirmed permission for the study to occur. A consent form is attached in Appendix B showing confirmation of permission to conduct the study in the school division. Because the student data was public domain, no student or parent consent was necessary.

Data Needed

Data needed to complete the study consisted of attendance reports, discipline reports, and drop-out status of each student. Every fourth grade class who started the STAR program from 2004 until 2008 in School A was included, as well as a random sampling of Schools B, C, and D fourth grade classes of the same time period. The minutes from the October 14, 2013 School Board Meeting had a report from the central office staff that listed each student from the 2004-2005 academic year that continued to be a student in the same school division for the 2012-2013 academic year. Beside each number that represented a student was the number of absences, number of discipline incidents, whether the student had dropped out of school or not, and the school attended for elementary school. This report to the school board is a public document and is available to the general public.

A report on the attendance, discipline, and drop-out rates of all students who were in the elementary schools of the county beginning with the 2004-2005 school year and ending five years later was prepared by the administrative staff of the school division to the School Board on October 14, 2013. This report was to inform the school board of trends in absences, discipline incidences, and drop-out rates of the high school based on which elementary school each student attended. The purpose was to determine the successful interventions that could be occurring in any of the elementary schools so it could be replicated division wide.

The treatment population of this study consisted of all of the identified students in School A. The control population consisted of a randomly selected sample of students from the other three elementary schools. Using the student numbers, the required 72 students were randomly selected to match the 72 students from School A.

After the data were gathered from the minutes, it was entered into SPSS software application for data disaggregation. Within SPSS, the ability to randomly select data was employed by selecting the schools that were not School A and copying into a new data set. This data set was then used to randomly select 72 students to compare to School A. This study examined information over a lengthy period of time which required the use of a standardized measure for successful data analysis.

Data Analysis

SPSS was used to analyze the data. Student numbers, school numbers, absences, discipline incidents, drop-out status, grade of the student in 2004-2005, and grade of the student in 2012-2013 were identified as variables. The information from the board minutes was uploaded to SPSS. In order to randomize the student population from Schools B, C, and D, the data were filtered by school.

An independent samples t-test was determined to be an acceptable test to compare the discipline incidents, attendance records, and drop-out statuses from students who had instruction in the STAR program from those that did not. The purpose of running the t-test was to determine if there was a significant statistical difference of the means between the two groups of students. This allowed the dependent variables (attendance, discipline, and dropout status) to be tested based on the independent variable (whether the school offered the program or not) to determine statistical significance.

SPSS software was used to conduct the analysis for this study. The null hypothesis was that no differences occur between the two groups of students in reference to discipline, attendance, and drop-out status. If the data shows otherwise, the null hypothesis would be

rejected and the alternative hypothesis would be that high school students who have received instruction in the STAR program for four years show more self-regulation on selected measures of student behavior than students who have not received such instruction.

After running the t-test, the two-tailed significance was used to determine whether the null hypothesis would be rejected or accepted. If the significance was smaller than the probability value of 0.05, then the null hypothesis would have to be rejected because there would be a statistical significant difference showing the program works. With there being three different variables, t-tests were run showing all the dependent variables by grade level to see the effect of each.

Chapter 4

Findings

Introduction

This study focused on the long term effects of a positive behavior system on students as they progressed throughout their educational career. By looking at attendance records, discipline incidents, and drop-out status, it was determined whether there was a significant difference in those variables between students who received instruction for four years and students who did not. Schools and school divisions will be able to utilize the data to make an informed decision as to how a positive behavior support program could possibly help with student self-regulation.

Data Analysis

The main question for this study was the following: Do high school students who have received instruction in the STAR program for four years show more self-regulation on selected measures of student behavior than students who have not received such instruction? The variables tested were attendance, discipline incidents, and drop-out status. Each of the variables led to a sub-question to support the main question. Testing the data included running independent samples t-tests on each variable by grade level to determine if any statistical significance occurred between students that received the instruction (treatment population) and students that did not (control population).

Attendance. The first sub-question framed to support the main research question was as follows: Do high school students who have received instruction in the STAR program for four years have better attendance records than students who have not received such instruction based on the results of a t-test to show significant difference? An independent samples t-test was run

on the applicable data by grade level using all students in the treatment group and an equal random sampling of students in the control group.

Table 2 illustrates the descriptive statistics for ninth grade students. The mean attendance rate of students in the control group was 8.40 days absent per student with a standard deviation of 8.744. The mean attendance rate of students in the treatment group was less with 7.55 days absent per student and a standard deviation of 6.669. In Table 3, 18 tenth grade students in the treatment group had a mean of 9.22 days absent with a standard deviation of 9.607 which was greater than the control group. The 18 students in the control group had a mean of 8.17 days absent with a standard deviation of 6.176. All 17 eleventh grade students in the treatment group had a mean of 5.88 days absent with a standard deviation of 6.264. The 17 randomly selected students in the control group had a greater mean of 6.53 days absent per student with a standard deviation of 5.959 as seen in Table 4. Seniors in the treatment group numbered 17 students with a mean of 5.06 days absent and a standard deviation of 6.329. The 17 seniors in the randomly selected control group had a mean of 10.82 days absent per student which is larger and a standard deviation of 6.347 as shown in Table 5.

