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Investigating the Use of a Positive Variation of the Good Behavior Game in a High School Setting

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The University of Southern Mississippi

INVESTIGATING THE USE OF A POSITIVE VARIATION OF THE GOOD
BEHAVIOR GAME IN A HIGH SCHOOL SETTING

by

Shauna Lynne

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 Science

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August 2015

ABSTRACT

INVESTIGATING THE USE OF A POSITIVE VARIATION OF THE GOOD BEHAVIOR GAME IN A HIGH SCHOOL SETTING

by Shauna Lynne

August 2015

The Good Behavior Game (GBG) is an example of an interdependent group contingency that can be used in classrooms to manage behavior. The purpose of this study is to evaluate the effectiveness of a positive variation of the GBG in which teachers attend to rule-following behavior, as opposed to the original version of the game in which teachers attend to rule-breaking behavior. In previous studies, researchers have demonstrated the effectiveness of the GBG in decreasing problematic behavior and/or increasing productive or desired behavior in classroom settings and in hospital settings and spanning preschool-aged, elementary toddlers to high school-aged adolescents. An A/B/A/B withdrawal design was used across three classrooms to evaluate the effectiveness of the positive variation of the GBG. Reductions in disruptive behavior occurred in all three classrooms during intervention phases; increases in appropriately engaged behavior increased during intervention phases in all three classrooms as well. This study demonstrated that a positive variation of the GBG could be used effectively within a general education high school setting.

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LIST OF ABBREVIATIONS

<i>GBG</i>	Good Behavior Game
<i>AEB</i>	Appropriately Engaged Behavior

CHAPTER I

INTRODUCTION

Classrooms are complex environments in which exchanges between students and teachers should foster positive outcomes. This goal is jeopardized when students exhibit disruptive behavior. In classrooms where disruptive behavior is managed effectively, students benefit via improved learning rates (Gaskins, Herres, & Kobak, 2012). When students engage in disruptive behavior they may miss opportunities to learn while adversely affecting the learning experiences of their peers. Additionally, disruptive behavior has been associated with teacher stress/burnout (Abel & Sewell, 1999; Friedman, 1995; Hastings & Bham, 2003), and a teacher who is compromised emotionally may not be performing at an optimal level.

Students who continually exhibit disruptive behavior are more apt to experience school disengagement (Bidell & Deacon, 2010) which may result in a number of negative outcomes, including dropping out of school altogether (Farmer & Farmer, 1999) and consequently, those who drop out of school often have limited skills to take with them into the workforce. Further, Robins (1981) found that problem behavior in adults was linked to disruptive behavior in childhood. Thus, the need to curb disruptive behavior is imperative to addressing school-wide issues and broad societal concerns as well.

Schools manage disruptive behavior in a variety of ways; typical methods are reactive in nature or focused on punitive approaches which include parent conferences, in-school suspension, out-of-school suspension, alternative placements and expulsion (Dinkes, Kemp, & Baum, 2009). Increasingly though, schools are taking measures to use more proactive approaches. With the reauthorization of the Individuals with Disabilities

Education Improvement Act (IDEA, 2004), schools are required to consider positive behavior supports in the case of students whose behavior impedes their learning or the learning of others. The No Child Left Behind Act (NCLB) places an emphasis on the use of scientifically-based methods for schools receiving federal funding under its provisions. In light of this, an ever growing number of schools are adopting school-wide positive behavioral support (PBS) programs which focus on “making problem behavior less effective, efficient, and relevant and making desired behavior more functional” (Sugai et al., 2000, p. 134).

PBS is an empirically-based continuum of support which is organized into tiers or levels designed to be preventative, proactive and include a means of monitoring progress (Sugai & Horner, 2002a). The first tier (Tier I) of support is a school-wide system meant for all students, staff and settings; the goal of which is to prevent problem behavior by teaching desired behavior, optimizing academic progress and inhibiting agents of undesired (disruptive) behavior (Sugai & Horner, 2002b). The aim of the second tier or level (Tier II) of a PBS system is to decrease problem behavior by increasing access to reinforcement for appropriate behavior. Supports in Tier II include specialized features which are delivered to groups of students who, in spite of Tier I programming continue to exhibit problem behavior. If students continue to demonstrate problem behavior while experiencing appropriate Tier I and Tier II levels of support, then the most individualized supports are provided for students at Tier III. These services may be delivered in a small group or one-on-one format.

Schools use a variety of interventions to meet the needs of students on each tier of supports in a PBS system. Group contingencies, are typically used as Tier II

interventions for students or settings in which Tier I measures have been ineffective or not as effective as desired. There are three types of group contingencies: 1) the independent type, in which the outcome for each student is only contingent upon their own behavior and not that of the entire group, 2) the dependent type, in which the outcome for the entire class is determined by the performance of one, or a few select students, and 3) the interdependent type, which bases the outcome for the entire class or group upon its communal ability to meet a specified criterion (Litow & Pomroy, 1975). Noted benefits of using group contingencies include the following: (1) that reinforcement can be allocated in an efficient way, (2) they require minimal effort and time from the teacher, and (3) they are relatively easy to train and execute in a classroom (Theodore, Bray, Kehle, & DioGuardi, 2004).

Barrish, Saunders, and Wolf (1969), introduced the Good Behavior Game (GBG) as an interdependent group contingency which was initially designed to reduce problem behavior in classroom settings. Over time, the GBG has gained popularity and has been adapted to a variety of educational settings including rural, urban and suburban contexts; it has been successful in the amelioration of problem behaviors, and in the shaping of appropriate behavior as well (Tingstrom, Sterling-Turner, & Wilczynski, 2006). One author (Embry, 2002) even recommended the GBG to be considered as a behavioral vaccine, because of its documented short and long-term effects in decreasing aggression and disruptive behavior (Kellam et al., 2011).

The Good Behavior Game

The GBG was introduced (Barrish et al., 1969) in a 4th grade classroom of 24 students. Several students had been referred for out-of-seat behavior, inappropriate

vocalizations, uncooperativeness, and general classroom disruption. The two target behaviors, out-of-seat behavior and talking out, were identified by the experimenter with the help of the principal and teacher. In the classroom, the teacher divided the class into two teams and explained the classroom and game rules. The teacher further indicated that when a student violated a rule, a mark would be written on the board under the student's team. If a team received five or less marks during their math period, that team (or both teams) would win and receive a reward. If a team received no more than 20 marks in a week, the team members would be allowed to go to recess early.

Using an A/B/A/B with a multiple baseline element across classes experimental design, data were collected during math and reading periods. During baseline, talking-out behavior was observed at a median of 96% of intervals and median intervals of out-of-seat behavior observed were approximately 82%. When the GBG was applied during the math period, there was a sharp decline to medians of approximately 19% and 9% respectively. Percentages of interval data were not reported for changes in other phases, however, the authors reported that the implementation of the GBG was followed by reductions in problem behavior during subsequent phases.

