Spring 5-2015

Reducing Disruptive Behavior in High School: The Good Behavior Game

William Blake Ford
University of Southern Mississippi

The University of Southern Mississippi

REDUCING DISRUPTIVE BEHAVIOR IN HIGH SCHOOL:

THE GOOD BEHAVIOR GAME

by

William Blake Ford

A Thesis
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

Approved:

Dr. Daniel H. Tingstrom
Committee Chair

Dr. Keith C. Radley

Dr. Brad A. Dufrene

Dr. Karen S. Coats
Dean of the Graduate School

May 2015

ABSTRACT

REDUCING DISRUPTIVE BEHAVIOR IN HIGH SCHOOL:

THE GOOD BEHAVIOR GAME

by William Blake Ford

May 2015

Disruptive behavior in the classroom setting negatively impacts the learning process in various ways, interfering with the educational process of individual students, the teacher, and/or the class as a whole. Class-wide levels of disruptive behaviors worsen these impacts and are often related to problems with a teacher's classroom management techniques and abilities. Group contingency interventions, such as the Good Behavior Game (GBG), are often used to provide teachers with evidence based management strategies while improving student behavior in the class. Furthermore, group contingency interventions, such as the GBG, can be conceptualized as Tier I or Tier II interventions within a School Wide Positive Behavior Interventions and Supports system. The present study evaluated the effects of a streamlined, no-teams version of the GBG in general education high school classrooms. While the GBG has been assessed in a variety of settings, it has limited empirical evidence for use with secondary level students, indicating a significant need for such an evaluation. The effects of the intervention were determined with an A/B/A/B single case withdrawal design in three classrooms (9^{th}, 10^{th} and 11^{th} grade). The results of the study indicate that the no-team version of the GBG was effective at reducing levels of disruptive behavior and increasing levels of academic engagement in each classroom. Furthermore, the intervention procedures were found to be acceptable to each of the teachers, indicating that the streamlined version of the GBG is an efficient and effective strategy for improving student behavior.

ACKNOWLEDGMENTS

This project could not have been completed without the help of many individuals. First, I would like to thank my committee chair, Dr. Daniel Tingstrom, for his extensive support, advice, and work throughout this project. This project would have never been completed without his help. I would also like to thank my other committee members, Dr. Brad Dufrene and Dr. Keith Radley for their advice and support. Special thanks is also afforded to Allison Battaglia, Kayla Bayes, Ashley Murphy, and Emily Ness for their help with data collection and to Melissa McHugh and Hannah Cavell for assistance with finding participants. Lastly, I would like to thank the teachers and students for their participation in the project.

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF ILLUSTRATIONS

Figure

CHAPTER I

INTRODUCTION

Disruptive behavior in the classroom setting negatively impacts the learning process in various ways, interfering with the educational process of individual students, the teacher, and/or the class as a whole (Higgins, Williams, & McLaughlin, 2001). Common behavioral problems include being out of seat, talking out/yelling, inattentiveness, playing with objects, hyperactivity, and aggressive acts. Behavioral problems in the classroom generally result in a loss of instruction time because the teacher must attend to the problem, thereby potentially affecting the academic success of the classroom (Luiselli, Putnam, & Sunderland, 2002). Furthermore, it has been determined that on average, a discipline referral results in 20 minutes of lost instruction time for the child, and costs the administrator an average of 10 minutes to process a regular referral, and 45 minutes to process a suspension (Scott & Barratt, 2004). Suspension length generally ranges from one to five days and varies from case to case, but also contributes to a significant loss of instruction time (Scott & Barrett). In a 1997 study, Skiba, Peterson, & Williams identified common minor disruptive behaviors, such as noncompliance, disrespect, and talking out/inappropriate language that are major contributors to both office discipline referrals and suspensions. Because research has shown that a teacher's classroom management procedures and rates of disruptive behavior are related (Reinke, Herman, & Stormont, 2013), it is crucial to the success of both students and teachers that a system be in place to promote classroom management.

Hawe, Tuck, Manthei, Adiar, and Moore (2000) and Clunies-Ross, Little, and Kienhuis (2008) both noted that disruptive classroom behavior plays a major role in

teachers' levels of stress and discontent and also contributes to teachers leaving the field (Southern Poverty Law Center, 2008). According to Maag (2002) and Reinke, Herman, and Stormont (2013), teachers feel that they receive too little training in classroom management, and express a desire to receive more classroom management training and strategies. Furthermore, Kratochwill (2009) reported that in a 2006 survey teachers rated "help with classroom management and instructional skills" as their greatest need.

Classroom management issues and problem behaviors are also negatively associated with teacher retention. A national survey (Public Agenda, 2004) reported that 76% of primarily middle and high school teachers reported that discipline problems interfere with teaching, and that they would be able to teach more effectively if such problems were not so prevalent. The U.S. Department of Education (2005) also reported that 44% of teachers and 39% of highly qualified teachers noted that problematic behavior was a reason for their departure. Clearly, the stress caused by disruptive behaviors and a lack of classroom management skills have played serious roles in the reduction of qualified and highly qualified teachers leaving the workforce.

Evertson and Emmer (1982) determined that there are three crucial components of effective classroom management: effectively instructing students on classroom rules and procedures, monitoring compliance and providing feedback, and effectively communicating information to the class. There are several interventions that have been shown to be effective in teaching classroom management skills, including ways to reinforce appropriate behavior, make data based decisions, and how to better deal with problem behaviors. Additionally, a meta-analysis conducted by Najaka, Gottfredson, and Wilson (2002) concluded that there is a moderate, positive relationship between

improvements in disruptive behavior and academic performance when effective behavioral interventions are put in place.

Unfortunately, aversive strategies are typically the primary management strategy, despite the fact that reinforcement has been shown to be a more effective technique (Maag, 2002). Aversive procedures, such as being sent out of the classroom, in-school and out-of-school suspension, corporal punishment, and student conferences, result in a loss of instructional time for the student, and cost the teachers and administrators time spent writing referrals, dealing with the behavior, or administering punishment that could be better spent educating.

Another problem with such procedures is that both the teachers and the students may be reinforced by them (Shaw & Simms, 2009). Maag (2002) describes this phenomenon as a reinforcement trap, in which the teacher is negatively reinforced by punishing the student because the obnoxious behavior stops, and the student is rewarded with attention and/or escape from task requirements/school. These problems are especially pertinent for secondary schools, which experience greater rates of disruptive behavior than primary schools (Winbinger, Katsiyannis, & Archwamenty, 2000). Also, it has been shown that teachers and administrators at secondary schools both believe in and utilize in-school and out-of-school suspension techniques much more than elementary schools (Winbinger et al., 2000). Furthermore, teachers in secondary settings offer less praise to their students, despite research suggesting increasing level of teacher praise (public and private) results in improvements in high school students' behavior (Blaze, Olmi, Mercer, Dufrene, & Tingstrom, 2014).

One strategy used to aid teachers in classroom management is implementing class-wide group contingency interventions that offer reinforcement for appropriate behavior. These strategies have been shown to be effective in controlling many of the disruptive behaviors for which students are referred. Litow and Pumroy (1975) described three forms of group contingencies: independent, dependent, and interdependent. In independent group contingencies, the rules and criterion for obtaining reinforcement are the same for the entire group, but access to reinforcement is contingent upon the behavior of the individual. An example of an independent group contingency would be an elementary school allowing any student meeting a reading goal to attend an end of the semester pizza party. Dependent group contingencies also apply the same criteria to the group, but access to reinforcement is dependent upon a certain, specific subset of the group. In a dependent group contingency intervention, if the chosen subset conforms to the criteria, the entire group receives reinforcement, and if not, no one receives it. An example of this strategy would be the entire class gaining extra recess time if a specific student completed all of his or her work class work quietly, without disrupting the class. With interdependent group contingencies, the reinforcement is again available for the entire group, but access to reinforcement for the group is dependent upon the behavior of the entire group (Tingstrom, Sterling-Turner, & Wilczynski, 2006). An example of an interdependent group contingency would be that if the class average on a quiz was 80% or higher, the class would get extra free time.

Litow and Pumroy (1975) also discussed how group contingencies are a better fit for classroom management than individual interventions, claiming they are a better use of the teachers' time, a better fit economically, and utilize peer attention as a way to reduce

problem behaviors. They also claimed that interdependent group contingencies are effective at reducing overall levels of disruptive behavior because they utilize differential reinforcement of low levels of behavior. This reinforcement strategy allows some occurrences of a problem behavior to occur, and reinforcement is presented as long as a criterion is not surpassed. Furthermore, classes implementing class wide interventions are more likely to result in positive interactions between teachers and students while reducing disruptive behaviors (Conroy, Sutherland, & Snyder, 2008). In a classic study, Gresham and Gresham (1982) compared the three group contingencies using an A/B/C/D/A/B/C/D design. While all three types improved classroom behavior, the dependent and interdependent contingencies had greater effects on reducing behavior than the independent group contingency. The following review will focus on a specific version of an interdependent group contingency intervention known as the Good Behavior Game (GBG; Barrish, Saunders, & Wolf, 1969) that is aimed at reducing disruptive behavior.

The Good Behavior Game

In the original study, Barrish et al. (1969) intervened in a fourth grade classroom engaging in what the teacher considered excessive talking and out of seat behavior. The researchers divided the class into two teams, and the teacher explained that they were going to play a game. Daily, the teacher announced and explained the classroom rules, and told the class that a violation of a rule would count as a point against the team. The teacher put both team names on the chalk board, and when a rule violation occurred, the team would earn a mark. When giving a team a mark, the teacher would explain why the mark was earned (i.e., what rule had been broken), and provide an alternate behavior. The team with the fewest marks at the end of the game period (which lasted one hour),

received a reward at the end of the day. A team could also earn the reinforcer for remaining under the criterion of five marks during the period (this way, both teams have a chance to win). The winning team(s) would get to wear victory tags, put a star by each of its members' names on the winner's chart, line up first for lunch if one team won or early if both teams won, and take part in an end of the day 30-min free time during which the team(s) would have special projects, while the loosing team would continue class work. The study used an A/B/A/B design, and resulted in substantial reductions in disruptive behavior during treatment phases.

The original study consisted of 5 major components: Splitting the class into teams, announcing classroom rules, explaining the ways for the team(s) to win (either having fewest marks or being below the set criterion), marking points for teams when a team member engages in a disruptive behavior (violates a rule), and reinforcing the winning team(s) with a pre-determined, known reinforcer. Also, the Game allows the teacher to utilize the three components of classroom management described by Evertson and Emmer (1982) (i.e., effectively instructing students of classroom rules and procedures, monitoring compliance and providing feedback, and effectively communicating information to the class).

The GBG also teaches instructors how to attend to the behaviors of the class as a whole, rather than focusing on an individual child's behavior, which has been noted to be a problem with classroom management (Tillery, Varjas, Meyers, & Collins, 2010). Since the original study, numerous investigations have found the GBG and its variations effective with a variety of populations, across various settings, and for a number of target

behaviors (Tingstrom et al., 2006). The following review will examine the effects of the GBG and its variations across multiple populations and settings.

GBG with Young Students

The majority of studies using the GBG have occurred in schools with younger children, primarily in preschool and elementary classrooms (Barrish et al., 1969; Davies & White, 2000; Gresham & Gresham, 1982; Harris & Sherman, 1973; Hunt, 2010; Hunt, 2012; Kelshaw-Levering, Sterling-Turner, Henry, & Skinner, 2000; Leflot, Lier, Onghena, & Colpin, 2010; McCurdy, Lannie, & Barbdabas, 2009; Medland & Stachnik, 1972; Patrick, Ward, & Crouch, 1998; Saigh & Umar, 1983; Swiezy, Matson, & Box, 1992; Tanol, Johnson, McComas, & Cote, 2010). These studies have examined a multitude of variations and manipulations (e.g., awarding points for appropriate behavior, manipulating the schedule of reinforcement) of the original version of the Game and were all successful at altering levels of behavior (i.e., increasing appropriate behaviors and/or decreasing inappropriate behaviors).