Table 2

Ninth Grade Attendance Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Attendance	No	20	8.40	8.744	1.955
	Yes	20	7.55	6.669	1.491

Table 3

Tenth Grade Attendance Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Attendance	No	18	8.17	6.176	1.456
	Yes	18	9.22	9.607	2.264

Table 4

Eleventh Grade Attendance Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Attendance	No	17	6.53	5.959	1.445
	Yes	17	5.88	6.264	1.519

Table 5

Twelfth Grade Attendance Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Attendance	No	17	10.82	6.347	1.539
	Yes	17	5.06	6.329	1.535

The data from the independent samples t-tests are shown in Tables 6 through 9. Table 6 showed the comparison of the treatment population of 20 ninth grade students to the randomly selected control population. There was not a significant difference in attendance for ninth grade students that were instructed in the STAR program (M=7.55, SD=6.67) and students not instructed in the STAR program (M=8.40, SD=8.74); $t(38)=3.46$, $p=0.731$.

In Table 7, the treatment population of 18 tenth grade students was compared to the randomly selected control population. A significant difference in attendance was not found for the treatment population (M=9.22, SD=0.61) and control population (M=8.17, SD=6.18); $t(34)=$

-0.392, $p=0.697$. Table 8 showed the eleventh grade comparison of 17 students in the treatment population to the control population students. The treatment population showed ($M=5.88$, $SD=8.26$) while the control population showed ($M=6.53$, $SD=5.96$); $t(32)=0.729$, $p=0.472$. Twelfth graders were compared in Table 9 based on 17 students in the treatment population and a matching randomly selected population. A significant difference was found between the students that were instructed in the STAR program ($M=5.06$, $SD=6.33$) and students not instructed in the STAR program ($M=10.82$, $SD=6.35$); $t(32)=2.65$, $p=0.012$. None of the other grade levels showed statistical significance for attendance based on whether the student had been in the treatment population or the control population.

Table 6

Ninth Grade Attendance Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Attendance	Equal variances assumed	.104	.749	.346	38	.731	.850	2.459
	Equal variances not assumed			.346	35.515	.732	.850	2.459

Table 7

Tenth Grade Attendance Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Attendance	Equal variances assumed	1.943	.172	-.392	34	.697	-1.056	2.692
	Equal variances not assumed			-.392	29.002	.698	-1.056	2.692

Table 8

Eleventh Grade Attendance Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Attendance	Equal variances assumed	.459	.503	.729	32	.472	1.765	2.422
	Equal variances not assumed			.729	30.61	.472	1.765	2.422

Table 9

Twelfth Grade Attendance Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Attendance	Equal variances assumed	.489	.490	2.652	32	.012	5.765	2.174
	Equal variances not assumed			2.652	32	.012	5.765	2.174

Discipline. The second sub-question to support the research question is as follows: Do high school students who have received instruction in the STAR program for four years exhibit fewer disciplinary incidents than students who have not received such instruction based on the results of a t-test to show significant difference? In looking at the descriptive statistics in Table 10, the ninth grade students in the treatment population had a mean of 1.25 for discipline incidents per student with a standard deviation of 2.845. The control population had a larger mean of 1.80 incidents per student with a standard deviation of 2.845. According to Table 11, the tenth grade statistics show a mean of 0.44 discipline incidents per student in the treatment population with a standard deviation of 0.856. The control population shows a greater mean of 0.78 incidents per student with a standard deviation of 1.06. For the eleventh grade, as shown in Table 12, the descriptive statistics showed a mean of 0.18 discipline incidents per student with a standard deviation of 0.529 for the control population. The treatment population showed a greater mean of 0.41 discipline incidents per student and a standard deviation of 0.618. In Table

13, twelfth grade students in the control population showed a mean of 0.18 discipline incidents per student and a standard deviation of 0.393. The treatment population showed a greater mean of 0.41 discipline incidents per student and a standard deviation of 1.004.