As a follow up to the 1969 initial GBG study, Medland and Stachnik (1972) investigated the effects of the GBG on the behavior of 28 5th grade students enrolled in a public school. Target behaviors included out-of-seat behavior, talking out and disturbing other students. The experimental design encompassed six phases: Baseline1, Game1, Baseline2, Rules, Rules + Lights and Game2. In the Game phases, experimenters used the original design of the GBG (splitting class into teams, developing and reviewing class rules and giving marks for each violation of the rules) and combined it with a light

system in which a green light signaled that the team was exhibiting appropriate behavior and a red light signaling to the team that a team member had violated the rules. During the Rules-only phase, the teacher would review the classroom rules each day, and in the Rules + Lights phase, the GBG was not in place, but the light system was used, and rules were reviewed each day. Game phases resulted in the lowest occurrences of observed disruptive behavior (an average of approximately five occurrences per session, per team), while observed occurrences of disruptive behavior were higher in the Rules-only (an average of approximately 29 occurrences per session, per team) and Baseline phases (an average of 85 occurrences per session, per team). Less disruptive behavior was observed in the Rules + Lights phase (an average of seven occurrences per session, per team), but not as low as levels in the Game phases.

Harris and Sherman (1973) examined, using a multiple baseline design: 1) if the GBG would be effective in different classrooms, (2) what components were responsible for change in disruptive behavior, and (3) whether there would be a collateral effect on academic performance. Participants were students of two classrooms, 22 5th grade students and 28 6th grade students. Target behaviors were disruptive behavior (which included talking out and out-of-seat behavior). Academic performance, specifically, the number of math problems correct was also measured in the fifth grade classroom as a secondary dependent variable.

After baseline, each classroom was divided into two teams, and the GBG was introduced. Winning teams were given permission to leave school 10 minutes early. Researchers employed four manipulations to analyze the components of the GBG. The manipulations were as follows: 1) the reward for the winning team was eliminated; 2) the

criterion to win was changed from eight marks to four marks, then back to eight marks, then to four marks again; 3) public display of marks for each team was eliminated; 4) the class was not divided into teams, but was regarded as a whole.

When reporting the results of this study, the authors neglected to report exact percentages of intervals of all behaviors observed, preferring instead to use estimates and other descriptions to convey their findings. Regarding talking-out behavior, the authors reported that at baseline, it occurred on average “at or near 100% in both math periods” (Harris & Sherman, 1973, p. 409), and following implementation of the GBG, and talking-out behavior declined to an average of 8% of intervals observed. Regarding out-of-seat behavior, the authors reported that the percentage of occurrence was “above 50%” (Harris & Sherman, 1973, p. 409), but after implementation of the GBG, out-of-seat behavior declined to an average of 2% of intervals observed. Similar effects were described for the sixth grade classroom as the authors reported that disruptive behavior decreased from baseline levels and was maintained at a lower level during the entire Game phase. For the 1st manipulation in the 6th grade class, the reward was eliminated. Decreases in problem behavior were still observed, however when rewards were given to the winning team, the authors report that the decreases were greater, although no numerical data were presented to support this statement. Next, the researchers noted changes in behavior due to criterion changes; when the criterion was set at eight, disruptive behavior was higher than when the criterion was set at four. Researchers also observed that whether feedback was public or withheld, it was not observed to have an impact on levels of disruptive behavior as occurrences stayed approximately the same. Further, the authors stated that when the class played as a whole, results were variable.

Regarding academic performance, the authors reported that 5th grade students were more accurate in math problems completed during Game phases.

The GBG had been evaluated in only general education settings until a 1979 study, in which Hegerle, Kesecker, and Couch investigated the use of the GBG in a self-contained special education classroom. Target behaviors were out-of-seat and talking-out behaviors. The GBG was played in the same way as the original version (Barrish et al., 1969) for 45 minutes per day over a five-week period. Researchers carried out the intervention four of five weekdays; on Fridays, the teacher would implement the GBG. At the end of the five-week period, the criterion for students to obtain a reward had decreased from 25 marks per team during baseline, to two marks. There were large decreases in the amount of out-of-seat (68%) and talking-out behavior (52%) once the GBG was implemented and by the 5th week of implementation, talking-out had decreased 81% and out-of-seat behavior had decreased 89%.

GBG studies were conducted only in North American classrooms until Saigh and Umar (1983) examined the use of the GBG with students in rural Sudan. Participants were 20 students in a 2nd grade classroom. Target behaviors were identified as verbal disruption, physical disruption, and seat leaving and the researchers employed an A/B/A/B design. A five-week adaptation period was followed by a baseline phase in which no new contingencies were in place; however a poster board with a list of undesirable behaviors was posted in the front of the classroom, and rule violations were handled in the typical way. Verbal disruption was observed an average of 12% of intervals, while physical disruption was observed an average of 8.5 %, and seat-leaving was observed an average of 9.6% of intervals. When the GBG was introduced, the

teacher announced to the class that they would play a game during one fifty-minute session for six days. The teacher further explained that a check mark would be placed on the board for rule violations and that check marks would count against the team and might result in a loss of privileges for the entire team. Daily winners received an additional 30 minutes of free time after recess, and weekly winners would receive officially stamped letters regarding good behavior sent to their homes. During both Game phases, considerable reductions in verbal disruption (2.9%), physical disruption (1.9%) and seat-leaving (4.7%) were observed.

Almost exclusively, the focus of GBG publications was on student behavior, but in 2007, Lannie and McCurdy investigated the effects of the GBG on *both* student and teacher behavior. The participants in this study were 22 1st grade students, and target behaviors were disruptive behavior which was measured using a partial interval recording method and on-task behavior which was measured using momentary time sampling. Observations were conducted in 10 minute sessions, and teacher behavior was also observed and defined across three categories (1) positive (praise statement following student behavior) (2) neutral (statements without a positive, negative or instructional connotation) and (3) negative (warning or negative statement following student behavior). Teacher statements were recorded with a frequency count during every 4th interval, which resulted in 15 observations of teacher behavior for each 10 minute observation that was conducted. Researchers used an A/B/A/B withdrawal design. During baseline, on-task behavior was observed during an average of 53% of intervals, and disruptive behavior occurred during an average of 37% of intervals observed. Results indicated that during the final GBG phase, on-task behavior occurred during an

average of 76% of intervals observed and disruptive behavior was observed during an average of 25% of intervals. However, implementation of the GBG, even after providing feedback, did not result in higher levels of praise or positive statements from the teacher.