In 1972, in order to replicate and expand upon the original study, Medland and Statchnik examined the effects of a modified version of the GBG while also conducting a component analysis of the intervention. Target behaviors were reducing out-of-seat and talking out behaviors during a fifth-grade reading class. The authors modified the game by using a light system to provide feedback (green for appropriate behavior, red indicating disruptive behavior) in conjunction with teacher marks. Also, in order to avoid one child sabotaging the game, team members were allowed to vote out a member for the next day's game period if he/she was responsible for 4 or more marks against his/her team.

In order to examine the effectiveness of each component, the authors used an A/B/A/C/D/B phase change design with the following phases: $baseline_1$, $game_1$, $baseline_2$, rules, rules + lights, and $game_2$. During the $game_1$ phase, the GBG with the previously described modifications was in place. During $baseline_2$, the intervention was removed and the teacher was asked to use her normal classroom management procedures. During the rules phase, the teacher explained the rules to the class and provided examples of violations, but no other aspect of the intervention was in place (i.e., no points, light indicator, or reward). During the rules + lights phase, the rules were explained and the light indicator operated as described before without the remaining consequences of the GBG. During the final phase, the modified version of the GBG was re-implemented. Results indicated that the modified version of the game was the most effective intervention for reducing problem behavior. However, the rules + lights phase produced similar results. Limitations of this study include possible carry-over and sequencing effects.

Harris and Sherman (1973) examined the effects of different variations of the GBG in an attempt to reduce disruptive behaviors in a fifth-grade class and 2 sixth-grade classes (reading and math). The authors examined the effects of several components of the game using a multiple baseline across math and English periods with phase changes (A/B/C/D/E/A/F). In the first phase after baseline, a version of the game similar to that of the original study (Barrish et al., 1969) was used, resulting in reductions in problem behavior across each class.

Phases C, D, E, and F examined the effects of manipulating different components of the game on student behavior with the sixth grade students. The fifth grade students

only received the original version of the game. During the C phase, the game was played but the winning team did not receive a reward. This version of the game was not successful at reducing problem behavior. During the D phase, the experimenters systematically alternated the point criterion between four points and eight points for each classroom. On alternating days, the daily criterion would be either four points or eight points. The results indicated that student behavior followed the criteria in that when the criterion was higher, students engaged in higher levels of disruptive behavior. In the E phase, teacher feedback for violations was not provided and marks were hidden, rather than displayed to the class, while all other aspects of the GBG remained the same. The results of this variation were similar to the results of the variation used in the D phase when the criteria was set at 4 points, indicating that feedback and a public display of the points may not be a necessary component. After a brief return to baseline, the experimenters examined the effects of eliminating the teams in Phase F. The results of eliminating the team component were mixed. In the math class, levels of problem behavior were similar to the unmodified version of the game; however, this version was not successful at reducing problem behaviors in the reading class. However, the authors noted that during the no team version, when the class reached the criterion, their motivation to engage in appropriate behavior was diminished and resulted in elevated levels of problem behaviors. This occurred twice during the reading class and once during the math class.

Gresham and Gresham (1982) published the first study using the GBG with children with disabilities. The study was conducted in a self-contained classroom with children ranging from six to ten years of age with mild intellectual disabilities. Gresham

and Gresham compared the effects of interdependent (GBG), dependent, and independent group contingencies on reducing disruptive behavior utilizing an A/B/C/D/A/B/C/D design. In their version of the GBG, the class was divided into two teams, and marks were given for disruptive behavior. The team with the fewest marks won, as long as neither team exceeded 5 marks. If either team exceeded the criterion, neither team would gain access to the reward. For the dependent contingency intervention, each team was assigned one of two team captains who had been identified as the two most disruptive students in the classroom during baseline, and the captain with the fewest marks earned rewards for his team. As before, if either captain earned more than 5 marks, neither team could gain access to the reward. For the independent intervention, each child earned marks for themselves. The child(ren) with the fewest marks earned a reward. The GBG and the dependent group contingency intervention were comparably effective at reducing levels of problem behavior, and both were more effective than the independent group contingency.

Patrick et al. (1998) examined the effects of a variation of the GBG in a physical education class during a volleyball unit with fourth- through sixth-grade females in which they targeted appropriate and inappropriate social behaviors as well as volleyball skill acquisition. A multiple baseline design was implemented across three classes to evaluate the effectiveness of the intervention. The classes were divided into two teams and earned points for displaying socially appropriate behavior and lost points for inappropriate behavior. The intervention resulted in increases in appropriate behavior and decreases in inappropriate behavior. However, the Game had no effect on volleyball skill acquisition.

In another variation of the original version of the GBG, Davies and White (2000) utilized a combination of the GBG, self-management, and peer monitoring strategies to reduce inappropriate talking out behaviors in third grade children with ADHD and a paired control student. The intervention combined components of the GBG with self-management strategies. Each team was given a chart with green, blue, and red sections. If a child violated a rule, he/she had the opportunity to move a token from the green section to the blue section on his/her team's board, if he/she did not, the teacher moved the token from the green section to the red section. To gain access to the reinforcer, the team had to have one of its 5 tokens remaining in the green section at the end of the game session. Feedback was provided after rule violations, and students were encouraged to "catch themselves" if they violated a rule. Also, prior to the one-hour game sessions, there was a 5 minute peer meeting so that the teams could collaborate on how to earn a reward for the day. The procedure was assessed with an A/B/A/B withdrawal design. A decrease in inappropriate verbalizations was seen for each child with ADHD and each control peer.

Kelshaw-Levering et al. (2000) compared two variations of the GBG on the effectiveness of reducing disruptive behaviors in a second-grade classroom. The first version randomized the reinforcer only, while keeping the other original components of the GBG intact. If the class stayed below the criterion, a student drew the name of a reward from a jar and the class was given access to the chosen prize. In the next intervention phase, all components of the game were randomized: the type of group contingency (dependent or interdependent), the criterion, which rule the criterion was based on, who the criterion was based on, and the reinforcer.

The teacher had four jars from which to draw slips. The first jar indicated which rule was being used, or if all rules were being used. The second jar either had "Whole Class" or "Individual Student" written on the slips. If an Individual Student slip was pulled, another jar had the names of all of the students, and a name was drawn. Then a criterion slip was pulled and it was determined if the student met the criterion. Both of these interventions were utilized in an A/B/A/C/B/C withdrawal design. Both interventions were successful in reducing disruptive behavior, although the Randomize All intervention data were more stable and resulted in a lower overall mean level of problem behavior.

In a school wide application of the GBG, McCurdy et al. (2009) used a modification of the Good Behavior Game in a lunchroom at an elementary school. The school was having problems with out of seat behavior, play fighting, forceful physical contact, students throwing objects, and inappropriate verbalizations. For the purpose of the game, classrooms served as teams. Aids scanned the cafeteria and recorded disruptive behavior, blew a whistle to gain the attention of the child(ren) violating a rule, explained what rule they were violating, and gave a replacement behavior. The total number of points for each team was put on a poster and tallied over the course of a week. Winners were announced on the following Monday. In order to win, the teams had to stay below a mystery criterion level. The intervention was successful in reducing problem behaviors across grades K-6.

In 1983, Saigh et al. conducted the first study of the GBG with international students. A second grade Sudanese classroom was split into two teams. The teams earned marks for disruptive behavior, and the team with the fewest marks at the end of the 50-

minute game period earned access to a 30-minute free period at the end of the day. Furthermore, any team that received less than 25 total marks were the weekly winners and received special commendation letters. The game was successful in reducing inappropriate vocalizations, out of seat behavior, and aggressive acts.

In another international study, Leflot et al. (2010) used a variation of the GBG to reduce disruptive behavior in Belgian elementary students. This was a two year project that started in 2006 with second-grade teachers and classrooms and continued through the third-grade year. Half of the classrooms served as controls, whereas the other half of the classes were assigned to the GBG condition. In this version of the GBG, classrooms were split into teams of about 4-5 students. Teams received praise when they followed classroom rules, and had 1 of their 5 cards taken away from them if someone on the team violated a rule. In order to receive a prize, the team had to have a card left at the end of the game. The researchers began the study using 10 minute intervals of the game, and gradually lengthened that interval until the game lasted half of a school day.

Before the game was implemented, there were no differences in level of disruptive behaviors between the GBG and control groups. By the end of the school year, the intervention group showed significantly higher levels of academic engagement and appropriate behavior and significantly lower levels of disruptive behavior relative to the control group. Follow-up observations conducted after the summer break at the beginning of the third-grade year indicated that the results seen at the end of the school year failed to generalize over break, as there were no differences in the GBG group and the control group. However, at the end of the third-grade year upon re-implementation of the

intervention, similar differences were seen in behavior as compared to the end of the second-grade year.

Tanol et al. (2010) compared the efficacy of two versions of the GBG on two kindergarten classrooms. Two teachers volunteered for the study, and each nominated three children that had been exhibiting disruptive behaviors. The researchers implemented either a response-cost version of the game, or a reinforcing version of the game in each room using an A/B/A/C/B/C withdrawal design, and counterbalanced the order of presentation in each room. In both versions, the game was played during a 10-minute interval during carpet time, and the children were observed on a 10-second partial interval schedule. In the response-cost version of the game, each team started with 4 stars, and lost a star every time someone engaged in a disruptive behavior. In order to gain access to a small prize, the team had to have at least one star left. In the reinforcing version, the teams started with no stars, and earned stars for engaging in appropriate behavior. In order to gain access to reinforcement, the team had to earn at least three stars. Both versions of the game resulted in similar reductions of problem behaviors among the nominated students, increases in teacher praise, and decreased levels of negative teacher statements. Despite each intervention being successful, both teachers indicated that they preferred the reinforcement version of the game and said it fit better into how they wished to manage their classrooms.

Swiezy et al. (1992) conducted one of the few studies utilizing the GBG in the preschool setting. The study was conducted in an analogue setting and targeted compliance in four children. The authors manipulated several aspects of the original version of the game. First, the study aimed to increase compliance. For this goal, teams

earned points by complying with instructions implemented via a puppet. Teams competed to earn the most points, and the team that earned the most points received access to the reward. In the next phase the two teams were not in a competition, and if either team reached the criterion level, that team was rewarded. The study was successful at increasing compliance in the analogue setting, but the researchers did not obtain generalization data in the classroom nor measure student compliance after receiving instructions from an adult.

Hunt (2010) examined the effects of the GBG with a nonconcurrent multiple baseline design in three Head Start preschool classrooms. The author used the original version of the GBG (Barrish et al., 1969) to reduce problem behaviors in three target students and their classroom peers. The intervention was successful in reducing levels of problem behaviors for the classrooms and individual target students.

Hunt (2012) extended her previous study by examining the effects of the GBG on reducing levels of problem behaviors and increasing academically engaged behavior with three preschool students and their classroom peers in a Head Start setting. Hunt used a nonconcurrent multiple baseline across the participants and the original version of the GBG (Barrish et al., 1969) with only one modification in one classroom: midway through the intervention phase, Classroom A began splitting the students into three teams instead of two. Overall, the GBG was effective at reducing levels of problem behaviors for each target student and each classroom. Further, increases in academically engaged behaviors were observed for each target student and their peers.