Table 10

Ninth Grade Discipline Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Discipline	No	20	1.80	4.112	.919
	Yes	20	1.25	2.845	.636

Table 11

Tenth Grade Discipline Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Discipline	No	18	.78	1.060	.250
	Yes	18	.44	.856	.202

Table 12

Eleventh Grade Discipline Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Discipline	No	17	.18	.529	.128
	Yes	17	.41	.618	.150

Table 13

Twelfth Grade Discipline Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Discipline	No	17	.18	.393	.095
	Yes	17	.41	1.004	.243

To fully answer the sub-question, an independent samples t-test was run to determine whether any statistical significance occurred. Table 14 showed the comparison of the ninth grade treatment population (M=1.25, SD=2.85) and control population (M=1.80, SD=4.11); $t(38)=4.92$, $p=0.626$. The value was not indicative of statistical significance. In Table 15, tenth graders were compared. There was not a statistical difference for discipline incidents between students instructed in the STAR program (M=0.44, SD=0.856) and students not instructed in the STAR program (M=0.78, SD=1.06); $t(34)=1.04$, $p=0.307$. Eleventh grade students were compared in Table 16 with students instructed in the program (M=0.41, SD=0.62) and students not instructed (M=0.18, SD=0.53); $t(32)=-1.19$, $p=0.242$. The value does not show a statistical significance between the control and treatment populations. For twelfth grade students, a statistical difference was not shown for discipline incidents between the treatment population (M=0.41, SD=1.00) and the control population (M=0.18, SD=0.39); $t(32)=-.90$, $p=0.375$ according to Table 17.

Table 14

Ninth Grade Discipline Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Discipline	Equal variances assumed	.786	.381	.492	38	.626	.550	1.118
	Equal variances not assumed			.492	33.799	.626	.550	1.118

Table 15

Tenth Grade Discipline Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Discipline	Equal variances assumed	1.413	.243	1.038	34	.307	.333	.321
	Equal variances not assumed			1.038	32.547	.307	.333	.321

Table 16

Eleventh Grade Discipline Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Discipline	Equal variances assumed	3.244	.081	-1.193	32	.242	-.235	.197
	Equal variances not assumed			-1.193	31.244	.242	-.235	.197

Table 17

Twelfth Grade Discipline Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
Discipline		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
		Equal variances assumed	3.005	.093	-.900	32	.375	-.235
Equal variances not assumed				-.900	20.793	.378	-.235	.261

Drop-Out Status. Sub-question three states: Do fewer high school students who have received instruction in the STAR program for four years drop out of school than students who have not received such instruction based on the results of a t-test to show significant difference? In reviewing the statistics, only twelfth graders had seven drop-outs in 2013. The treatment population had two drop-outs, while the total control population had a total of five drop-outs in 2013. Once the random sampling had occurred, the mean of drop-outs for the control population was .06 with a standard deviation of .243 as shown in Table 18. The treatment population had a mean of .24 with a standard deviation of .437. Table 19 shows the independent sample t-test for twelfth grade drop-outs. With an F value of 10.618 and a sig value of 0.03, there was a large variance. Therefore, equal variances were not assumed which resulted in the second row of numbers being reported. There was not a statistical difference between students that were instructed in the STAR program (M=0.24, SD=0.44) and students that were not instructed in the STAR program (M=0.06, SD=0.24); $t(25)=-1.46$, $p=0.16$.

Table 18

Twelfth Grade Drop-Out Statistics

	Program	N	Mean	Std.	Std. Error
				Deviation	Mean
Drop-Out	No	17	.06	.243	.059
	Yes	17	.24	.437	.106

Table 19

Twelfth Grade Drop-Out Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Difference	Std. Error Difference
Drop-Out	Equal variances assumed	10.618	.003	-1.455	32	.155	-.176	.121
	Equal variances not assumed			-1.455	24.995	.158	-.176	.121

Large Group Statistics. In an effort to further enhance the validity of the findings, more independent samples t-tests were run. The first group of statistics compared students that were in the respective grades in the school year 2012-2013. To see if a larger population made a difference in findings, all students that had been in the ninth grade at some point between the years of 2009-2010 and 2012-2013 were placed together in a data set. There were 69 students in ninth grade in the treatment population. Of the 390 students in the control population, 69 were randomly selected. Ninth grade had no drop-outs, but the attendance and discipline incidents were analyzed. Attendance showed a lesser mean for students that had been instructed in the

STAR program with the average days missed being 7.52 with a standard deviation of 6.22 according to Table 20. Students not instructed in the program missed an average of 8.16 days with a standard deviation of 8.51. Results of discipline incidents revealed similar results. The treatment population had a mean of 0.88 incidents per student with a standard deviation of 1.73. The control population had a higher mean of 1.29 incidents per student with a standard deviation of 3.31. Table 21 showed the results of the independent samples t-test which revealed there was not a statistical difference for attendance between students that were instructed in the STAR program and students that were not instructed in the STAR program; $t(136)=5.03$, $p=0.62$. With an F value of 4.81 and a sig value of 0.03, there was a large variance. Therefore, equal variances were not assumed which resulted in the second row of numbers being reported. Discipline incidents showed there was not a statistical difference between students instructed in the STAR program and students that were not; $t(102.5)=-0.90$, $p=0.37$.