In a similar investigation of the impact of the GBG on disruptive and on-task behavior, Hunt (2012) investigated the effectiveness of the GBG in decreasing disruptive behavior and increasing academic engagement in class-wide behavior, as well as in three target students. The GBG was played similarly to the original version (Barrish, et al., 1969), only changing that team configurations were not always the same. Participants included three preschool classrooms within the general education setting. Each teacher was asked to nominate one student who exhibited more problem behavior than peers, and data for class-wide behavior, as well as for the target students, were collected for each phase. During the baseline phase, Classroom A demonstrated disruptive behavior an average of 67% of intervals observed, Classroom B demonstrated disruptive behavior an average of 50% of intervals observed, and Classroom C demonstrated disruptive behavior an average of 46% of intervals observed. Academic engagement occurred during an average of 32% of intervals observed for Classroom A and an average of 50% and 54% for Classrooms B and C, respectively. All three classrooms demonstrated decreases in disruptive behavior and increases in academic engagement after the GBG was introduced and maintained throughout the Game phase. Specifically, for Classroom A, disruptive behavior was observed during an average of 22% of intervals observed; for Classroom B, 14% of intervals observed, and 9% for Classroom C. Academic engagement, increased for Classrooms A ($M = 78\%$), Classroom B ($M = 90\%$) and for Classroom C ($M = 91\%$).

Similar effects were demonstrated in each target student, as the GBG resulted in decreased disruptive behavior and increased academic engagement.

While the majority of research with the GBG has been conducted in classroom settings, its effectiveness has also been demonstrated in non-classroom settings. McCurdy, Lannie, and Barnabas (2009) examined the effects of the GBG in the cafeteria of a public elementary school (grades K-6). There were three lunch periods, each serving approximately 200 students. 10 non-instructional school staff members facilitated the game and were responsible for approximately 30 to 35 students per lunch period. Target behaviors were disruptive behaviors which included out of seat behavior, play fighting, physical contact with force, throwing objects, and screaming. When disruptive behavior occurred, the staff member would tell the team what rule was violated and assign the group a tick mark. On a weekly basis, teams were identified as winners if their tick marks did not exceed a pre-set criterion. Rewards for winning teams included edibles, small tangibles, certificates to earn movie time, and classroom parties. Researchers used a multiple baseline design across lunch periods to evaluate the impact of the GBG on disruptive behavior. Upon implementation, all lunch periods demonstrated an immediate decrease in disruptive behavior and maintained a lower level of disruptive behavior throughout the course of the GBG condition.

Mitchell (2012) also investigated the use of the GBG with high school students in a general education setting. Three general education high school classrooms participated in the study. Targeted behaviors included inappropriate vocalizations, off-task behavior and out-of-seat behavior. During baseline or withdrawal phases, teachers were asked to conduct class as they typically would without any elements of the GBG. During Game

phases, teachers would explain rules of the Game, divide the class into two teams, and indicate inappropriate behavior by placing a mark under the offending team member's team name on the whiteboard at the front of the class. A partial interval recording procedure was used to collect data on the occurrences of disruptive behavior across each classroom and an A/B/A/B withdrawal design was employed to evaluate treatment effects across classrooms. During baseline, Classroom A exhibited disruptive behavior in an average of 67% of intervals observed; Classroom B, during an average of 74% of intervals observed, and an average of 65% of intervals observed for Classroom C. Results indicated that after initial implementation of the GBG, disruptive behavior decreased immediately for each classroom ($M = 30%$, $35%$, and $27%$ for Classrooms A, B, and C, respectively). One classroom discontinued participation in the study before the withdrawal phase, but an immediate increase in disruptive behavior was observed in the other two classes remaining during the withdrawal phase. Specifically, disruptive behavior occurred during an average of 50% of intervals observed for Classroom A, and an average of 57% for Classroom C. Finally, the classrooms reinstated the GBG procedures, and an immediate decrease in disruptive behavior was observed and maintained throughout the last GBG phase for Classroom A ($M = 26%$) and Classroom C ($M = 27%$).

Positive Variations of the GBG

Robertshaw and Hiebert (1973) examined the effects of an interdependent group contingency on a 1st grade general education classroom including one target student referred by the teacher for problematic behavior. In the experimental phase, *The Astronaut Game* was implemented. Students were divided into six teams and were told

that they could earn tokens for each page of class work completed, and for demonstrating *good astronaut behavior* which included rules that the class had determined were appropriate before the game was implemented. At the end of each day, all tokens were collected, and the team with the most tokens would win first choice in free time activities for the remainder of class time. Available activities were unknown to students until after the token count had occurred, and included options such as using the tape recorder and playing card games.

Target behaviors included inattentive behaviors for the target student, which were defined as looking in a non-task related direction, talking/gesturing to others, tapping with a pencil or playing with other objects. Results indicated that the target student's inattentive behavior was an average of 44% during baseline; once the game was introduced the percentage of inattentive behavior observed decreased to 8% and averaged at 4% across the intervention phase. Data were also collected on the target student's attention-to-task behavior and the authors reported that percentage of attentiveness increased from 56% of intervals observed to 96% during the intervention phase. As for the entire class, the dependent variable was the number of seatwork papers completed. During baseline the class averaged, per week, 9.5 papers per student; during the GBG phase, the average immediately increased to 18 weekly papers per student. At the end of the GBG phase, the average had increased to 36 papers, on average, per student per week.

The Principal Game (Darch & Thorpe, 1977) was based on the original GBG (Barrish et al., 1969) and modified by awarding points to teams in which all members were engaging in on-task behavior upon an audible cue while all inappropriate behavior was ignored and by using contingent principal attention as a reward. The experimenters

also compared the interdependent group contingency with an independent group contingency in which each student earned points, not for their team, but for individual attention from the principal. All students in the 4th grade, general education classroom participated, however observers collected data on both the on-task and off-task behavior of 10 target students in the classroom who were identified by the teacher as being the most disruptive in the class.

A withdrawal A/B/A/C/A design was employed in the experiment, and researchers reported results in terms of on-task behavior, exclusively. During the baseline phase, students engaged in on-task behavior for an average 26% of intervals observed. During the first day of the modified GBG (*The Principal Game*) on-task behavior increased to 90% and was maintained through the phase for an average of 86%. During the Baseline 2 phase, on-task behavior decreased to an average of 51% and was on a decreasing trend until the independent group contingency was introduced, at which time on-task behavior increased to 84% and was maintained at an average of 75% throughout the phase. Finally, intervention was withdrawn again and on-task behavior decreased to an average of 34% over three observations in the third withdrawal phase. Results showed that although the interdependent and independent group contingencies were both successful at increasing on-task behavior, the interdependent group contingency achieved higher levels of on-task behavior from students.

In another effort to shape and improve behavior, components of the GBG were utilized to increase productivity in four state hospital residents who were given the task of sorting boards by size (Lutzker & White-Blackburn, 1979). The group was divided into two teams and engaged in a pseudo-competition (deemed a pseudo-competition because

both teams always received the reward) in which each team, for performance, would be rewarded with candy or early work termination. Researchers reported improvements in work output and staff continued to use the GBG even after the study had been terminated.