Interdependent Group Contingencies in the High School Setting

To date, there have been only a few studies examining the effects of interdependent group contingency interventions (including the GBG or a variation) in the high school setting (Christ & Christ, 2006; Kleinman & Saigh, 2011; Mitchell, 2014; Mitchell, Tingstrom, Dufrene, Ford, & Sterling, 2015; Schanding & Sterling-Turner, 2010). Christ and Christ (2006) used a multiple baseline design across classrooms with a withdrawal phase to examine the effects of using an automated feedback device (a scoreboard) in three high school classrooms to successfully reduce problem behaviors and increase academic engagement. Each classroom earned a point on the scoreboard (token) if the students in the class went two minutes without classroom disruption. The scoreboard was displayed at the front of the classroom and counted down from two minutes. If any student in the class engaged in a disruptive behavior, the timer was reset by the teacher. The classroom needed to earn 17 points in order to gain access to the reinforcer (i.e., free time). Although not the GBG, per se, this study demonstrated that interdependent group contingencies can be effective at reducing problem behaviors in the high school settings.

Schanding and Sterling-Turner (2010) utilized an interdependent group contingency with a mystery motivator to reduce problem behaviors among three identified individuals in a ninth-grade biology class. They also assessed the effects on the classroom as a whole since services had been sought for classroom management. Utilizing an A/B/A/B/A/B withdrawal design, the study targeted reducing three problem behaviors: off-task, out-of-seat, and inappropriate vocalizations. The classroom participated in the game as a group (no teams), and had to stay below a set criterion

number of problem behaviors. The mystery motivator procedure included the teacher having an envelope with a mixture of slips with either the letter M or X on them. If the classroom stayed below the criterion, a student was asked to pick a slip. If the student pulled a slip with an M, the teacher rewarded the class with whichever reinforcer she had chosen for the day (the name of the reinforcer remained a mystery to the class until the end of the period). If the student pulled an X, the class was congratulated on their good day, and reminded that they could play the next day. Overall, there was a decrease in the measured problem behaviors for all three identified students, as well as the classroom.

Only two published studies have thus far utilized the GBG (Barrish et al., 1969) within the high school setting (Flower, McKenna, Muething, Bryant, & Bryant, 2014; Kleinman & Saigh, 2011). Kleinman and Saigh implemented the GBG in a ninth-grade classroom in New York City that was exhibiting elevated levels of disruptive behavior including talking or verbal disruption, aggression or physical disruption, and seat leaving. In order to adapt the intervention to the developmental level of the student, the intervention was presented as an opportunity for the students to earn prizes and the rules were presented as "expectations" rather than using the terms "game" and "rules".

The Game was implemented via an A/B/A/B withdrawal design, with phase changes occurring at the beginning of a new week. The intervention phases of the study resulted in significantly lower levels of inappropriate behaviors, and the withdrawal phase indicated elevated levels of disruptive behavior similar to baseline, suggesting that the GBG may be an effective intervention in the high school setting. Because the phase changes occurred in a predetermined fashion, rather than being based on ongoing

inspection of behavioral data, the researchers withdrew the intervention despite an increasing trend in disruptive behavior during the intervention phase.

In 2014, Flower et al. determined the effects of the GBG on reducing off-task behavior with high school students with disabilities in two classes. Each student in each room had a disability; disability categories included specific learning disability (primary category), intellectual disability, and other health impairment. Flower and colleagues used an A/B/A/B reversal design with a follow-up phase to assess the effects of the intervention procedure. The students were split into three teams and marks were given upon rule violations. Throughout the intervention phase, the daily criterion of allotted marks remained a mystery. To win, a team had to be below the mystery criterion at the end of the period and have the lowest number of marks. Five weeks after the final intervention phase, the researchers conducted a follow-up phase to determine the extent to which the procedures were being used and the level of student off-task behavior.

Flower et al. (2014) found that the GBG was effective in reducing level of off-task behavior, reporting PND scores of 90% during the intervention phases. Follow-up observations determined that neither teacher had continued to utilize the intervention procedures. In Classroom1, off-task behavior remained below baseline level, but was higher than intervention level. In Classroom 2, level of off-task behavior was similar to the level found in baseline.

In an attempt to further extend the GBG to a high school population, Mitchell and colleagues (2015) sought to determine if the GBG was effective at reducing teacher referred problem behaviors in three high school classrooms in a southeastern state. Mitchell also assessed teacher and student acceptability of the intervention and utilized an

A/B/A/B withdrawal design in each classroom. Teachers were referred by the school principal for problems related to disruptive classroom behavior. The same target behaviors were monitored in each class: inappropriate vocalizations, off-task behavior, and out-of-seat behavior. Result of the study indicated that the GBG was effective at reducing overall levels of disruptive behavior across all three classrooms. Withdrawal phases indicated elevated levels of problem behavior similar to baseline. Overall, each teacher indicated that the intervention procedures were acceptable; and although students had issues with a couple of aspects of the game, they also found it to be generally acceptable.

Despite positive results, one of the participants dropped out of the study during the first intervention phase. The teacher that dropped out noted that he wished to alter his classroom management, and it was determined that the changes would affect the control of the study. While he rated the intervention as acceptable overall, he noted that he slightly disagreed that it was a fair way to handle behavior problems in the classroom. The first author noted that the teacher had problems correctly scoring points for the teams when disruptive behavior occurred, often ignoring behaviors on one team and recording every occurrence of problem behavior for the other. She noted that this resulted in large discrepancies between team scores and took the "spirit" out of the game. Furthermore, when the students' (in the class that dropped out of the study) acceptability was assessed, despite overall acceptability, they noted that they did not feel that the competition aspect of the game was fair.

While the study was effective in reducing problem behaviors across all the classrooms and resulted in overall positive acceptability ratings, there were some

limitations to the Mitchell et al. (2015) study. The author noted that the problems with scoring and attending to two separate teams were a problem for one of the teachers, resulting in a large discrepancy in team points and a consensus among the students that the implementation was not fair. Mitchell et al. suggested that a study be conducted examining the effectiveness of the GBG without teams. She suggested that the simpler version (no teams) may be more easily implemented and monitored by secondary teachers, thereby resulting in better outcomes and acceptability.

In a follow-up study with high school students, Mitchell (2014) examined the effects of the GBG with a changing criterion element in a high school setting. Specifically, Mitchell attempted to determine if there was a functional relationship between levels of problem behavior and the criterion level (i.e., does level of problem behavior change in relationship to a change in the point criterion). Mitchell utilized an A/B/A/B withdrawal design with a changing criterion element during intervention phases in three classrooms to determine the effects of the intervention on reducing disruptive behaviors and increasing academically engaged behavior. The criterion systematically decreased during the first B phase. During the second intervention implementation phase, a mystery criterion "sub-phase" was introduced.

A review of Mitchell's results suggests the intervention was successful at reducing levels of disruptive behavior and increasing levels of academically engaged behavior in each classroom. An examination of the changing criterion phases indicates that level of observed disruptive behavior appears to be related to the criterion level for two of the three classrooms. However, during the mystery criterion phase, data for two of the classrooms displayed higher degrees of variability than when a set criterion was

present. Similar to the results obtained by Mitchell et al. 2015, each teacher indicated the intervention procedures were acceptable. These data further indicate the effectiveness and acceptability of the GBG in a high school population and suggest that the level of problem behavior may be functionally related to where the point level criterion is set.

School Wide Positive Behavior Interventions and Supports

The Good Behavior Game and other similar classroom interventions could be conceptualized within the scope of a Tier II intervention within a School Wide Positive Behavior Interventions and Supports (SW-PBIS) framework. SW-PBIS is an empirically supported systems change program that is growing in popularity and support (Dunlop, 2013). SW-PBS fits into a school wide three-tiered response to intervention (RTI) program that is utilized to target and provide services to students displaying problem behaviors. Tier one consists of basic supports provided school wide, and includes specific classroom management procedures (Dunlop, 2013; Reinke et al., 2013). Procedures include teaching school wide expectations/rules to students, using praise and reinforcement to acknowledge appropriate behavior, and referring to or re-teaching the rules when using reprimands or redirects (Reinke et al., 2013).

If a student displays problem behavior despite consistent access to Tier I supports, the child will receive more specialized interventions in Tier II or III. Tier II interventions target specific problem behavior within group wide or individual students. Tier II interventions are typically considered to be simple and are a non-function based attempt to address problem behaviors before referring a child for more intensive or special education services. Within a SW-PBIS system, if a child fails to respond to Tier II interventions implemented with integrity they would move into Tier III. Tier III

interventions are tailored to the individual, often through a functional behavior assessment (FBA) or functional analysis (FA) and may also include a special education assessment referral

While Tier II is available for students failing to respond to Tier I, many times, a referring teacher will have problems consistently utilizing appropriate classroom management techniques, displaying poor integrity with SW-PBIS implementation or have multiple children displaying excessive problem behaviors (Reinke et al., 2013). When this occurs, interdependent group contingency interventions, such as the GBG, may be effective at improving classroom management and targeting multiple children (because the intervention targets the class, rather than individual students).

As previously noted, the GBG requires teachers to use the three components of classroom management described by Evertson and Emmer (1982) (i.e., effectively instructing students on classroom rules and procedures, monitoring compliance and providing feedback, and effectively communicating information to the class). These components also describe and complement the SW-PBIS management protocol: utilizing class-wide expectations and regularly teaching them to the class and providing feedback/referring to the rules when issuing reprimands.

Within the SW-PBIS setting, the GBG could be conceptualized as either a Tier I or Tier II intervention. If the GBG is implemented in conjunction with SW-PBIS as a preventative, classroom management procedure, then it would be classified as a Tier I support. However, if the GBG is implemented as an intervention targeting reducing disruptive behavior or increasing academic behavior for some group or subset of students in a class, then it might be better conceptualized as a Tier II intervention.

In a summary report for implementing SW-PBIS in high schools, Flannery and Sugai (2010) indicate that little research has been done examining the effects of SW-PBIS in the high school setting despite positive outcomes in those that implement the program with integrity and utilize data when making decisions. They (Flannery & Sugai, 2010) note that the bulk of research on the efficacy of such programs and Tier II interventions (e.g., check-in, check-out) focus on intervening with younger students. To this point, the authors call for more research on evidence based Tier II interventions in the high school setting to expand effective intervention techniques to this population.

Purpose of the Present Study

Several studies have been published using variations of the Good Behavior Game since the original study (Barrish et al., 1969). While the GBG has recently been shown to be effective in the high school setting, previous research has indicated that a no-team version of the game may be better suited for the secondary setting. Furthermore, a no-team version of the Game may also be more effective or useful in smaller classrooms, in which dividing students into teams may not be permissible. However, this procedure has not yet been empirically evaluated. Furthermore, it is unknown if such a procedure would be considered acceptable to high school teachers.

Demonstrating that the streamlined version of the game is effective at effecting behavior change could offer important information to practitioners designing intervention plans for classrooms. For example, if the data suggest that the simpler version of the GBG is effective, easy to implement, and found to be acceptable by teachers, interventionists can add the easier version to their intervention repertoire when working with teachers and administrators. Research has demonstrated that teachers not only want

interventions that work, they prefer to implement interventions that are efficient and easy to implement (Witt & Martens, 1983). To that end, in addition to collecting data on the effectiveness of the interventions, researchers should also collect data on teacher acceptability and implementation integrity.

The primary purpose of this study was to assess the effectiveness of a no-team modification of the GBG on decreasing disruptive classroom behavior and increasing academic engagement in high school classroom at schools implementing SW-PBIS. Not only will this expand upon the GBG literature, but it will also provide practitioners an effective RTI Tier I or Tier II behavioral intervention which is largely lacking in high schools. Providing high schools with effective behavioral interventions is crucial because high schools tend to have greater levels of disruptive behaviors and often resort to punitive punishment procedures (Maag, 2002; Winbinger et al., 2000). The following research questions were evaluated:

1. Will the GBG with a no-team modification successfully reduce disruptive behaviors in high school classrooms?
2. Will the GBG with a no-team modification successfully increase academic engagement in high school classrooms?
3. Will the GBG with a no-team modification be acceptable to teachers for use in a high school classroom?