Table 20

Large Ninth Grade Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Attendance	No	69	8.16	8.509	1.024
	Yes	69	7.52	6.220	.749
Discipline	No	69	1.29	3.313	.399
	Yes	69	.88	1.728	.208

Table 21

Large Ninth Grade Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Attendance	Equal variances assumed	1.444	.232	.503	136	.616	.638	1.269
	Equal variances not assumed			.503	124.536	.616	.638	1.269
Discipline	Equal variances assumed	4.810	.030	.902	136	.369	.406	.450
	Equal variances not assumed			.902	102.459	.369	.406	.450

For the larger group of tenth grade statistics, there were 52 students that were in the tenth grade during the years of 2009-2010 through 2012-2013 in the treatment population. Of the 308 students in the control population, 52 were randomly selected. In tenth grade, students that were instructed in the STAR program ended up having a larger mean for attendance (M=7.94, SD=7.99) than students not instructed (M=5.54, SD=4.97) as shown in Table 22. The same phenomenon occurred for discipline incidents with the treatment population having a larger mean for discipline incidents (M=0.65, SD=1.30) than the control population (M=0.46, SD=0.80). Once again the drop-out status showed the same type of results. In the randomly

selected population of tenth graders in the control population there were no drop-outs, while the treatment group had a mean of 0.02 with a standard deviation of 0.139. Due to the large variance, F values of 8.80, 4.30, and 4.16 and sig values of 0.004, 0.041, and 0.044 for attendance, discipline, and drop-out status respectively, the second row of numbers must be used when reading Table 23. The independent sample t-test showed no significant differences for attendance $t(85.29)=-1.84$, $p=0.069$, discipline $t(85.13)=-0.91$, $p=0.366$, or drop-out status $t(51)=-1.00$, $p=0.322$.

Table 22

Large Tenth Grade Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Attendance	No	52	5.54	4.968	.689
	Yes	52	7.94	7.994	1.109
Discipline	No	52	.46	.803	.111
	Yes	52	.65	1.297	.180
DropOut	No	52	.00	.000	.000
	Yes	52	.02	.139	.019

Table 23

Large Tenth Grade Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Attendance	Equal variances assumed	8.801	.004	-1.842	102	.068	-2.404	1.305
	Equal variances not assumed			-1.842	85.287	.069	-2.404	1.305
Discipline	Equal variances assumed	4.295	.041	-.909	102	.365	-.192	.212
	Equal variances not assumed			-.909	85.125	.366	-.192	.212
DropOut	Equal variances assumed	4.162	.044	-1.000	102	.320	-.019	.019
	Equal variances not assumed			-1.000	51.000	.322	-.019	.019

For the large group of eleventh graders, there were a total of 33 students that had been in eleventh grade at some point between 2009-2010 and 2012-2013 in the treatment population. Of the 213 total students in eleventh grade for the control population, 33 were randomly selected.

Statistics for attendance, discipline, and drop-out status were reviewed. According to Table 24, attendance for students that were instructed in the STAR program had a lesser mean (M=7.94, SD=7.79) than students that were not instructed (M=9.52, SD=9.88). Discipline also showed fewer incidents for students instructed (M=0.45, SD=0.83) than students that were not (M=0.91, SD=2.96). Drop-out status had zero students that were selected in the control population so the mean was higher in the treatment population (M=0.03, SD=0.17). Table 25 has the results of the independent samples t-test. There was not a significant difference between students instructed in the STAR program and students that were not in attendance $t(64)=0.72, p=0.47$; discipline $t(64)=0.85, p=0.40$; or drop-out status $t(32)=-1.00, p=0.33$. Once again the variability was high in drop-out status which gave an F value of 4.26 and a sig value of 0.43 to indicate reading the second row of numbers since equal variances were not assumed.

Table 24

Large Eleventh Grade Statistics

	Program	N	Mean	Std. Deviation	Std. Error Mean
Attendance	No	33	9.52	9.878	1.719
	Yes	33	7.94	7.786	1.355
Discipline	No	33	.91	2.962	.516
	Yes	33	.45	.833	.145
DropOut	No	33	.00	.000	.000
	Yes	33	.03	.174	.030

Table 25

Large Eleventh Grade Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Attendance	Equal variances assumed	.663	.418	.720	64	.474	1.576	2.189
	Equal variances not assumed			.720	60.689	.474	1.576	2.189
Discipline	Equal variances assumed	3.769	.057	.849	64	.399	.455	.536
	Equal variances not assumed			.849	37.026	.402	.455	.536
DropOut	Equal variances assumed	4.262	.043	-1.000	64	.321	-.030	.030
	Equal variances not assumed			-1.000	32.000	.325	-.030	.030

Twelfth grade statistics did not need to be combined and re-run because there was only one group of students in the twelfth grade between 2009-2010 and 2012-2013 that had four years of

instruction in the STAR program. That group of students was used in the original statistical analyses.