Fishbein and Wasik (1981) observed 25 students in a 4th grade class at a North Carolina elementary school. The target behaviors were categorized as task relevant behavior, off task behavior and disruptive behavior. The GBG was played in both the library and the classroom and included three adaptations that differed from the original version. First, the students were included in the formulation of the rules. Second, the rules were all stated in a positive way, instructing students what to do instead of what not to do. Lastly, teams earned points when a member of the team was exhibiting behavior in accordance with the rules. After baseline observations, the researchers implemented an Intervention A phase, an Intervention B phase, and then an Intervention A phase again. Intervention A phases indicated those in which rewards were given to the winning team(s) and the Intervention B phase indicated a phase in which no rewards were given to the winning team(s). During baseline, on-task behavior averaged 73% of intervals observed, off-task behavior averaged 9% of intervals observed, and disruptive behavior averaged 18% of intervals observed. Upon implementation of the Intervention A phase, a reported average increase was observed in on-task behavior (21%), and reported average decreases were observed in off-task behavior (5.7%) and disruptive behavior (16%).

When the Intervention B phase (GBG without rewards) was introduced, target behavior was reported to trend toward baseline behavior, although no percentages were reported for this phase or the second Intervention A phase, in which observed intervals of on-task behavior once again increased and disruptive and off-task behavior decreased.

In another study (Swain, Allard, & Holburn, 1982), the GBG was employed to shape and improve an adaptive behavior: tooth brushing. Participants included in the study were 22 1st grade students and 23 2nd grade students. At the beginning of the program, each child's teeth were checked for dental wellness, and each child received a dental kit containing dental supplies. The Simplified Oral Hygiene Index was utilized to measure the cleanliness of the children's teeth using scale criteria. The children were taught about oral hygiene, divided into teams, and it was explained that they would be participating in a game and competing to be the team with the cleanest teeth. On a daily basis, four children from each team were randomly chosen, and their teeth were examined and rated. Better scores were praised and all children received verbal feedback regarding how to improve brushing. Lower scores were indicative of better hygiene. The team with the lowest score was announced as the winner. The winning team members' names would be placed on the winner's poster, and each team member also received a sticker.

An A/B design was used with the addition of a follow up phase which occurred nine months after the GBG phase was terminated. Results demonstrated greatly improved ratings of oral hygiene immediately when the GBG was implemented and throughout the entire time of its administration in both classrooms. Data were collected once more nine months after the GBG had ended. Eight children were assessed on three consecutive days until each child had been checked at least one time. Ratings of oral hygiene were still comparable with those within the Game phase.

In a 1984 study, Darveaux investigated the effects of the GBG on academic behavior by adding a merit component (GBG+M) to the traditional version of the GBG.

It was hypothesized that the addition of this component would mitigate weaknesses in the GBG as noted by the author, including 1) requiring the teacher to monitor undesirable behavior exclusively which may reinforce attention-maintained disruptive behavior, 2) if the attention of the teacher is focused on inappropriate behavior, then all behaviors including those considered desirable (i.e., class participation) may decrease and inhibit motivation toward learning, and 3) the emphasis is on what *not* to do and thus, lacks in motivating appropriate behaviors in the classroom.

Participants in the study were two 2nd grade students; each had a history of behavior problems in class and on a daily basis completed less than half of the assignments given. The class of 24 students was divided into two teams, one target student per team. Some of the components of the original GBG were maintained in this variation of the game. Marks were made on the board each time a student violated a rule, and teams competed to keep their number of marks below an established criterion. However, teams could still win even if accumulating marks above the criterion by obtaining merits. Merits, components not featured in the original GBG, were given to students when they completed assignments at 75% accuracy, and when they actively participated in the classroom. One point was erased from the board for every five merits earned by a team, meaning that students had the opportunity to make up for disruptive behavior by exhibiting academic engagement.

An A/B/A/B withdrawal design was utilized, and both students were observed for disruptive behaviors only, which included talking out, inappropriate vocalizations, out-of-seat behavior, excessive movement while seated, and tattling on other students. Results indicated that GBG+M reduced disruptive behavior and increased the amount of

productivity in assignment completion from an average of 40% to 75% during treatment phases.

Swiezy, Matson, and Box (1992) also implemented a variation of the GBG in which positive behaviors were rewarded, while disruptive behaviors were ignored. Participants in the study included four students attending a church-affiliated preschool. The GBG was fully implemented by two graduate students who explained to students that the GBG would only be played during certain time periods each week. During the GBG they would be prompted by a puppet *Buddy Bear* to work cooperatively to complete certain tasks. If a certain criterion was met, the dyad (each student had a partner) would win a small edible reward. If dyads concurrently complied with 10 commands, or if they surpassed the set criterion by 150%, they would win bonus points and extra rewards. Noncompliance with commands was ignored during the experimental phase. Treatment effects were observed for both dyads with each therapist as compliance increased approximately 63% for Dyad A (Baseline, $M = 11.7%$; GBG, $M = 74.7%$) and 49% for Dyad B (Baseline, $M = 27.3%$; GBG, $M = 76.5%$).

Original Version of the GBG Compared with Positive Variations

In their 2010 study, Tanol, Johnson, McComas, and Cote sought to examine the differential effects of two versions of the GBG (e.g., GBG-response cost and GBG-reinforcement) on student and teacher behavior, as well as the acceptability of the two versions. Participants were six male target students in two kindergarten general education classrooms who were referred by their teachers for engaging in disruptive behavior more often than their classmates and who were at risk, or already identified as having an emotional behavioral disorder. The two classroom teachers developed and

shared the same rules in both classrooms. The 1st rule instructed students to stay in their designated space and not to leave it without permission. The 2nd rule directed students to pay attention to instructional activity in the classroom. *Rule following* was defined as following both rules as described above, for each interval observed. *Rule violating* was defined as a violation of one or more of the rules for each interval observed.

Results for student behavior were reported in terms of rule violating behavior only, as the authors asserted that rule-following and rule-violating behavior were mutually exclusive. Data were also collected on teacher behaviors, which included praise and response to rule violations. Teacher praise was described as a teacher statement to a target student, a group that the target student was in, or the entire class, reflecting compliance to any classroom rule. Teacher response to rule violations was described as redirections or disapproving statements in response to noncompliance with either of the classroom rules.

Partial interval observations lasted for ten minutes, using 10 second intervals. During observation sessions, data were collected for both student and teacher behavior. The researchers utilized an A/B/A/C/B/C withdrawal design to evaluate the effects of the two versions of the GBG. The GBG was played for 10 minutes per day, five days per week, for eight weeks.

In the GBG-response cost, all teams began with four stars on their team poster. When any student violated the rules, the teacher would state that a rule had been violated and would remove a star from the offending student's team. Each time the teacher made a statement regarding a rule violation, the teacher was also asked to deliver a praise statement to another team that was following the rules. At the end of the Game, teams

with one or more stars remaining would win a small edible reward. If teams had one or more stars remaining for two days or more, they would receive a tangible reward, such as a pencil, eraser or winner's medal.

In GBG-reinforcement, each team started with a blank poster and once the GBG was initiated, the teacher would award stars to teams who were following the rules. The teacher determined the rate of praise and stars delivered, and rule violations were ignored. At the end of the GBG, teams with at least 3 stars earned a small edible reward; if any team reached this criterion for two or more days during the week, they would win a small tangible reward just as in GBG-response cost.