CHAPTER II

METHOD

Participants and Setting

Participants included three high school classrooms referred for disruptive classroom behavior to the primary researcher by school administrators. Data were collected in two schools from small urban areas in a southeastern state. Each school had SW-PBIS expectations posted throughout the school and in each classroom. Teacher consent was obtained prior to collecting data (see Appendix A). School 1 (Teachers 1 & 2) was comprised of 67% African American students, 30% Caucasian students and 3% Hispanic students. Seventy-one percent of students received free lunch and 8% received lunch at a reduced cost. School 2 was made up of 93% African American students and 3% each Hispanic and Caucasian students. During the academic school year, School 2 received a federal grant in which all students received no cost breakfast and lunch. While each school reported use of SW-PBIS and had SW-PBIS posters throughout the school, neither school had been evaluated with a School-Wide Evaluation Tool (SET, Sugai, Lewis-Palmer, Todd, & Horner, 2005) within the past two years and, therefore, could not produce recent SET scores to verify that SW-PBIS was in place or the extent to which it was in place.

Teacher 1 was an African American female in her first year of teaching. She described the students in her eleventh grade general education English class as loud, disruptive, off task, and disrespectful. Classroom 1 was composed of 27 students; 21 students were African American and 6 students were Caucasian. None of the students in the class had a special education ruling or individualized education plan (IEP). Teacher 1

had not had previous exposure to the GBG, nor had she attempted to use any noted intervention with the students prior to this study. Direct observation during baseline confirmed that no interventions were in place.

Teacher 2 was a Caucasian female in her 11th year of teaching. She described the students in her ninth grade reading strategies class as off-task, loud, and disruptive. Classroom 2 was composed of 21 students; 14 students were African American and 7 students were Caucasian. None of the students in the class had a special education ruling or IEP. Teacher 2 had not had previous exposure to the GBG, nor had she attempted to use any noted intervention with the students prior to this study. Direct observations during baseline confirmed that no interventions were in place.

Teacher 3 was a Caucasian male in his second year of teaching. He described the students in his 10th grade general education world history class as extremely disruptive, disrespectful, and off-task. Classroom 3 was composed of 26 student; 25 students were African American and 1 student was Hispanic. None of the students in the class had a special education ruling or IEP. Teacher 3 had not had previous exposure to the GBG, nor had he attempted to use any noted intervention with the students prior to this study. Direct observations during baseline confirmed that no interventions were in place. All procedures were approved by the University's Institutional Review Board (IRB, see Appendix B) prior to the recruitment of participants and data collection.

Materials

The materials utilized in this study were similar to resources used by Mitchell et al. (2015). Necessary materials included a teacher script and protocol, a rules poster, a board, and rewards. A script and protocol were provided to each teacher (see Appendix

C). Use of the script and protocol, in conjunction with the procedural integrity checklist aided in ensuring consistent implementation across each class. A rules poster was also developed for each classroom. Rules were based on SW-PBIS expectations and developed with each teacher to specifically target the problem behaviors in each classroom. The rules poster were clearly visible to the class while the intervention was in place. Each teacher used a white board to keep track of points during each intervention. Teachers 2 and 3 used a white board already located in their room while Teacher 1 was provided a small white board that was hung on her wall during the intervention phases. The boards were clearly visible to the class and easily accessible to the teacher. Possible rewards were nominated by the teacher and primary investigator and approved by the students in a simple preference assessment. Rewards were of little to no cost and any purchased items were provided by the primary investigator. Rewards included items such as snacks (e.g., chips, cookies, crackers), candy, no-homework passes, a free "100% attendance grade" (i.e., each student received a free 100 grade), and a pass for bonus points on a quiz or test.

At the conclusion of the final intervention phase, each teacher was provided with a modified version of the Behavior Intervention Rating Scale (BIRS; Elliot and Treuting, 1991; see Appendix D) to assess their perception of the effectiveness and acceptability of the intervention. The BIRS is a rating scale containing 24 6-point Likert scale items with ratings ranging from *strongly disagree* (1) to *strongly agree* (6). Scores can range from 24-144, with higher scores indicating a higher perceived effectiveness, acceptability, and efficiency rating. The BIRS has been found to be an internally consistent measure, as Elliot and Treuting reported a Cronbach's Alpha score of .97 in previous research (1991).

Elliot and Treuting indicated that three factors account for 73.6% of the variability: acceptability, effectiveness, and time of effectiveness.

Dependent Variables

The primary dependent variable was disruptive behavior. The definition of disruptive behavior was determined with each teacher to address specific problem behaviors. However, each teacher agreed that disruptive behavior included students talking without permission, playing with objects, and being out of seat. Talking without permission was defined as students talking without permission to other students or teacher, shouting out, talking back, singing, or making noises not related to an ongoing task demand. Playing with objects was defined as playing with objects not associated with ongoing task demands (e.g., combing hair, slamming books, scribbling/coloring, digging in book bag, using a phone). Out of seat behavior was defined as the child leaving their desk for 3 or more seconds without permission.

Academically engaged behavior (AEB) was measured as a secondary dependent variable. AEB was defined as orienting towards and attending to the ongoing academic task (e.g., attending to lecture, working on an assigned worksheet) or following teacher instructions (e.g., sitting quietly or reading a book upon completing a task) for 3 consecutive seconds at the beginning of each interval (see below).

Observation Procedures and Data Collection

The behavior of each child in the classroom was assessed during the observation period. Observations occurred between two and four times per week. The observation started with one child, and move to a different child at the end of each interval, so that each child was observed multiple times throughout the observation. Observations were 20

minutes in length and utilized momentary time sampling for both Disruptive and Academically Engaged behavior (see Appendix E). This method allows for percentage of intervals of occurrence to be calculated in order to easily compare phases and is considered to be an appropriate method of observing student behavior (Radley, O'Handley, & LaBrot, 2015). Intervals were 10 seconds in length; at the beginning of each interval, observers were cued to look at the student for 3 seconds to determine if they were engaging in any of the target behaviors. Observation times (i.e., at the beginning or end of class) were determined randomly to ensure the beginning and end of the game were observed approximately the same amount. Observations were conducted by the primary researcher and trained graduate students. At the end of the observation, the total percentage of intervals in which disruptive behavior and academically engaged behavior occurred were calculated and graphed.

Procedures

Screening

Teachers were referred to the study by school administrators and/or the school's SW-PBIS consultant for having some problems with classroom management resulting in high levels of disruptive behavior and elevated levels of office discipline referrals and/or academic deficits. Once consent was obtained, a screening observation was conducted to determine if the GBG was a suitable intervention for the level and type of problem behaviors occurring in the classroom. During the screening observation, teachers were instructed to continue to manage their classroom in their typical manner, utilizing any reinforcement and consequent procedures they normally used. In order for a classroom to

screen into the study, disruptive behavior had to occur in at least 30% of intervals. Observation procedures were the same as those during all other phases of the study.

Baseline

Baseline data were collected to determine the classrooms' current level of disruptive behavior and to determine the starting criterion score for use during the intervention phases. During baseline observations, teachers were again instructed to continue to manage their classroom in their typical manner, utilizing any reinforcement and consequent procedures they normally used. The teacher was also required to mark occurrences of rule violations (as they would if the game were ongoing) on a sheet of paper, unknown to the students. Observers also collected data at this time to determine the percentage of intervals in which problem behaviors and academic engagement occurred in order to assess the effectiveness of the interventions relative to baseline. If a classroom screened into the study, the screening observation counted as the first baseline datum point. The baseline phase ended when data were stable or when problem behaviors were trending upward.

Preference Assessment

Prior to starting the intervention phase, the class was asked to choose from a list of economically reasonable and teacher approved rewards that they would work to earn (e.g. homework passes, break time, candy, snacks, bonus points). Any student approved items were included in the reward pool. Each teacher approved item was approved by the students in each class. The primary researcher provided tangible items chosen for use as rewards. Examples of preferred rewards included snacks, candy, bonus points, and no-homework passes.

Teacher Training

Prior to starting the intervention phase, the teachers were trained on the procedures of the intervention. A script and checklist for treatment integrity (see Appendices C and F) were provided to the teacher. The training consisted of having the primary experimenter explain the rules and procedures of the Game and having the teacher role-play the intervention with the experimenter. The teacher practiced implementing the game with the primary researcher until 100% integrity was obtained. The primary researcher continued to assess teacher integrity and was available for questions throughout the study. Feedback for missed steps and/or praise for high integrity was given at the end of each observation. If the teacher's integrity fell below 80% during an observation, the teacher was retrained via the steps above.

Criterion Levels and Reward Determination

The criterion level for each class was determined via the baseline marks given by the teacher. The criterion values were set approximately10% below the mean for the class during baseline. The number of marks for Classroom 1 was 13, 33 for Classroom 2, and 35 for Classroom 3.

Prior to beginning the intervention phase of the study, the names of all of the available rewards were written on cards. Each day, the teacher randomly drew two cards at the beginning of class. If the class remained under the criterion, they were able to vote at the end of the period on which of the two rewards to receive that day.

Intervention Procedures

The teacher introduced the game to the class by telling the students they were going to have a class wide competition. The teacher told the students that the goal of the

competition was for the class to work together to remain under a criterion. After reviewing the game rules with the students, the teacher informed students that rule violations would result in a mark on the board. The teacher informed the students that in order to receive their reward for the day, the total number of marks must remain under the class criterion (which was displayed to the class). The teacher then drew two possible reward cards and informed the class that by beating their goal, they would get to vote on which prize they wished to receive. The class would earn access to the reward contingent upon remaining under the criterion level and the class voted as a whole on which of the two rewards they would win if they remained below the criterion level.

Design

An A/B/A/B withdrawal design was used in each classroom to assess the effects of the intervention. A is the baseline phase/withdrawal phase, while B represents the intervention phase. Phase changes occurred based on the trend, level, and stability of the primary dependent variable: percentage of intervals with disruptive behaviors.

Social Validity

At the conclusion of the final intervention phase, each teacher rated their perceived effectiveness and acceptability of the intervention with a slightly modified version of the BIRS (Elliot & Treuting, 1991).

Observer Training

Trained graduate students in a Ph.D. School Psychology program served as direct observers in conjunction with the primary investigator. Potential observers were trained on the operational definitions and observation procedures prior to conducting observations. Observers were given a copy of the operational definitions to refer to as

needed. Potential observers were required obtain a minimum of 90% interobserver agreement with the primary investigator in a practice classroom observation before they were used as observers.

Interobserver Agreement

Interobserver agreement (IOA) was calculated by adding the total number of agreements for occurrences of disruptive behavior and academically engaged behavior between the two observers and dividing that number by the total number of occurrences marked by each observer and multiplying by 100. The minimum acceptable IOA level was 85%; if an IOA score fell below 85%, the observer was retrained via the methods described above before being used an as observer again. No observer had to be retrained during the course of the study.

IOA was obtained during 41% of observations in Classroom 1; the average percentage of agreement was 93% (88% - 97%). In Classroom 2, IOA was obtained during 43% of observations and was found to average 90.5% (86.5% - 93%). IOA was obtained during 33% of observation in Classroom 3 and was found to average 94% (90% - 97%).

In addition to collecting IOA, Kappa values were calculated for disruptive behavior and academically engaged behavior via the formula provided by Uebersax (1982). The Kappa coefficient accounts for potential chance agreements and offers a conservative measure of inter-rater agreement. Watkins and Pacheco (2000) determined that Kappa values of .40 or less indicate *poor* agreement, values between .40 and .60 indicate *fair* agreement, values between .60 and .75 indicate *good* agreement, and values of .75 and greater indicate *excellent* agreement.