Summary

Descriptive statistics were used to first examine attendance, discipline incidents, and drop-out status for ninth through twelfth grade students. Based on the results, the mean number of days missed by students in the treatment population was less than those days missed by students in the control population for ninth, tenth, and eleventh grade students for the 2012-2013 school year. Fewer discipline incidents per student were also noted for ninth and tenth grade for the treatment population. However, more discipline incidents were noted for the eleventh and twelfth grade treatment population. There were more drop-outs for the treatment population which used all students in the school than the control population which was randomly sampled.

In the large group statistics, every ninth, tenth, and eleventh grader for the school years of 2009-2010 through 2012-2013, a larger sample of students was used to validate the test results of the smaller groups. The days missed were fewer for ninth and eleventh graders for the treatment population. Discipline incidents were fewer for ninth and eleventh graders for the treatment population. All of the descriptive statistics for tenth grade showed as better for the control population instead of the treatment population. Drop-out status was also better for the control population. However, all students are accounted for in the treatment population whereas selected students are used in the control population. Twelfth grade remained the same because there was only one twelfth grade class during the 2009-2010 through 2012-2013 school years that had four years of instruction in the STAR program.

The findings of the independent samples t-test showed no significant differences in attendance, discipline, or drop-out status in ninth, tenth, or eleventh grade students both in small

groups and large groups. There was also no significant difference for discipline and drop-out status for twelfth grade. However, there was a significant difference for twelfth grade students in attendance with a p value of 0.012.

Chapter 5

Discussion, Conclusion, and Recommendation for Future Studies

Introduction

The purpose of chapter five is to discuss the findings from chapter four in an effort to address the main research question: Do high school students who have received instruction in the STAR program for four years show more self-regulation on selected measures of student behavior than students who have not received such instruction? Sub-questions, which refer to attendance, discipline incidents, and drop-out status, will also be addressed. After discussion of the findings, a conclusion will be derived from the data. Chapter five will conclude with recommendations for future studies.

Summary of Major Findings

Means were used to determine if there was a relationship between the students that were instructed in the STAR program and attendance, discipline incidents, and drop-out status. Statistics from all students at each of the PK-7 elementary schools in kindergarten through fourth grade during the school year of 2004-2005 were used. The students were tracked through their high school careers in ninth through twelfth grade and attendance, discipline incidents, and drop-out status were recorded. This report was shared at a school board meeting. All students from the treatment school were used while a randomly selected group of students in the control schools were used. The means of each category were compared between the treatment and control populations using an independent samples t-test. Descriptive statistics were also used to compare the two populations.

Finding #1. There were no significant differences noted between the control and treatment group with regard to discipline and attendance in ninth grade students in the school year 2012-2013. Though studies have shown a difference for positive behavior support systems in the short-term, there were no studies showing a long-term effect. However, the descriptive statistics showed fewer days missed and fewer discipline incidents for students that had been in the STAR program.

Finding #2. There were no significant differences between the treatment and control groups for attendance or discipline incidents for tenth grade students in the school year 2012-2013. In the descriptive statistics, there were more days missed by students in the treatment group than the control population. There were fewer discipline incidents for students in the treatment group.

Finding #3. There were no significant differences noted between the control and treatment group with regard to discipline and attendance in eleventh grade students in the school year 2012-2013.. The descriptive statistics showed fewer days missed for the treatment population but greater discipline incidents.

Finding #4. There were no significant differences between the treatment and control groups for discipline incidents or drop-out status for twelfth grade students in the 2012-2013 school year. There was a significant difference in attendance. Students in the treatment group missed fewer days and the significance was noted with a p value of 0.012.

Finding #5. In an effort to verify the findings above since they were relatively small populations from which to choose, all students that had been in each grade level during the years of 2009-2010 through 2012-2013 were then used for statistical analyses. There were no

significant differences between students that had been instructed in the STAR program and students that were not instructed in the STAR program for attendance, discipline incidents, or drop-out status for ninth, tenth, and eleventh grade students. Twelfth grade statistics were not re-run because there was only one class of twelfth graders which was for the school year of 2012-2013 and those statistics were reported on in finding #4.

Conclusion

The purpose of this study was to determine if high school students who had received instruction in the STAR program for four years in the elementary school demonstrated more self-regulation on selected measures of student behavior than students who have not received such instruction. Selected measures of behavior included attendance, discipline incidents, and drop-out status. Of the total students used in the study, only one selected measure in one grade showed a statistical significance.

Descriptive statistics showed fewer absences for students that had been instructed in the STAR program for ninth, eleventh, and twelfth grade students using 2012-2013 school year data and the cumulative years' data. Discipline incidents were fewer for students in the STAR program for ninth and tenth grade students for the 2012-2013 school year, but higher for the eleventh and twelfth grade students. Using the cumulative data, discipline incidents were still lower for the ninth grade students, but changed for the tenth and eleventh grade students with tenth grade having a higher number of incidents and eleventh grade being lower. Drop-out statistics were higher for students in the treatment population regardless of whether the 2012-2013 data were used or the cumulative data. Therefore the conclusion of this study is the STAR program could be considered successful as far as overall better attendance, even statistically significant for twelfth graders. The younger students seemed more inclined to follow the tenets

of the STAR program even into their high school careers. With further study to definitively correlate this program to conditions for success for students, more information could help to bolster this study and refine the program for further success. Statistically speaking, the program does not show greater success with students in all three dependent variables measured in this study.