Across all target students, rule violations occurred at approximately 50% of observed intervals during baseline. Results indicated that GBG-response cost and GBG-reinforcement were effective at decreasing rule violations for all six target students, however the authors indicated that GBG-reinforcement resulted in comparable or lower levels of rule violations. Further, it was reported that in addition to teachers producing more praise statements and ignoring rule violations, the GBG-reinforcement condition produced "slightly better effects" (Tanol et al., 2010, p. 351). However, it is noted that due to the high overlap across GBG conditions this analysis should be considered with caution.

Acceptability was measured using a Likert-type questionnaire (ranging from 1=strongly disagree to 5=strongly agree), comprised of 10 items and created by the authors. Teachers were asked to rate each version of the GBG after their first exposure and also interviewed at the end of the study and asked which version of the GBG they preferred and what the reason for their preference was, if they answered affirmatively to

the first question. The teacher of Classroom 1 rated both versions of the GBG as acceptable, with a median rating of 4 for each of the ten items on both questionnaires. Answers ranged from 3 to 5. The teacher of Classroom 2 rated both versions of the GBG as acceptable, with a median rating of 5 for each of the ten items on both questionnaires. Answers ranged from 4 to 5. When interviewed, both teachers reported that they preferred the GBG-reinforcement version of the game and indicated that they believed it created a more positive classroom environment, although a clear preference for one version or the other was not apparent in the written measure of acceptability.

Wright and McCurdy (2011) also sought to compare two versions of the GBG, while analyzing the acceptability and effectiveness of each version as well. Participants were students of a fourth grade general education classroom and a kindergarten general education classroom. Specifically, Wright and McCurdy (2011) compared the original version of the GBG with a positive variation called the Caught Being Good Game (CBGG) in which the teacher scanned the classroom on a variable interval schedule and awarded points to teams if all members were on task.

The primary dependent variable was disruptive behavior, which included both verbal and physical behaviors not conducive to a productive classroom environment. Data were collected on a secondary dependent variable as well, which was on-task behavior and included behaviors indicative of a student attending to, or actively participating in classroom activity. Observation sessions occurred daily for 20 minutes in each classroom using a combination of momentary time sampling and partial interval recording methods. Researchers used a multi-phase design including a withdrawal phase for each classroom to evaluate data collected.

The GBG was introduced to the kindergarten classroom after variable levels of on-task ($M = 70\%$) and disruptive behaviors ($M = 50\%$) were observed during baseline, and resulted in an immediate decrease in disruptive behavior ($M = 27\%$), as well as an increase in on-task behavior ($M = 88\%$); both were maintained throughout the initial GBG phase with greater stability than in the baseline phase. The GBG was withdrawn and both disruptive behavior ($M = 51\%$) and on-task behavior ($M = 66\%$) returned to baseline levels. Following the withdrawal phase, the CBGG was implemented and resulted in lower levels of disruptive behavior ($M = 28\%$), similar to those observed in the GBG phase, however, on-task behavior decreased as well ($M = 78\%$) and was sustained at lower levels than what was observed during the GBG condition.

In the 4th grade classroom, relatively stable levels of on-task ($M = 74\%$) and disruptive ($M = 30\%$) behavior were observed during baseline. The CBGG was then introduced and resulted in an immediate increase in on-task behavior, which was maintained throughout the phase ($M = 95\%$). A decrease in disruptive behavior was observed and continued in a decreasing trend while the CBGG was being implemented in the classroom ($M = 12\%$). Following the withdrawal of the CBGG, student on-task behavior decreased ($M = 78\%$) and disruptive behavior increased to similar levels observed during baseline ($M = 36\%$). Following implementation of the GBG, on-task behavior increased again ($M = 87\%$), while disruptive behavior decreased ($M = 14\%$), although not to levels observed during the CBGG phase. In both classrooms, the second intervention seemed to have a lesser effect on the on-task behavior of students. The researchers discuss that a reason for this may be that the intervention, whether the GBG or CBGG were novel when introduced to the class the first time. When the second

intervention was introduced, perhaps the novelty had worn off, thereby decreasing the impact on the on-task behavior of students.

To assess acceptability, after each treatment condition teachers completed the Intervention Rating Profile (IRP-15; Martens, Witt, Elliot, & Darveaux, 1985) and students completed the Children's Intervention Rating Profile (CIRP; Turco & Elliot, 1986). The teachers rated both games as acceptable, although the kindergarten teacher rated the CBGG six points higher (78, possible range 15-90), and the 4th grade teacher rated the GBG higher by three points (71). Students also rated both the GBG and CBGG as acceptable, although a preference was not apparent in their ratings. Of a possible 6-18 points, kindergarten students rated the GBG ($M = 9.23$) slightly higher than the CBGG ($M = 9.13$); 4th grade students also rated the GBG ($M = 14.00$) slightly higher than the CBGG ($M = 12.83$). The comparability of these scores is questionable as the scores are so close in value.

Purpose of the Present Investigation

The effectiveness of the original version of the GBG as a behavior management strategy has been demonstrated across a variety of behaviors, age groups, and settings. However, potential concerns with the original design of the game include peer aggression toward rule violators (Skinner, Cashwell, & Dunn, 1996), although this phenomenon has not appeared in any reviewed GBG study, thus far. Another potential concern is that teacher attention is focused solely or more heavily on disruptive behavior (Darveaux, 1984). This study sought to determine if a positive variation of the GBG would affect disruptive and appropriately engaged behavior in classrooms in a general education high school setting. Previous studies have investigated the effects of a positive variation of the

GBG with preschool, kindergarten, 1st, 2nd and 4th grade students (Darch & Thorpe, 1977; Darveaux, 1984; Fishbein & Wasik, 1981; Robertshaw & Hiebert, 1973; Swain et al., 1982; Swiezy et al., 1992; Tanol et al., 1982; Wright & McCurdy, 2011), but have not done so in a general education high school setting. The following research questions were investigated:

1. Will the implementation of a positive variation of the GBG result in a decrease in class wide disruptive behavior and an increase in appropriately engaged behavior within a general education high school classroom setting?
2. What is the acceptability of a positive variation of the GBG among high school teachers within a general education high school classroom setting?

CHAPTER II

METHODOLOGY

Participants and Setting

The study took place in a high school located in a small rural school district in a southern state with a population of 49% Female students, 51% Male students, 68% White students and 30% Black students. At the time that this study was conducted, this school was not implementing PBIS. Three classrooms where students were exhibiting problematic behavior were identified by administrative referral. Teacher consent (Appendix A) for each classroom was obtained prior to conducting screening observations. The primary experimenter served as the consultant for all classrooms. During consultation, teachers were asked to identify undesirable behaviors that were most prevalent in their classrooms and were also asked to develop a list of desired behaviors appropriate for the classroom. The teacher, in collaboration with the primary researcher, operationally defined these identified behaviors for observation. All teachers served as participants and were responsible for implementing the components of the intervention. This research project was reviewed and approved by a university-based Human Subjects Protection Review Committee (Appendix B).