Overall, each classroom displayed excellent levels of agreement. In Classroom 1, the Kappa score was 0.935 (95% CI = 0.916 – 0.953). 0.913 (95% CI = 0.892 – 0.934) in Classroom 2, and 0.940 (95% CI = 0.920 – 0.960) in Classroom 3.

Treatment Integrity

Treatment integrity was assessed during observation periods via a treatment integrity checklist adapted from Hunt (2010) and Mitchell (2012) (Appendix F). The checklist assessed which aspects of the intervention the teacher implemented correctly. During the baseline and withdrawal phases, the checklist was used to ensure that the teacher was not utilizing the intervention techniques. Feedback was provided to the teacher each day following data collection, and retraining was conducted if the teacher fell below 80% integrity. Only one teacher had to be retrained one time during the course of the study (Teacher 3). Integrity observations occurred in conjunction with behavioral observations and teachers were instructed to complete the integrity checklist each day. IOA for treatment integrity was also collected when IOA was collected during behavioral observations. IOA was calculated by dividing the number of agreements of step completion or incompletion by the total number of possible steps.

Observer ratings of teacher integrity indicated Teacher 1 utilized 0% of steps during baseline, 96% of steps during the first intervention phase (89% - 100%), 13% of steps during with withdrawal phase (the classroom rules poster remained posted due to its location in the classroom; however, it was not discussed or utilized by the teacher), and 96% during the final intervention phase (89% - 100%). IOA was calculated during 36% of integrity observations in Classroom 1 and was found to be 98% (87.5% – 100%). Teacher 1 rated her integrity at 0% during the baseline and withdrawal phases, at 96%

during the first intervention phase (85% - 100%), and at 100% during the final intervention phase.

Observer ratings of teacher integrity indicated Teacher 2 utilized 0% of steps during baseline, 95% of steps during the first intervention phase (88% - 100%), 0% of steps during with withdrawal phase, and 100% during the final intervention phase. IOA was calculated during 43% of integrity observations in Classroom 2 and was found to be 99% (90% - 100%). Teacher 2 rated her integrity at 0% during the baseline and withdrawal phases, at 98% during the first intervention phase (91% - 100%), and at 100% during the final intervention phase.

Observer ratings of teacher integrity indicated Teacher 3 utilized 0% of steps during baseline, 92% of steps during the first intervention phase (55% - 100%), 0% of steps during the withdrawal phase, and 91.5% during the final intervention phase. Teacher 3 required retraining following an instance in which he only utilized 55% of the intervention steps. Following retraining, his integrity rose to and maintained at an acceptable level. IOA was calculated during 33% of integrity observations in Classroom 3 and was found to be 100%. Teacher 3 rated his integrity at 0% during the baseline and withdrawal phases, at 95% during the first intervention phase (69% - 100%), and at 100% during the final intervention phase.

Procedural Integrity

Procedural integrity was assessed during teacher trainings to ensure that the training procedures were consistent across all teachers. Procedural integrity was assessed via the procedural integrity checklist (see Appendix G), which includes the training steps described above. Teacher trainings were completed with 100% procedural integrity. IOA

for procedural integrity was collected during 25% of training sessions. IOA was calculated by dividing the number of agreements of step completion or incompletion by the total number of possible steps and multiplying by 100. IOA for procedural integrity was 100%

Data Analysis

Visual inspection was used to assess the level, trend, and variability of disruptive behavior and academically engaged behavior data. Phase change decisions were determined via the stability and trend of disruptive behavior data. The baseline and withdrawal phases ended when disruptive behavior data were stable or trending upward, while intervention phases ended when disruptive behavior data were stable or trending downward.

In conjunction with visual inspection, effect sizes were calculated at the conclusion of the final intervention phase utilizing nonoverlap of all pairs (NAP; Parker & Vannest, 2009). NAP is a nonparametric method that compares each individual baseline/withdrawal datum point to each subsequent intervention phase datum point. An overall weighted average NAP score across comparisons (A1 vs. B1 and A2 vs. B2) was then calculated for each classroom. Because NAP has been highly correlated with the R^2 effect size, it is considered to be a reliable measure of effect size for use in single-case design research (Parker & Vannest, 2009). The developers recommend that NAP scores between 0 and 0.65 be interpreted as weak effects, scores from 0.66 to 0.92 be interpreted as moderate effects, and scores from 0.93 to 1.0 be interpreted as strong effects.

CHAPTER III

RESULTS

Disruptive and Academically Engaged Behavior

The percentages of intervals in which disruptive behavior and academically engaged behavior occurred for each classroom are displayed in Figure 1. The NAP effect sizes for each class are presented in Table 1. In Classroom 1, baseline is characterized by elevated and upward trending occurrences of disruptive behavior (DB) and a low, stable level of academically engaged behavior (DB = 40.83% of intervals; AEB = 32.50% of intervals). After implementation of the GBG, level of DB significantly decreased and maintained at a low level ($\bar{x}$ = 15.65% of intervals) while level of AEB significantly increased ($\bar{x}$ = 52.36% of intervals). Following withdrawal of the intervention, occurrences of DB increased in level until reaching a percentage of intervals similar to baseline ($\bar{x}$ = 28.33%), and level of AEB decreased, but was somewhat variable ($\bar{x}$ = 27.64% of intervals). Reimplementation of the intervention resulted in an immediate reduction in DB ($\bar{x}$ = 10.22% of intervals) that remained stable, with notable increases in AEB ($\bar{x}$ = 53.24% of intervals). The overall weighted average NAP score across comparisons (A1 vs. B1 and A2 vs. B2) for Classroom 1 indicates the intervention resulted in strong/large effects at reducing levels of DB (NAP = 1.00) and increasing levels in AEB (NAP = 0.992).

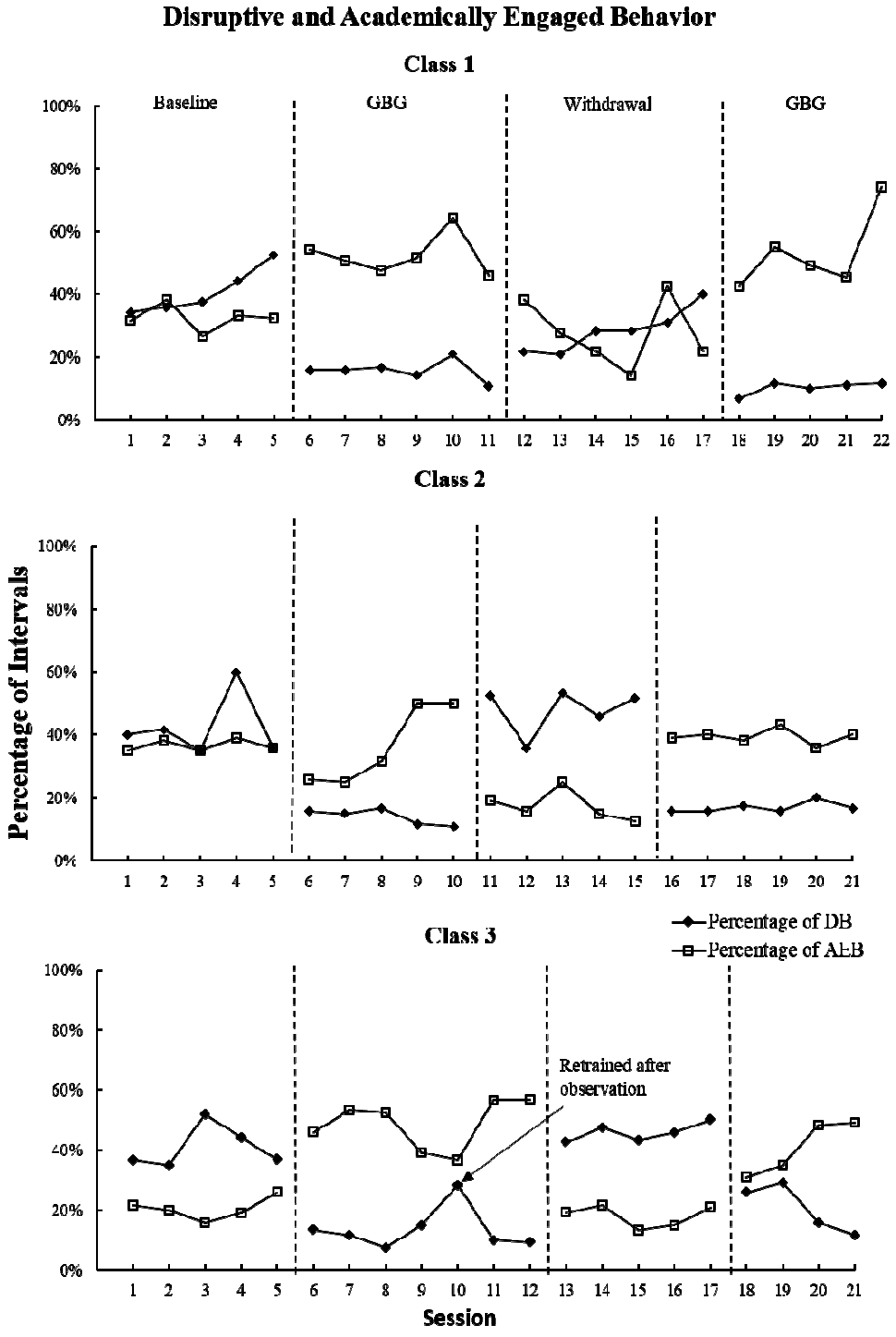

Figure 1. Disruptive and Academically Engaged Behavior

Table 1

Disruptive and Academically Engaged Behavior Weighted Average NAP Effect Sizes

Classroom	DB	AEB
1	1.00	0.992
2	1.00	0.414
3	1.00	1.00

Note. NAP scores between 0 and 0.65 are considered weak effects, scores between 0.66 and 0.92 are considered moderate, and scores from 0.93 to 1.00 are considered strong (Parker and Vannest, 2009).

In Classroom 2, baseline level of DB was elevated and relatively stable (with one spike occurring at datum 4), while level of AEB was low and stable (DB = 42.50% of intervals, AEB = 36.66% of intervals). Implementation of the intervention resulted in an immediate, stable reduction in DB (14.00% of intervals). Following implementation, level of AEB initially dropped slightly, but the final 2 data points indicated a modest increase in AEB (36.50% of intervals). Withdrawing the intervention resulted in an immediate and slightly variable increase in level of DB (47.83% of intervals) and an immediate and downward trending occurrence of AEB (17.50% of intervals). Reimplementation of the intervention resulted in an immediate reduction in DB that remained stable (16.94% of intervals) and in immediate increase in AEB that also remained stable (39.44% of intervals). While the improvements in DB are characterized as a strong effect (NAP = 1.00), the increase in AEB is considered a small (NAP = 0.414) effect.

During baseline, Classroom 3 displayed an elevated and stable level of DB (with a spike occurring at datum 3) and a low, stable level of AEB (DB = 40.89% of intervals; AEB = 20.47% of intervals). Implementation of the GBG resulted in an immediate

reduction in DB. DB rose at datum 10, which coincides with the day the teacher implemented 55% of the intervention. Following retraining, level of DB again reduced to a low level ($\bar{x}$ = 13.57% of intervals). While level of AEB was slightly variable, it is characterized by the immediate increase in level (48.69% of intervals) that never overlapped with the baseline level. Following withdrawal, level of DB increased and trended slightly upward (45.83% of intervals) while level of AEB decreased and remained stable (18.00% of intervals). Reimplementation of the intervention resulted in an immediate, downward trend of DB (20.63% of intervals) and an overall, upward trending increase in AEB (40.83% of intervals). The improvements in both DB (NAP = 1.00) and AEB (NAP = 1.00) are considered strong, as neither variable shows overlap across each comparison.