Discussion

The data in this study indicated there was not a statistically significant relationship between the students that have been instructed in the STAR program and their self-regulation of behavior for attendance, discipline, and drop-out status. However, there was a statistically significant relationship between twelfth grade students that had been instructed in the STAR program and fewer absences.

By using two different groups of students from which to draw the randomly selected control population, some differences were noted. With the ninth grade statistics, an assumption could be made that the program could help encourage ninth graders to better self-regulate their behavior based on the trending behavior between both groups of students. Based on the data, a greater tendency for creating conditions for success for students was noticed such as fewer absences, fewer disciplinary incidents, and no drop-outs, than for students without the benefit of a positive behavior support program.

Since the only trending shown for tenth grade students was a higher rate of absences, no assumption can be made about the success of the STAR program on self-regulatory behavior. Tenth graders could simply be enjoying more of the freedom associated with being in a larger school environment, farther from individual communities and parents. This phenomenon could be compared to a student going to college for the first time. Being farther from parents and other

adults that know the child, having more freedom, and no one to answer to but themselves causes some students to go from being a good student to seeing just how little they can do and still be successful. Many colleges have built in systems to help correct the common problem. An argument could be made that the same thing is happening with tenth grade students on a smaller scale in this particular environment, thus no positive change in behavior, attendance, and drop-out status overall.

Eleventh grade student statistics were similar to the tenth grade as far as trending. The difference would be the attendance was better for eleventh graders that participated in the STAR program. Discipline and drop-out status were conflicting. An argument could be made that based on the previous postulation on tenth grade behavior, eleventh graders are starting to see the seriousness of what happens if students do not self-regulate. Realizing the end of their high school career is coming quickly; students need to make sure they are at school and preparing for the future. Much like a college freshman quickly realizes that to continue to have a chance at success for college they have to start attending classes and studying, eleventh graders realize they need to start paying a little more attention to their own school career. Therefore, attendance gets better for those that want to continue their education. Discipline and drop-out status may be conflicting because students that do not have a desire to further their education either continue to get in trouble then drop out of school or just drop out of school.

Twelfth grade statistics showed a significant difference for attendance. Students instructed in the STAR program had better attendance than students that were not instructed. Discipline incidents were higher for STAR students according to descriptive statistics which indicates no positive correlation for students in the STAR program. Drop-out statistics were also higher for STAR students indicating no positive effect. Still using the theory above, a lot of

success in school is based on being in school. For students who have no desire to be there, it can become a waiting game until they are 18 and legally able to drop out of school. This seemed to happen with several students both instructed in the STAR program and not. Since all students were used in the treatment population and only a random sample in the control population, not all drop-outs were accounted for in the total population. Perhaps at this time in a student's high school career, the importance of attendance for completion of high school has been imprinted.

As a student ready to graduate and be a part of the world, the realization of how important attendance is in a successful educational career could come into play. The maturity of the student may allow them to buckle down and go back to the lessons learned in self-regulation at their elementary school. However, discipline incidents and drop-out status were not as good for students in the treatment group as opposed to students in the control group. Discipline and drop-out status seemed to have a perceived relationship. As a student increased in discipline incidents, the likelihood of becoming a drop-out seemed to increase. Another perception noted was the transience of students in the treatment school with the number of drop-outs. Of the four schools evaluated, the treatment school had the highest percentage of students that moved in and out of the school. Students that move on a regular basis may have a harder time developing relationships with other students and adults which could lead to a disconnect with school and society. If the student is struggling academically and socially, the odds of becoming a drop-out would increase.

All students in the treatment population that had been instructed in the STAR program for four years were used for statistical purposes; whereas only a portion of students were used from the control population. This seemed to create an unfair advantage for the control school because all the students were not used. Therefore, not all the students that had dropped out of school

were accounted for in the control population. However, all students were accounted for in the treatment population. Another point of discussion would be that perhaps attendance, discipline, and drop-out status do not accurately measure the benefits of the STAR program. Perhaps there are more intangible influences of the STAR program that are difficult to measure like so many aspects of education. Effectiveness of programs and people in education employ such a conglomeration of variables that it is difficult to determine which variables are paramount for change or if it is a combination. In a field such as education, experimental conditions cannot be used ethically because our job is to provide the equality of opportunity in education.