Classroom A was an English II class with 23 students consisting of 20 10th grade students, and 3 9th grade students. 14 students were identified as White and nine students were identified as Black. Classroom B was a Physical Science class with 19 students, consisting of two 12th grade students, 11 11th grade students, and six 10th grade students. Nine students were identified as Black and 10 students were identified as White. Classroom C was an Algebra I class with 13 9th grade students, consisting of one 10th

grade student, two students were male and 12 were female. 12 students were identified as White and two students were identified as Black. In all classrooms there were a number of students receiving special education services identified with mild disabilities (i.e., Specific Learning Disability, Other Health Impaired-Attention Deficit Hyperactivity Disorder, etc.) receiving services through an individual education plan. All participating teachers were female, White, and were 1st year teachers. Additionally, none of the teachers were familiar with the GBG.

Materials

The following materials were used in the intervention: a script, a marker board, slips of paper, a jar or other solid container and any tangible rewards approved by the teacher. The script was used by the teacher to describe the procedures of the GBG to students. The board in each classroom was located in an area of the classroom where it was visible to all students and was used to display team names and the points earned by each team. Slips of paper indicating the names of each reward were stored and randomly chosen from a jar or container each time a team or teams reach the pre-determined criterion.

Rewards in Classroom A included bathroom passes, homework passes, extra credit on assignments, the ability for a student to drop their lowest assignment grade, and a pass which allowed a student to forego the assigned bellwork task and either write about the topic of their choice or read a book or magazine of their choice. Rewards in Classroom B included homework passes, extra credit on assignments, and because the teacher of this class allowed students to eat or drink while working in class, one of the possible rewards was *chips or drink of your choice* which would be a selection from the

nearby vending machine. Rewards in Classroom C included homework passes, extra credit on assignments, the ability for a student to drop their lowest assignment grade, and on some days the teacher included candy bars or doughnuts.

Dependent Variables, Observation Procedures, and Data Collection

The primary dependent variable in this study was disruptive behavior, while appropriately engaged behavior (AEB) was a secondary dependent variable. All teachers identified the same three target disruptive behaviors during consultation. With the assistance of the primary author, the teachers developed the following definitions for the target disruptive behaviors, as well as AEB, as shown below:

- *Inappropriate vocalizations* were defined as any verbalization made by a student without the permission of the teacher.
- *Playing with objects* was defined as any manipulation of items not related to the task.
- *Out-of-seat* behavior was defined as the student's buttocks breaking contact with their seat.
- *Appropriately engaged behavior (AEB)* was defined as the student's eyes oriented toward the teacher or toward a relevant task or activity.

Trained graduate students conducted all observations. The first author served as the principle observer for 75% of observations, and trained doctoral-level school psychology students served as principle observers for the other 25% of observation sessions. Data were collected over the course of approximately seven weeks. Each observation was conducted for 20 minutes using 10 second intervals, for a total of six intervals per minute (Appendix C). Observers used a partial interval recording

procedure, indicating the occurrence of either disruptive behavior or AEB as it occurred during any portion of the interval. An audio recording on an MP3 device, audible to only those collecting data, was used to signal observers to advance to the following interval. As each interval changed, a different student was observed until all students had been observed. The observers started again rotating through students and repeated this process until 20 minutes had elapsed. Observation data were collected for both disruptive behavior and AEB simultaneously and if at any time, a student's behavior was questionably disruptive or appropriate, the student was marked as disruptive to maintain a conservative estimate of disruptive behavior in the findings of this study. If a student was exhibiting neither disruptive behavior, or AEB (i.e., staring out the window/at another student, putting their head down on the desk, etc.) the interval would be left blank. The total percentage of intervals in which disruptive behavior occurred was represented graphically, and appropriate behavior was graphed in an identical manner.

Experimental Design and Data Analysis

An A/B/A/B withdrawal design was used in each classroom to evaluate the effectiveness of a positive variation of the GBG for decreasing disruptive behaviors while increasing AEB. Phase changes were made contingent upon classroom data for disruptive behavior. Baseline data for each classroom were collected for at least three data points and continued until there was an increasing or stable trend in the percentage of intervals for which disruptive behavior occurred. Data were visually analyzed for level, trend and variability.

Acceptability

On the final day of data collection, teachers' acceptability of the positive variation of the GBG was evaluated using the *Intervention Rating Profile-15 (IRP-15)* (Martens et al., 1985; Appendix D). The *IRP-15* is a questionnaire consisting of 15 Likert-type items (1=strongly disagree to 6=strongly agree) with scores ranging from 15-90, and reported as having a Cronbach's Alpha of .98. Higher scores are indicative of higher acceptability ratings, but a score of 52.50 or above indicates that the intervention has been rated as acceptable (Von Brock & Elliott, 1987). The measure is meant to be adapted to specific interventions and situations, and so for the purposes of this study modifications in wording and more specifically changing tense (e.g., future to past tense) were made prior to administration without affecting psychometric properties (Freer & Watson, 1999).

Procedures

Screening and baseline

Observations were conducted by graduate students trained in the observation procedure, following teacher consent and administrative referral. During these observations, teachers conducted classes with no new contingencies in place while routinely handling behavior. All students were observed using the aforementioned observation procedure. In order for a class to be included in the study, disruptive behavior was supposed to occur during at least 30% of intervals observed during one screening observation. Two classrooms met this criterion, but disruptive behavior occurred for only 28% of intervals observed during the first observation session in Classroom C. The decision was made to include the classroom because the percentage of intervals of disruptive behavior was so close to the predetermined criterion of 30%.

In addition to collecting data on the occurrences of disruptive behavior and AEB, the primary investigator also collected data on the occurrences of teacher redirections or praise statements in response to students' behavior. During the observation session, the primary investigator noted these occurrences by drawing a small star next to the corresponding interval on the observation sheet. The primary investigator did this for two baseline observations in each classroom and then averaged the number of redirections or praise statements observed to develop a criterion for points needed for a team to win in each classroom. This enabled the primary investigator to set a criterion in each classroom, which was comparable to the amount of redirections or praise statements that the teacher was already using within a 20 minute period.

Teacher training

Teacher training began after baseline data were collected. Teachers were trained by the primary author in implementation procedures for the GBG, each in a separate training session. During training, teachers were introduced to the script for the GBG, and each procedural step of the GBG was discussed. In addition, the primary author demonstrated the steps of the GBG and asked the teacher to practice each step. Additionally, the primary author assisted each teacher with developing an arbitrary name for the GBG to use with the class. All teachers decided to play the game during the first 20 minutes of class; each teacher indicated during consultation that getting students to immediately sit down, begin their bellwork (assigned independent seatwork), and remain on task was particularly challenging. The teachers of Classrooms A and B decided to call the GBG *The Bellwork Game* and the teacher of Classroom C decided to call the GBG *Our Game*.