Social Validity

As a measure of social validity, teachers completed the BIRS (Elliot and Treuting, 1991) following the final intervention phase. Items are rated on a 6 point Likert scale, with ratings ranging from *strongly disagree* (1) to *strongly agree* (6). Scores of 4 (s*lightly agree)*, 5 (*agree)*, and 6 (*strongly agree*), indicate perceived effectiveness, acceptability, and efficiency of the intervention, with higher scores signifying higher levels or perceived effectiveness, acceptability, and efficiency. Mean scores for each factor and teacher are presented in Table 2. Overall, each teacher indicated they perceived the intervention procedures to be effective, acceptable, and efficient, indicated by mean scores equal to or greater than 4.0 across each factor. Overall item mean for Teacher 1 was 5.42, for Teacher 2 was 4.71, and for Teacher 3 was 5.67.

Table 2

Behavior Intervention Rating Scale Results

Classroom	Effectiveness	Acceptability	Efficiency
1	4.43	6.00	4.50
2	4.43	4.71	4.00
3	5.57	5.53	6.00

Note. Mean scores for each factor are presented. A score of 6 indicates the teacher strongly agrees with the statement, 5 indicates agreement, 4 indicates slight agreement, 3 indicates slight disagreement, 2 indicates disagreement, and 1 indicates strong disagreement. Higher scores indicate higher levels of perceived effectiveness, acceptability, and efficiency. Scores above 4.0 are interpreted the teacher indicating positive perceptions of the intervention

CHAPTER IV

DISCUSSION

The purpose of the present study was to assess the effectiveness of a streamlined, no-team version of the Good Behavior Game (GBG) at reducing levels of disruptive behavior and increasing levels of academically engaged behavior in high school classrooms. While the GBG has been shown to be an efficient and effective intervention strategy across several populations and with numerous behaviors (Tingstrom et al., 2006), it has little empirical evidence for use in the high school setting (Flower et al., 2014, Kleinman & Saigh, 2011; Mitchell, 2014; Mitchell et al., 2015). Given the significant costs of excessive levels of disruptive behavior (Luiselli, Putnam, & Sunderland, 2002; Higgins, Williams, & McLaughlin, 2001), it is critical for school psychologists to determine and validate effective intervention techniques. Furthermore, high school administrators endorse and utilize more punitive techniques (Winbinger et al., 2000) and are in need of empirically supported tier I and II interventions to control problem behavior. Given that teachers express a real need for help with classroom management (Maag, 2002; Reinke et al., 2013) resulting in elevated levels of problem behavior (Reinke, Herman, & Stormont, 2013), the GBG seems like an ideal fit for use in these classrooms if it is found to be effective at producing behavior change.

Research Questions

Research Question 1

The results of the present study are consistent with previous research, indicating that the streamlined version of the GBG is effective at reducing levels of disruptive behavior in regular education high school classrooms. This is illustrated by clear

differences between baseline/withdrawal and subsequent intervention phases and further characterized by a lack of overlap between any data points, resulting in NAP = 1.00 effect sizes for each comparison in each classroom. Given that these differences were found across 3 different high school classrooms with students in different grades (9^{th}, 10^{th} and 11^{th}), with teachers with varying degrees of teaching experience, across different schools, and in different academic settings, the use of the streamlined version of the GBG for reducing levels of disruptive behavior is clearly supported and effective. In addition, given the variety and diversity of these classrooms and the present results, external validity of the GBG is also supported.

Research Question 2

In addition to determining the effects of the streamlined version of the GBG on reducing disruptive behavior, concurrent improvements in levels of academically engaged behavior were also monitored. Implementation of the intervention in Classrooms 1 and 3 resulted in clear and significant improvements in academic engagement, illustrated by NAP effect sizes of 0.99 and 1.0, respectively. While the first intervention phase in Classroom 2 saw an immediate decrease in disruptive behavior, the final 2 points in the first intervention phase and each of the 6 points in the second intervention phase demonstrate an increase in level of academically engaged behavior. Taken together, the streamlined version of the GBG demonstrated in the current study should be considered to be an effective way to increase levels of academic engagement in high school students.

Research Question 3

Given that teachers prefer to implement interventions that are efficient and easy to implement (Witt & Martens, 1983), assessing teacher's level of acceptability of an intervention can provide important information to practitioners when determining which intervention to recommend. In order to assess the teachers' perception of effectiveness, acceptability, and efficiency of the current intervention, each teacher completed the BIRS (Elliot & Treuting, 1991) following the final intervention phase. Overall, each teacher rated the intervention as effective (average scores = 4.43, 4.43, 5.57; Classrooms 1, 2, and 3, respectively), acceptable (6.00, 4.71, 5.58), and efficient (4.50, 4.00, 6.00). This indicates that the modified version of the GBG is effective, results in changes in behavior in a timely manner, and acceptable to implement, bolstering its overall profile for use in the high school setting. Furthermore, anecdotally, each teacher expressed support for the intervention by noting they wanted to quickly end the withdrawal phase. Also, each teacher expressed that they would continue to use the intervention following the end of the study.

While student acceptability was not assessed in this study, anecdotal observations indicated the majority of the students found the procedures to be at least acceptable. Examples of anecdotal observations include the majority students expressed being unhappy when the teacher announced the game was not going to be played during the withdrawal phase and students being excited about receiving rewards on days they met the criterion and sad the days they missed it. Furthermore, most students were upset when their classmates got a mark for the class, commenting that they wanted to get their

reward. While the majority of students expressed positive views of the GBG, other students commented they did not care about the Game or rewards.

Limitations

While the present study demonstrates the effectiveness of a streamlined version of the GBG at improving student behavior, the results must be considered with regards to the following limitations. First, while each school reported use of SW-PBIS and had SW-PBIS posters, little evidence suggests SW-PBIS was being implemented with fidelity. However, the results of the present study indicate that the streamlined version of the GBG can be introduced as a tier II intervention into high school classrooms with components of SW-PBIS present or possibly even as a stand-alone intervention without SW-PBIS in place.

In Classroom 1, the teacher opted to leave the Game rules poster up due to its location in the classroom during the withdrawal phase. While this is a slight deviation from a full withdrawal of intervention techniques, the withdrawal still resulted in an increase in disruptive behavior congruent to the level observed initially in baseline and a diminished level of academic engagement.

Teacher 3 required retraining at one point during the first intervention phase. Subsequently, a spike in disruptive behavior and dip in academically engaged behavior were noted as a result of his poor implementation integrity. However, following re-training, the teacher was able to maintain appropriate levels of integrity, resulting in significant improvements in student behavior. Another limitation in Classroom 3 should be noted in the final intervention phase. While the researcher attempted to collect a fifth datum, it was unable to be obtained due to the end of the semester.

Given that the current study was conducted in a naturalistic setting (general education high school classrooms), deviations in some variables were beyond the control of the primary researcher. Such deviations include schedule, daily task demands, student and teacher attendance (resulting in one baseline and one withdrawal point collected with a substitute teacher in Classroom 3), and school-wide testing conflicting with the observation schedule. These variations may have affected the stability of the data throughout the study, but with such research, are often unavoidable.

The use of tangible rewards (e.g., candy and snacks) may reduce the external validity of the current study. While the rewards were of low cost, they were provided by the primary researcher. It may not be feasible for a classroom teacher to provide daily tangible rewards to students. However, the use of purchased tangible rewards were used in conjunction with free rewards (e.g., homework passes, bonus points, free time) in each classroom to reduce the cost of reinforcement. Furthermore, each teacher indicated that they planned on continuing use of the intervention strategy and would continue to include both purchased and free items as rewards.

Related to the provision of tangible rewards, each teacher received a significant amount of support from the primary researcher throughout the course of the intervention. Daily observations for treatment integrity and daily feedback may have increased the teachers' treatment implementation abilities. It is unclear if teachers could or would implement the intervention with integrity without such a high level of support.

Future Research

The positive findings from the present study suggest further research should be conducted using the GBG with older students. First, while the modified version of the

GBG was effective, it represents only one study using such techniques and would benefit from replication. Furthermore, limitations such as the use of tangible rewards and a lack of SET scores for the schools could be addressed in future studies. Another consideration is that because teachers were often moving around the classroom throughout class causing them to have to pause lecture or assisting other students to place a mark on the board and provide feedback, automating these procedures could potentially ease the administration of the GBG. Such research could include using the Class Dojo (ClassDojo, 2015) behavior tracking computer application or similar programs to allow teachers to provide immediate, consistent feedback to their students as well as give out points as part of the GBG. Lastly, while the streamlined version of the GBG targeting and reinforcing low levels of disruptive behavior resulted in concurrent improvements in academic engagement, levels averaged only 36 to 53 percent engagement across the three classrooms when the intervention was in place. Future research could determine the effects of a positive version of the GBG focusing on and reinforcing improvements in appropriate behavior with secondary level students.

Implications and Conclusion

The results of the present study indicate that a streamlined version of the GBG can be used in high school classrooms to reduce levels of disruptive behavior and increase academic engagement. Furthermore, it demonstrated that the team component may not be necessary in high school classrooms, allowing the students to work as a team to earn a reward and easing the protocol implementation for the teacher. Furthermore, the study demonstrated that the streamlined version of the GBG is consistent and can be used within a SW-PBIS system as a tier II intervention and suggests it would also be

appropriate as a system wide Tier I support. Given the successful results and high level of teacher acceptability and perceived effectiveness, this modified version of the GBG should be considered for practitioners in need of an efficient and effective strategy to target class wide behavior and teacher management problems.

APPENDIX A

TEACHER CONSENT FORM

University of Southern Mississippi

Consent Document for Research Participants

Dear Teacher,

Hello, my name is Blake Ford, and I am graduate student at Univeristy of Southern Mississippi in the School Psychology Doctoral Program. I am currently conducting my thesis, which will assess the effectiveness of a classroom based behavioral intervention. This study is being conducted under the supervision of Dr. Daniel Tingstrom.

Your classroom has been referred for inclusion in this study for elevated levels of class-wide disruptive behaviors. This intervention aims to reduce class-wide disruptive behavior and aid in classroom management procedures. Please consider the following when deciding if you will participate in this study:

Title of the Study:
An Analysis of a Variation of an Interdependent Group Contingency Intervention: The Good Behavior Game in High School Classrooms Implementing SW-PBIS

Purpose:
As previously stated, the purpose of the study is to assess the effectiveness of a class-wide intervention aimed at reducing classroom disruptive behavior. The intervention, The Good Behavior Game, utilizes classroom management and reinforcement procedures to effect change in the classroom setting. Student's levels of academic engagement will also be measured as part of the study. At the end of the study, you will be asked to rate various components and answer qualitative questions about the effectiveness of the intervention.

Procedure:
If you agree to participate in the study, you will be asked to perform several tasks aimed in improving classroom management. Prior to implementation of the interventions, you will be required to complete separate consultation and training sessions with me. The consultation session will be conducted to determine that the problem behaviors occurring in your classroom are appropriate for this study. If they are not, more appropriate services will be provided.

Following the consultation session, a series of screening observations will occur to further verify that you classroom is qualified for inclusion in the study. During this period, you will be asked to continue to implement your normal classroom management procedures for dealing with problem behaviors. You will also be asked to "mark" or "tally" each occurrence of a problem behavior that occurs during the class period. These marks will be used to determine criterion levels for the interventions.

If your classroom qualifies for participation in the study, you will be required to attend a training session with me to explain and practice the steps of each intervention. Upon displaying 100% of the steps successfully and being able to accurately describe each step, the intervention phase will begin.