When evaluating programs, both process indicators and outcome indicators are typically used to determine success. These indicators are usually determined during the planning stages of the program that will be implemented. Short term indicators were used at the elementary level to determine success of the program during the years of fourth through seventh grade. If the same group of stakeholders that help to implement the program every day at the elementary school looked further out to determine success longitudinally, the question becomes whether that would change the course of the program. These stakeholders could be personnel from the high school, parents of children in high school and elementary school, and personnel from elementary school. Seeing what makes students successful in the high school setting, the STAR program could be redesigned to specifically target those behaviors. Perseverance and grit are two characteristics that educators and researchers are finding to be common in people that succeed in various fields. Using that information, positive behavior supports could be employed for times that students utilized these attributes. Using the outcome indicators longitudinally would help to determine how to accurately measure the success of the program for students in later grades.

Informal evaluation is ongoing in education. A more formal approach may help to focus the program evaluation as to what is important to measure, how to collect the measurement, and how to use the information gathered. Gathering a group of stakeholders in the division, not just the school using the program, could help to delineate how this program may help students to have a better chance at being successful in school. In a more accountable society, education needs to have focused evaluations to show the importance of what is known to be true. Education of students is a serious job and what is necessary to provide the most beneficial environment for educational success must be considered. Both quantity (numbers) and quality (stories) can be measured in a program evaluation. Quantity is measured in this study; a quality measure would also be beneficial.

Recommendations for Further Study

This study sought to look at a positive behavior support system in a longitudinal fashion. Currently, many studies show the success of such a system in the same environment with the same program being used throughout the length of the study. In an effort to see if the lessons learned from the program carried through with students into a different environment, this study was undertaken.

Future studies could include the students in the eighth grade as part of the population. This would allow the capability of seeing whether the benefits of the program are stronger if the student is closer to the last grade of the year they were instructed. Another possibility would be to include all data from the years of the program through graduation per student to see if there are further trends.

Additional studies could include academic achievement as well as other variables to measure success. Having a larger sample size would increase the likelihood of a more robust study. More school divisions being included in the study would help that possibility. An addition of a qualitative aspect for a mixed methods study could also be recommended to get the feel of the community on the success or lack thereof of the program, including throughout the students' high school careers. This qualitative aspect would also allow teachers and administrators the opportunity to determine whether they observe differences in students based on whether they have been instructed in the STAR program. Surveys, questionnaires, and/or interviews could be employed.

Another interesting aspect would be to delve further into the reasons for the number of drop-outs. As noted earlier in the discussion section, a theory would be the transient nature of students and discipline incidents. A study investigating that possibility would help to increase the body of research.

References

- Bohanon, H., Fenning, P., Carney, K. L., Minnis-Kim, M. J., Anderson-Harriss, S., Moroz, K., ..., Pigott, T. D. (2006). Schoolwide application of positive behavior support in an urban high school: A case study. *Journal of Positive Behavior Interventions, 8*(5), 131-145.
- Bradshaw, C.P., Koth, C.W., Bevans, K.B., Ialongo, N., & Leaf, P.J. (2008). The impact of school-wide positive behavioral interventions and supports (PBIS) on the organizational health of elementary schools. *School Psychology Quarterly, 23* (4), 462 – 473.
- Center for Effective Collaboration and Practice. Retrieved from <http://cecp.air.org/resources/recon/art2.asp>.
- Christle, C., Nelson, C.M., & Jolivette, K. (2004). School characteristics related to the use of suspension. *Education and Treatment of Children, 27* (4), 509 – 526.
- Daunic, A.P., Smith, S.W., Garvan, C.W., Barber, B.R., Becker, M.K., Peters, C., ...Naranjo, A.H. (2012). Reducing developmental risk for emotional/behavioral problems: A randomized controlled trial examining the Tools for Getting Along curriculum. *Journal of School Psychology, 50*, 149 – 166.
- Elias, M. J. & Tobias, S. E. (1996). *Social problem-solving: Interventions in the schools*. New York: The Guilford Press.
- Floyd County School Board (1992). *Floyd county school board policy manual*. Retrieved from Floyd County School Division website: <http://www.floyd.k12.va.us/Home/our-district/policy-manual>

- Gajda, Rebecca & Jennifer Jewiss (2004). Thinking about how to evaluate your program? these strategies will get you started. *Practical Assessment, Research & Evaluation*, 9(8). Retrieved December 26, 2013 from <http://PAREonline.net/getvn.asp?v=9&n=8>
- Levin J. & Nolan, J. (1996). *Principles of classroom management* (2nd ed.). Needham Heights, MA: Allyn and Bacon.
- Luiselli, J. K., Putnam, R. F., & Sunderland, M. (2002). Longitudinal evaluation of behavior support intervention in a public middle school. *Journal of Positive Behavior Interventions*, 4(3), 182 – 188.
- Madaus, G. F., & Kellaghan, T. (2000). Models, metaphors, and definitions in evaluation. In D. Stufflebeam, G. Madaus & T. Kellaghan (Eds.), *Evaluation models: Viewpoints on educational and human services evaluation* (2nd ed.). Boston, MA: Kluwer Academic Publishers.
- McMillan, J. H. & Wergin, J. F. (2010). *Understanding and evaluating educational research* (4th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Muscott, H.S., Mann, E., Benjamin, T.B., Gately, S., New Hampshire Center for Effective Behavioral Interventions and Supports, Bell, K.E., ...Salem School District (2004). Positive behavioral interventions and supports in New Hampshire: Preliminary results of a statewide system for implementing schoolwide discipline practices. *Education and Treatment of Children*, 27 (4), 453 – 475.