Immediate feedback during the training session(s) included any errors or omissions of steps in implementation of the GBG. Following each observation during intervention phases, the primary experimenter provided feedback to teachers about their performance in GBG implementation, more specifically they were told what steps of implementation they followed, which steps they did not follow, and were given an opportunity to ask any questions or to voice any concerns about the GBG. If at any time a teacher demonstrated GBG procedures with less than 80% accuracy (see Procedural and treatment integrity), additional training was provided.

Positive variation of the GBG

The positive variation of the GBG used in this study was based on the original version of the intervention published by Barrish et al. (1969) with a modification of two components. First, the teacher was asked to award teams points for exhibiting appropriate behavior, as opposed to rule breaking behavior as in the original version. Second, the teacher was asked to ignore all minor violations of the rules. The GBG was introduced to students in each classroom by its teacher, each of which explained with the assistance of a script (Appendix E), that the class will have the opportunity to win rewards for exhibiting appropriate behavior. Each teacher then divided their class into teams and showed the class the space on the classroom's whiteboard which would be used to indicate team names and progress. Each teacher also described what behaviors were expected to earn points for their respective teams and gave examples and non-examples of the target behaviors using the classroom rules that had been posted in each classroom. As the target behaviors for each class were the same, so were the classroom rules, which were as follows: (1) Raise your hand for permission to speak. (2) Remain

on-task during the assigned activity time. (3) Stay in your seat unless given permission to do otherwise. A large sheet of paper with these three rules was created by the primary investigator, written in bold large script, and given to each teacher to post during intervention phases. During baseline and withdrawal phases, the rules were not posted in the classrooms.

Next, each teacher explained that rewards would be given to the team or teams that earn a set number of points. As described previously, the primary investigator set a criterion for each classroom based on an average of observed redirections and praise statements during two baseline observations. For Classroom A, the criterion was set to more than or equal to 7 marks. For Classroom B, the criterion was set to more than or equal to 8 marks, and Classroom C's criterion was set to more than or equal to 9 marks. It should be noted that if two or more teams reached the criterion, then all qualifying teams would receive a reward.

After explaining the number of points needed to win, the teachers allowed a few minutes for each team to choose their team's name and to develop a list of rewards that were acceptable to the teacher and desired by the students. The items on the reward list were written on slips of paper and put into a jar. Finally, teachers assigned points to teams in which all members demonstrated on-task behavior according to the definitions that the teacher created with the primary investigator. At the end of the 20 minute session, the winning team was announced and allowed to draw a slip of paper from the jar indicating the team's reward for the day.

Procedural and treatment integrity

Data were collected to evaluate procedural integrity for teacher trainings in this study. The primary investigator conducted all trainings and also present was a second observer with the sole responsibility of indicating on a procedural integrity checklist (Appendix F) which components of the teacher training were executed. All of the components listed on the procedural integrity checklist for training (100%) were completed for each classroom before the first intervention phase.

Once the GBG phase was initiated in a classroom, treatment integrity data were collected for each session while the GBG was in place. A treatment integrity checklist (Appendix G) included each component of the GBG as the teacher was trained to implement it. Treatment integrity data were collected by the observer or observers collecting observation data in the classroom. For each day in which the GBG was in place and data were collected, an integrity checklist was completed and used to provide performance feedback to the teacher.

Procedural and treatment integrity were calculated by dividing the number of steps successfully completed by the number of total items on the checklist and multiplied by 100 to create a percentage. Following each observation while treatment conditions were in place, the experimenter provided feedback to the teacher about what steps they had completed successfully, and which, if any, steps they had omitted, or implemented incorrectly. If at any time a teacher demonstrated GBG procedures with less than 80% accuracy, additional training including review of procedure, modeling and practice of steps that were omitted were provided. Two teachers needed to be retrained once during the course of the study.

The teacher of Classroom A demonstrated 92% procedural integrity, on average (range = 75% - 100%). During the second observation session during the first intervention phase, the observer noticed that the teacher was only assigning points to teams who were appropriately behaved during the entire period of time *between* her assigning points, not merely appropriately behaved teams at the time of her approach to the board. This means that the teacher was keeping a mental note of who had exhibited disruptive behavior, and even if that team was entirely appropriately behaved at the time of her approach to the board to assign points, they would not be awarded any points because of some infraction that occurred during that interval of time since the teacher had last marked points on the board. The primary investigator retrained the teacher on the procedure for assigning points to teams which was successful, indicated by subsequent observation sessions which remained at 88% or above. Classroom B's teacher demonstrated 89% procedural integrity, on average (range = 70% - 100%). During the first observation session of the second intervention phase, the teacher was providing reprimands and redirections for minor infractions. The teacher was subsequently retrained and remained at 90% or above for remaining sessions. Classroom C's teacher demonstrated 93% procedural integrity, on average (range = 80% - 100%) and did not require retraining at any time.

Observer training and Interobserver agreement

School psychology graduate students were trained as observers. Behavioral definitions of disruptive behavior and appropriate behavior were provided during training. Observers simultaneously observed a classroom with the experimenter, until

80% or higher interobserver agreement (IOA) with the primary experimenter was obtained.

Interobserver agreement (IOA) for disruptive behavior and appropriately engaged behavior were calculated separately. IOA data were collected for 31% of sessions and were measured by summing the total number of agreements for occurrences and non-occurrences of behavior of both observers and then dividing that number by the total number of intervals and multiplying by 100. IOA averaged 91% (range = 74% - 98%). Only one observer fell below the 80% criterion for one observation (74%) and after retraining maintained IOA at 88% or above for the remainder of the study. Additionally, Cohen's kappa was also calculated as an additional estimate of IOA ($\kappa = .58$, $p < .001$) with values between 0.40 and 0.75 being considered "fair to good agreement beyond chance" (Banerjee, Capozzoli, McSweeney, & Sinha, 1999, p. 6). Finally, IOA for treatment integrity data were collected for 39% of the total number of intervention sessions. Observers agreed on treatment integrity 100%.

CHAPTER III

RESULTS

Disruptive Behavior

On average, students in Classroom A (Figure 1, top panel) demonstrated disruptive behavior during 27% of intervals observed (range = 22% - 31%) across baseline observations, with a variable trend. When the GBG was introduced, there was an immediate change in level, and the class averaged 5% disruptive behavior during intervals observed. A low level of disruptive behavior was maintained throughout the phase ($M = 10%$; range = 5% - 13%) with an increasing trend. Upon removal of the intervention there was an increase in disruptive behavior ($M = 15%$) observed in the first session of the phase, and that increasing trend continued on a reasonably steep slope throughout the withdrawal phase ($M = 20%$; range = 15% - 25%) returning to levels comparable with baseline observations. When the GBG was reinstated in Classroom A, disruptive behavior immediately declined ($M = 8%$) during the first observation session, but began steadily increasing. All trained observers noted that one particular student was very disruptive, to the extent that they were potentially influencing other students' behavior. This student would leave their seat, approach other students and engage them in conversation, or this student's classmates would stop working to watch the student make noises or talk very loudly, which was quite often. It was suggested to the teacher that this student be placed in a team by themselves (Harris & Sherman, 1973), with the potential to earn points like the rest of the class, when engaged in appropriate behavior. The teacher agreed to do this during the next game period, and once implemented, a declining trend was observed for two sessions, then increased for two sessions before finally

decreasing to the lowest observed percentage of intervals in any one session ($M = 4\%$), across all phases for Classroom A.