The Good Behavior Game is a teacher led classroom intervention. During the intervention, you will be required to give points to the class as a result of an occurrence of disruptive behavior. The goal of the game is for the students to earn fewer marks than a preset criterion. Contingent upon beating their goal (remaining under the criterion), the class then class earns access to a reward. Each day that the intervention is in place, you will be required to state the rules of the game (a script will be provided), award marks as appropriate, and hand out rewards (which will be provided) to the winning team or teams.

Throughout the study, classroom observations will be conducted multiple times a week by myself and/or another trained graduate student from the USM School Psychology program. The observers will not interfere with you or your class during this time. The observers will be measuring levels of disruptive behavior, academically engaged behavior, and your integrity with the treatment protocol (you will be provided with a checklist to aid you in implementation). You will be provided with feedback on the implementation as needed throughout the study.

The study will take place in multiple phases, beginning with the screening phase. After a period of time implementing the intervention, it will be withdrawn for a brief period of time to allow for demonstration of experimental control. Following this period, you will re-implement the intervention again. Following this phase, your acceptability for the intervention will be assessed.

Benefits:

Agreeing to participate in this study may offer several benefits for you and your students. By participating in this study you will be trained on the implementation of a new intervention technique that can be used with other students. An additional benefit is the expected decrease in inappropriate behaviors and the increased appropriate behaviors by your students.

Risks:

There appear to be very few risks for either you or your students participating in this study. The greatest discomfort for you may be related to implementing a new procedure in the classroom. To reduce discomfort, I and/or other trained graduate students will provide training, materials, and will be available to answer any questions you may have. Your students should not experience any discomfort from the implementation of the recommended intervention.

Confidentiality:

All interviews, observations, and other information obtained during this study will be kept strictly confidential. Your name, students' names, and other identifying information will not be disclosed to any person not connected with this study. Results from this research project may be shared at professional conferences or published in scholarly journals; however, all identifying information will be removed from publications and/or presentations.

Consent:

Your participation in this study is entirely voluntarily. In addition, you may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Further services, if needed, may be provided outside the scope of this study. Whereas no assurance can be made concerning results that may be obtained (as results from investigational studies cannot be predicted) the researcher will take every precaution consistent with the best scientific practice.

If you agree to participate, please read, sign, and return the following page. Please keep this letter for your records. If you have any questions about this study, please contact Blake Ford (205.908.0952; William.b.ford@eagles.usm.edu) or Dr. Daniel Tingstrom (601.266.4594; Daniel.Tingstrom@usm.edu). This project and this consent form have been reviewed by the Human Subjects Protection Review Committee at USM, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820.

Sincerely,

_____

W. Blake Ford
School Psychologist in Training
The University of Southern Mississippi

Please Read, Sign, and Return the Following:

I have read the above documentation and consent to participate in this project. I have had the purpose and procedures of this study explained to me and have had the opportunity to ask questions. I am voluntarily signing this form to participate under the conditions stated. I have also received a copy of this consent. I understand that I will be asked to implement a classroom-based intervention called the Good Behavior Game, and observations will be conducted in the classroom on the students' behavior. In order to take part in this study, I will be required to complete a consultation session, to implement the interventions, and to complete a structured questionnaire to assess my satisfaction with the intervention. In addition, I will be trained on all of the intervention procedures by the primary experimenter or another graduate student. I further understand that all data collected in this study will be confidential and that my name and the students' names will not be associated with any data collected. I understand that I may withdraw my consent for participation at any time without penalty, prejudice, or loss of privilege.

_____ _____

Signature of Teacher *Date*

_____ _____

Signature of Witness *Date*

APPENDIX B

IRB LETTER OF APPROVAL

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 14072105
PROJECT TITLE: An Analysis of a Variation of an Interdependent Group Contingency Intervention: The Good Behavior Game in High School Classrooms Implementing SW-PBIS
PROJECT TYPE: New Project
RESEARCHER(S): William Blake Ford
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 07/25/2014 to 07/24/2015

Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX C

TEACHER SCRIPT

Introduce the Intervention:

Today we are going to have a class-wide competition. We are going to compete as a team to win one of these rewards [draw two rewards from the bag] In order to win, the class must follow these rules [read and explain the classroom rules]. Anytime someone in the class violates a rule, I will put a mark on the board in the box. As long as you don't get more than [say criterion] marks, the class will win! If you win, you will get to vote on which reward you want!

Notes to help with each intervention:

- As the class begins to understand each intervention, you can simplify the introduction. However, you must remind the class of the rules EVERY DAY!
- Begin taking marks immediately after introducing the game.
- Take marks for each occurrence of a problem behavior; however, do not give multiple points if a group of students are all violating a rule together, e.g., talking in a group.
- When you deliver a mark, explain which rule was violated and offer a replacement behavior. E.g., Point for John not paying attention. I need everyone to stay on task and participate in the lesson.
- At the end of the period allow the class to vote on which reward they want that day if they remained under the criterion.

APPENDIX D

BEHAVIOR INTERVENTIONRATING SCALE

Behavior Intervention Rating Scale (BIRS; Elliot and Von Brock Treuting, 1991)

1=Strongly Disagree 2=Disagree 3=Slightly Disagree 4=Slightly Agree 5=Agree 6=Strongly Agree

This was an acceptable intervention for the students' problem behavior(s).

1 2 3 4 5 6

Most teachers would find this intervention appropriate for behavior problems in addition to the one(s) described.

1 2 3 4 5 6

The intervention proved effective in changing the students' problem behavior(s).

1 2 3 4 5 6

I would suggest the use of this intervention to other teachers.

1 2 3 4 5 6

The students' behavior problem(s) were severe enough to warrant use of this intervention.

1 2 3 4 5 6

Most teachers would find this intervention suitable for the behavior problem(s) described.

1 2 3 4 5 6

I would be willing to use this in the classroom setting again.

1 2 3 4 5 6

The intervention would *not* result in negative side-effects for students.

1 2 3 4 5 6

The intervention would be appropriate intervention for a variety of students.

1 2 3 4 5 6

The intervention is consistent with those I have used I have used in classroom settings.

1 2 3 4 5 6

The intervention was a fair way to handle the students' problem behavior(s).

1 2 3 4 5 6

The intervention is reasonable for the behavior problem(s) described.

1 2 3 4 5 6

I like the procedures used in the intervention.

1 2 3 4 5 6

The intervention was a good way to handle these students' behavior problem(s).

1 2 3 4 5 6

Overall, the intervention was beneficial for the students.

1 2 3 4 5 6

The intervention quickly improved the students' behavior.

1 2 3 4 5 6

The intervention will produce a lasting improvement in the students' behavior.

1 2 3 4 5 6

The intervention improved the students' behavior to the point that it is not noticeably deviate from other students' behavior.

1 2 3 4 5 6

Soon after using the intervention, the teacher noticed a positive change in the problem behavior.

1 2 3 4 5 6

The students' behavior will remain at an improved level even after the intervention is discontinued.

1 2 3 4 5 6

Using the intervention should not only improve the students' behavior in the classroom, but also in other settings (e.g., other classrooms, home).

1 2 3 4 5 6

When comparing these students with well-behaved peers before and after the use of the intervention, the students' and the peer's behaviors are more alike after using the intervention.

1 2 3 4 5 6

The intervention produced enough improvement in the students' behavior so the behavior no longer is a problem in the classroom.

1 2 3 4 5 6

Other behaviors related to the problem behavior(s) were also improved by the intervention.

1 2 3 4 5 6

APPENDIX E

BEHAVIORAL OBSERVATION SHEET

Teacher Initials:_____ Date:_____ Observer:_____ IOA:_____

Interval	Disruptive Behavior	AEB		Interval	Disruptive Behavior	AEB		Interval	Disruptive Behavior	AEB
1.1				7.5				14.3		
1.2				7.6				14.4		
1.3				8.1				14.5		
1.4				8.2				14.6		
1.5				8.3				15.1		
1.6				8.4				15.2		
2.1				8.5				15.3		
2.2				8.6				15.4		
2.3				9.1				15.5		
2.4				9.2				15.6		
2.5				9.3				16.1		
2.6				9.4				16.2		
3.1				9.5				16.3		
3.2				9.6				16.4		
3.3				10.1				16.5		
3.4				10.2				16.6		
3.5				10.3				17.1		
3.6				10.4				17.2		
4.1				10.5				17.3		
4.2				10.6				17.4		
4.3				11.1				17.5		
4.4				11.2				17.6		
4.5				11.3				18.1		
4.6				11.4				18.2		
5.1				11.5				18.3		
5.2				11.6				18.4		
5.3				12.1				18.5		
5.4				12.2				18.6		
5.5				12.3				19.1		
5.6				12.4				19.2		
6.1				12.5				19.3		
6.2				12.6				19.4		
6.3				13.1				19.5		
6.4				13.2				19.6		
6.5				13.3				20.1		
6.6				13.4				20.2		
7.1				13.5				20.3		
7.2				13.6				20.4		
7.3				14.1				20.5		
7.4				14.2				20.6		

Disruptive Behavior: ____/120 = ____%

Academically Engaged Behavior: ____/120 = ____%

APPENDIX F

INTERVENTION INTEGRITY CHECKLIST

Treatment Integrity Steps	
Teacher announces the start of the game	✓ X N/A
Intervention class room rules poster is posted	✓ X N/A
Teacher reviews rules with the class	✓ X N/A
Teacher draws two possible rewards	✓ X N/A
Criterion level is told to the students and displayed on the board	✓ X N/A
Teacher reminds students of how to win the game	✓ X N/A
Teacher reliably marks at least 75% of disruptive behavior occurrences	✓ X N/A
Teacher explains why a mark was given when giving a mark	✓ X N/A
Teacher provides a replacement behavior when giving a mark	✓ X N/A
Teacher announces when the game has ended	✓ X N/A
Teacher correctly determines if the class won the game	✓ X N/A
Teacher allows class to vote on a reward	✓ X N/A
Teacher allows winning team to access the reward	✓ X N/A
Steps completed	/
Percentage of Steps completed	

a. Circle the appropriate mark for each step: ✓ for step completion, X for step omission, or N/A for not applicable.

Taken and adapted from Hunt, B. M. (2010). *The good behavior game with a preschool population* (Unpublished master's thesis). The University of Southern Mississippi, Hattiesburg, MS. and Mitchell, R. R. (2012) The effects of the good behavior game with general education high school students (Unpublished master's thesis). The University of Southern Mississippi, Hattiesburg, MS.

APPENDIX G

PROCEDURAL INTEGRITY FOR TEACHER TRAINING CHECKLIST

Procedural Integrity Steps	
The trainer explains the rules and procedures of the intervention to the teacher	✓ X N/A
The trainer reviews the teacher script with the teacher	✓ X N/A
The trainer role-plays the intervention with the teacher, allowing the teacher to act as a student in the classroom.	✓ X N/A
The trainer role-plays the intervention with the teacher, allowing the teacher to practice implementing the steps of the game.	✓ X N/A
The trainer provides appropriate feedback contingent upon teacher mistakes during the role-play implementation session	✓ X N/A
The trainer insures the teacher has a full understanding of the intervention components	✓ X N/A
Steps completed	/
Percentage of Steps completed	

a. Circle the appropriate mark for each step: ✓ for step completion, X for step omission, or N/A for not applicable.

Taken and adapted from Lambert, A.M. (2014). *Evaluating the use of tootling for improving upper elementary/middle school students' disruptive and appropriate behavior* (Unpublished doctoral dissertation). The University of Southern Mississippi, Hattiesburg, MS.

REFERENCES

Barrish, H. H., Saunders, M., & Wolf, M.W. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis, 2*, 119-124.