Skiba, R.J. (2000). Zero tolerance, zero evidence: An analysis of school disciplinary practice.

Indiana Education Policy Center, Retrieved from website:

<http://www.indiana.edu/~safescho/ztze.pdf>.

Snyder, F., Flay, B., Vuchinich, S., Acock, A., Washburn, I., Beets, M., & Li, K. (2010). Impact of a social-emotional and character development program on school-level indicators of academic achievement, absenteeism, and disciplinary outcomes: A matched-pair, cluster-randomized, controlled trial. *Journal of Research on Educational Effectiveness*, 3 (1), 26-55.

Stufflebeam, D.L. (2001). Evaluation Models² [Monograph]. *New Directions for Evaluation*, 89, 7-98.

Taylor-Greene, S., Brown, D., Nelson, L., Longton, J., Gassman, T., Cohen, J., ... Hall, S. (1997). School-wide behavioral support: Starting the year off right. *Journal of Behavioral Education*, 7(1), 99-112.

Tyre, A., Feuerborn, L., & Pierce, J. (2011). Schoolwide intervention to reduce chronic tardiness at the middle and high school levels. *Preventing School Failure*, 55 (3), 132-139.

Warren, J. S., Bohanon-Edmonson, H. M., Turnbull, A. P., Sailor, W., Wickham, D., Griggs, P., & Beech, S. E. (2006). School-wide positive behavior support: Addressing behavior problems that impede student learning. *Educational Psychology Review*, 18, 187-198.

Appendix A



Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website <http://www.irb.vt.edu>

MEMORANDUM

DATE: October 25, 2013
TO: Glen I Earthman, Lisa A Pluska
FROM: Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)
PROTOCOL TITLE: A Study of the Longitudinal Influence of a Behavior Support Program
IRB NUMBER: 13-873

Effective October 25, 2013, the Virginia Tech Institutional Review Board (IRB) Administrator, Carmen T Papenfuss, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Exempt, under 45 CFR 46.110 category(ies) 4**
Protocol Approval Date: **October 25, 2013**
Protocol Expiration Date: **N/A**
Continuing Review Due Date*: **N/A**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

Date*	OSP Number	Sponsor	Grant Comparison Conducted?

* Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.

Appendix B

Informed Consent

Title: *A Study of the Longitudinal Influence of a Behavioral Support Program*

Investigators: Lisa Pluska

I am asking you to participate in a research study. Please take your time to read the information below and feel free to ask any questions before signing this document.

Purpose: The purpose of this study is to track data at a student level and compare one treated population with a random sample from three control populations attending the same high school. All schools are located in a rural county in Virginia with similar demographics. The main research question of this study is whether high school students who have received instruction in a program for four years show more self-regulation on selected measures of student behavior than students who have not received such instruction. The variables used are attendance, discipline incidents, and drop-out status.

Procedures: I am requesting permission to use information provided to the Floyd County School Board on October 14, 2013. Though the Floyd County School Board Policy JHDA states that consent is not necessary in the event the research is conducted to compare or show effectiveness of instructional techniques, curricula, or classroom management methods if subjects cannot be identified, I would still like to formally ask permission. The data obtained will be used for statistical analyses to determine the efficacy of the program.

Risks to Participation: Since no student is identifiable in the study, there are no risks to participation anticipated.

Benefits to Participants: You will not directly benefit from this study. However, we hope the information learned from this study may benefit school divisions in our understanding of how behavior can be self-regulated with the correct instruction.

Alternatives to Participation: Participation in this study is voluntary. You may withdraw from study participation at anytime without any penalty.

Confidentiality: There is no identifiable information in this study, therefore, confidentiality is not an issue.

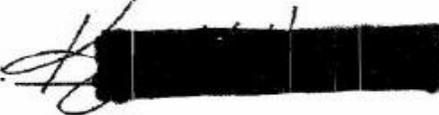
Questions/Concerns: If you have any questions or concerns about the study, please contact Lisa Pluska at 540-745-4014 or lpluska@gmail.com.

Consent

Subject

The research project and the procedures have been explained to me. I agree to participate in this study. My participation is voluntary and I do not have to sign this form if I do not want to be part of this research project. I will receive a copy of this consent form for my records.

Signature of Subject:



Date: 1.22.2014

Signature of the Person Obtaining Consent:



Date: 1/22/14