Blaze, J.T., Olmi, D.J., Mercer, S.H., Dufrene, B.A., & Tingstrom, D.H. (2014). Loud versus quiet praise: A direct behavioral comparison in secondary classrooms. *Journal of School Psychology, 52,* 349-360.

Christ, T. J., & Christ, J. A. (2006). Application of an interdependent group contingency mediated by an automated feedback device: An intervention across three high school classrooms. *School Psychology Review, 35*, 78-90.

ClassDojo. (2015). ClassDojo. Retrieved February 8, 2015, from http://www.classdojo.com

Clunies-Ross, H, Little, E., & Kienhuis. M. (2008). Self reported and actual use of proactive and reactive classroom management strategies and their relationship with teacher stress and student behavior. *Educational Psychology, 28,* 693-710.

Conroy, M. A., Sutherland, K. S., Snyder, A. L., & Marsh, S. (2008) Classwide interventions: Effective instruction makes a difference. *TEACHING Exceptional Children, 40*, 24 – 31

Davies, S., & White, R. (2000). Self-management and peer-monitoring within a group contingency to decrease uncontrolled verbalizations of children with attention-deficit/ hyperactivity disorder. *Psychology in the Schools, 37*, 135-147.

Donaldson, J. M., Vollmer, T.R., Krous, T., Downs, S., & Berard, K.P. (2011). An evaluation of the good behavior game in kindergarten classrooms. *Journal of Applied Behavior Analysis, 44*, 605-609.

Dunlop, T. (2013). Why it works: you can't just `PBIS' someone. *Education Digest*, *79*(4), 38-40.

Elliott, S. N., & Von Brock Treuting, M. (1991). The behavior intervention rating scale: Development and validation of a pretreatment acceptability and effectiveness measure. *Journal of School Psychology, 29*, 43-51.

Evertson, C., & Emmer, E. (1982). Preventive classroom management. In D. Duke (Ed.), Helping teachers manage classrooms (pp. 2-31). Alexandria, VA: Association for Supervision and Curriculum Development.

Flannery, K. B., & Sugai, G. (2010). School-wide PBIS implementation in high schools: Current practice and future directions. OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports. Retrieved March 11, 2015 from http://pbis.org/school/high_school_pbis.aspx

Flower, A., McKenna, J., Muething, C.S., Bryant, D.P., & Bryant B.R. (2014). Effects of the good behavior game on classwide off-task behavior in a high school basic algebra resource classroom. *Behavior Modification, 38,* 45 – 68.

Freer P., & Watson, T. S. (1999). A comparison of parent and teacher acceptability ratings of behavioral and conjoint behavioral consultation. *School Psychology Review*, *28*, 672.

Gresham, F. M., & Gresham, G. N. (1982). Interdependent, dependent, and independent group contingencies for controlling disruptive behavior. *Journal of Special Education, 16,* 101-110.

Harris, V.W., & Sherman, J. A. (1973). Use and analysis of the "good behavior game" to reduce disruptive classroom behavior. *Journal of Applied Behavior Analysis, 6,* 405-417.

Hawe, E., Tuck, B., Manthei, R., Adair, V., & Moore, D. (2000). Job satisfaction and stress in New Zealand primary teachers. *New Zealand Journal of Educational Studies, 35*, 193-205.

Higgins, J., Williams, R., & McLaughlin, T. F. (2001). The effects of a Token economy employing instructional consequences for a third-grade student with learning disabilities: A data-based case study. *Education & Treatment of Children, 24*, 99-106.

Hunt, B.M. (2010). *The good behavior game with a preschool population* (Unpublished master's thesis). The University of Southern Mississippi, Hattiesburg, MS.

Hunt, B.M. (2012). *Using the good behavior game to decrease disruptive behavior while increasing academic engagement with a headstart population* (Unpublished doctoral dissertation). The University of Southern Mississippi, Hattiesburg, MS.

Kelshaw-Levering, K., Sterling-Turner, H. E., Henry, J. R., & Skinner, C. H. (2000). Randomized interdependent group contingencies: Group reinforcement with a twist. *Psychology in the Schools, 37*, 523-533.

Kleinman, K. E., & Saigh, P. A. (2011). The effects of the good behavior game on the conduct of regular education New York City high school students. *Behavior Modification, 35*, 95-105.

Kratochwill, T. (2009). Classroom management teachers modules. American Psychological Association, Retrieved from http://www.apa.org/education/k12/classroom-mgmt.aspx

Lannie, A.L., & McCurdy, B.L., (2007). Preventing disruptive behavior in the urban classroom: Effects of the good behavior game on student and teacher behavior. *Education & Treatment of Children, 30*, 85-98.

Leflot, G., Lier, P.A.C., Onghena, P., & Colpin, H. (2010). The role of teacher behavior management in the development of disruptive behaviors: An intervention study with the good behavior game. *Journal of Abnormal Child Psychology, 38*, 869-882.

Ling, S., Hawkins, R., & Weber, D. (2011). Effects of a classwide interdependent group contingency designed to improve the behavior of an at-risk student. *Journal of Behavioral Education, 20,* 103-116.

Litow, L., & Pumroy, D. K. (1975). A brief review of classroom group-oriented contingencies. *Journal of Applied Behavior Analysis, 8*, 341-347.

Luiselli, J. K., Putman, R. F., & Sunderland, M. (2002). Longitudinal evaluation of behavior support intervention in a public middle school. *Journal of Positive Behavior Interventions, 4*, 182–188.

Lutzker, J. R., & White-Blackburn, G. (1979). The good productivity game: Increasing work performance in a rehabilitation setting. *Journal of Applied Behavior Analysis, 12*, 488.

Maag, J. W. (2002). Rewarded by punishment: Reflections on the disuse of positive reinforcement in schools. *Exceptional Children, 61*, 173-186

Martens, B.K., Witt, J.C., Elliott, S.N., & Darveaux, D. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16*, 191-198.

McCurdy, B. L., Lannie, A. L., & Bardabas, E. (2009). Reducing disruptive behavior in an urban school cafeteria: An extension of the good behavior game. *Journal of School Psychology, 47*, 39-54.

Mcgoey, K.E., Schneider, D.L., Rezzetano, K.M., Prodan, T., & Tankersley, M. (2010). Classwide intervention to manage disruptive behavior in the kindergarten classroom. *Journal of Applied School Psychology, 26*, 247-261.

Medland, M. B., & Stachnik, T. J. (1972). Good-behavior game: A replication and systematic analysis. *Journal of Applied Behavior Analysis, 5*, 45-51.

Mitchell, R. R. (2014). *Evaluating the Effectiveness of the Good Behavior Game with General Education High School Students Utilizing a Changing Criterion Component* (Unpublished Doctoral dissertation*).* The University of Southern Mississippi, Hattiesburg, MS.

Mitchell, R.R., Tingstrom, D.H., Dufrene, B.A., Ford, W.B., & Sterling, H.E. (2015). *The effects of the good behavior game with general education high school students.* (In Press).

Murphy, K.A., Theodore, L. A., Aloiso, D., Alric-Edwards, J.M., & Hughes, T.L. (2007). Interdependent group contingency and mystery motivators to reduce preschool disruptive behavior. *Psychology in the Schools, 44*, 53-63.

Najaka, S. S., Gottfredson, D. C., & Wilson, D. B. (2002). A meta-analytic inquiry into the relationship between selected risk factors and problem behavior. *Prevention Science, 2*, 257–271.

Patrick, C. A., Ward, P., & Crouch, W. D. (1998). Effects of holding students accountable for social behaviors during volleyball games in elementary physical education. *Journal of Teaching in Physical Education, 17,* 143-156.

Public Agenda. (2004). *Teaching interrupted: Do discipline policies in today's public schools foster the common good?* New York, NY.

Radley, K. C., O'Handley, R. D., & LaBrot, Z. C. (2015). A comparison of momentary time sampling and partial-interval recording for assessment of effects of social skills training. *Psychology in the Schools*, *52,* 363-378.

Reinke, W. M., Herman, K. C., & Stormont, M. (2013). Classroom-level positive behavior supports in schools implementing sw-pbis: Identifying areas for enhancement. *Journal of Positive Behavior Interventions, 15,* 39-50.

Ruiz-Olivares, R., Pino, M.J., & Herruzo, J. (2010). Reduction of disruptive behaviors using an intervention based on the good behavior game and the say-do-report correspondence. *Psychology in the Schools, 47*, 1046-1058.

Saigh, P. A., & Umar, A.M. (1983). The effects of a good behavior game on the disruptive behavior of Sudanese elementary school students. *Journal of Applied Behavior Analysis, 16*, 339-344.

Schanding, G.T., & Sterling-Turner, H.E. (2010). Use of the mystery motivator for a high school class. *Journal of Applied School Psychology, 1,* 38-53.

Scott, T. M., & Barrett, S. B. (2004). Using staff and student time engaged in disciplinary procedures to evaluate the impact of school-wide PBS. *Journal of Positive Behavior Interventions, 6,* 21-27.

Shaw, R., & Simms, T. (2009). Reducing attention-maintained behavior through the use of positive punishment, differential reinforcement of low rates, and response marking. *Behavioral Interventions, 24*, 249-263.

Skiba, R., Peterson, R., & Williams, T. (1997). Office referrals and suspension: disciplinary intervention in middle schools. *Education & Treatment of Children, 20*, 295-315.

Southern Poverty Law Center. (2008). Reducing student and teacher dropout rates in Mississippi. Retrieved from Mississippi Youth Justice Project website: http://www.splcenter.org/get-informed/publications/reducing-student-and-teacher-dropout-rates-in-mississippi

Swain, J. J., Allard, G. B., & Holborn, S. W. (1982). The good toothbrushing game: A school based dental hygiene program for increasing the tooth brushing effectiveness of children. *Journal of Applied Behavior Analysis, 15*, 171-176.

Swiezy, N.B., Matson, J.L., & Box, P. (1992). The good behavior game: A token reinforcement system for preschoolers. *Child and Family Behavior Therapy*, *14*, 21-32.

Tanol, G., Johnson, L., McComas, J., & Cote, E. (2010). Responding to rule violations or rule following: A comparison of two versions of the good behavior game with kindergarten students. *Journal of School Psychology, 48*, 337-355.

Tillery, A. D., Varjas, K., Meyers, J., & Collins, A. S. (1992). General education teachers' perceptions of behavior management and intervention strategies. *Journal of Positive Behavior Interventions, 12,* 86-102.

Tingstrom, D., Sterling-Turner, H., & Wilczynski, S. (2006). The good behavior game: 1969-2002. *Behavior Modification, 30*, 225-253.

Uebersax, J. (1982). A design-independent method for measuring the reliability of psychiatric diagnosis. *Journal of Psychiatric Research*, *17*, 335–342.

U.S. Department of Education. (2005). U.S. department of education, national center for education statistics, mobility in the teacher workforce: Findings from the condition of education, 22. Retrieved February 8, 2015, from http://nces.gov/pubs2005/2005114.pdf

Von Brock, M. B., & Elliott, S. N. (1987). Influence of treatment effectiveness information on the acceptability of classroom interventions. *Journal of School Psychology, 25*, 131–144.

Watkins, M. W., & Pacheco, M. (2000). Interobserver agreement in behavioral research: Importance and calculation. *Journal of Behavioral Education, 10*(4), 205-212.

Winbinger, B., Katsiyannis, A., & Archwamety, T. (2000). Disciplinary practices in Nebraska's public schools. *Journal of Child and Family Studies, 9*, 389-399.

Witt, J.C., & Martens, B.K. (1983). Assessing the acceptability of behavioral interventions used in the classrooms. *Psychology in the Schools, 20*, 510–517.

Witt, J.C., & Elliot, S.N. (1985). Acceptability of classroom intervention strategies. In T.R. Kratochwill (Ed.), *Advances in School Psychology, 4,* 251-288.