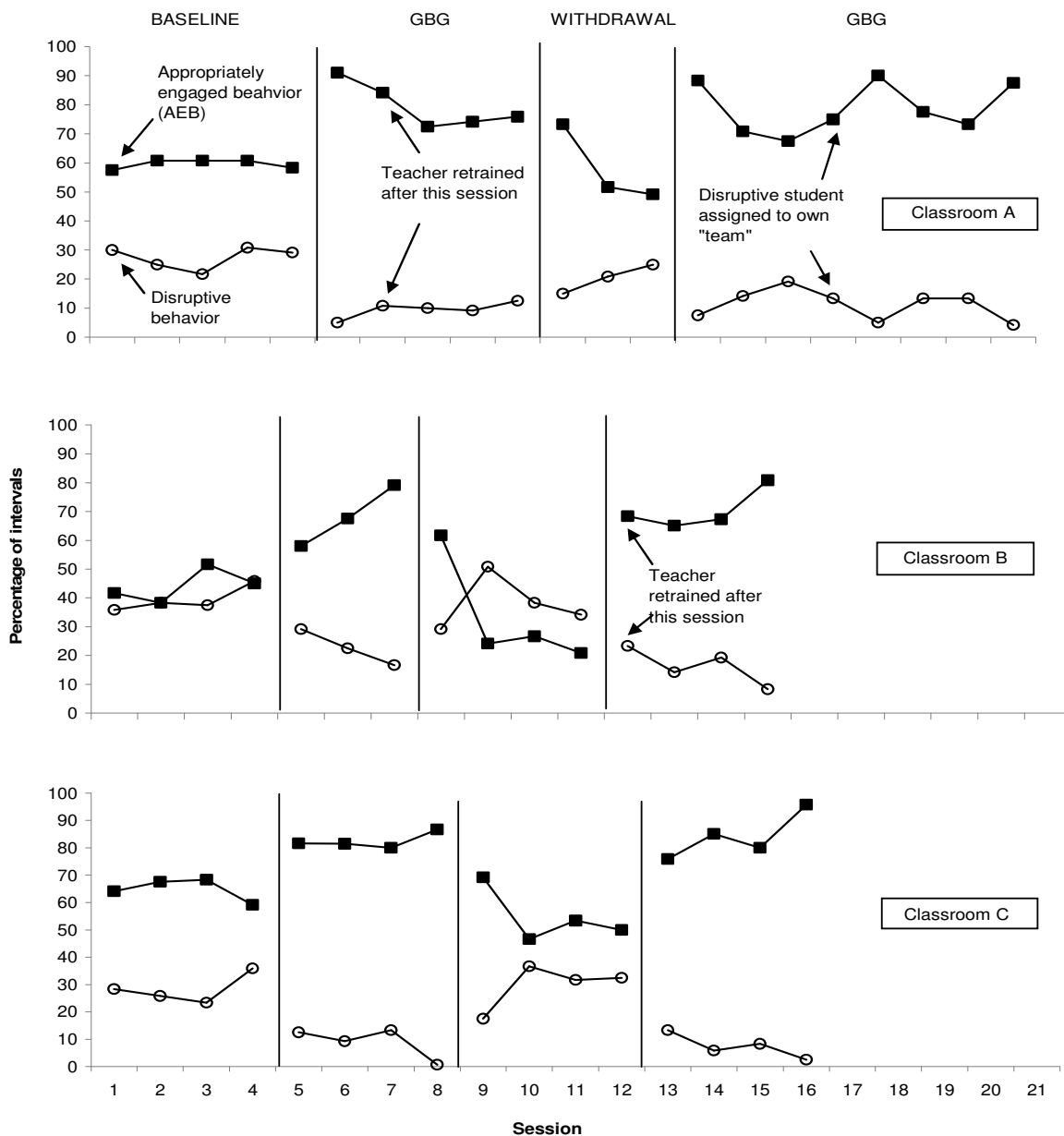


Figure 1. Percentage of intervals for which disruptive behavior and appropriately engaged behavior occurred for Classroom A (top panel), Classroom B (middle panel) and Classroom C (bottom panel) across baseline, intervention and withdrawal phases.

Although the final GBG phase was reasonably variable ($M = 11\%$, range = 4% - 19%) in comparison to other phases, and required a modification in assigning one student to their own team, it should be noted that levels never increased to baseline levels. Additionally, there were no individual systematic observation data collected for the student placed on her own team, however anecdotally, all observers noted that this student's behavior improved. She never won the game, but seemed to look forward to the teacher announcing how many points she had earned for the day.

Classroom B (middle panel) exhibited disruptive behavior for an average of 39% of intervals during baseline (range = 36% - 46%). Upon introduction of the GBG, an immediate decrease in disruptive behavior was observed and continued on a decreasing trend throughout the phase ($M = 23\%$; range = 17% - 30%). When the GBG was withdrawn from the classroom, an immediate increase in disruptive behavior was observed for the initial session ($M = 29\%$), then increased sharply during the next observation session ($M = 51\%$), and then declined to levels comparable with baseline for the remaining two sessions during the withdrawal phase, which was overall variable ($M = 38\%$; range = 29% - 51%) and averaged higher than average observed intervals for disruptive behavior during the baseline phase. Lastly, the GBG was implemented again in Classroom B, and an immediate decrease in disruptive behavior was observed and maintained throughout the phase ($M = 16\%$; range = 8% - 23%).

Disruptive behavior in Classroom C (bottom panel) was observed during an average of 28% of intervals across baseline observations (range = 26% - 36%). A slightly decreasing trend was observed for the first three baseline observations and then a reasonably sharp increase in disruptive behavior was observed before the GBG was

introduced. Upon GBG introduction, an immediate decrease in disruptive behavior was observed ($M = 13\%$) during the first intervention session and this decreased level of disruptive behavior was maintained throughout the phase ($M = 9\%$; range = 1% - 13%). Upon withdrawal of the GBG, an immediate increase in disruptive behavior was observed ($M = 18\%$), and an increased level of disruptive behavior continued throughout the phase ($M = 30\%$; range = 18% - 37%). When the GBG was implemented again, disruptive behavior decreased immediately and was maintained throughout the phase ($M = 8\%$; range = 3% - 13%).

Appropriately Engaged Behavior (AEB)

Classroom A exhibited an average of 60% AEB across baseline observations (range = 58% - 61%). Upon implementation of the GBG, an immediate increase in AEB was observed and maintained on a higher level throughout the phase ($M = 80\%$; range = 73% - 91%). When the GBG was withdrawn, there was a slight decrease in AEB which continued on a decreasing trend across the phase ($M = 58\%$; range = 49% - 73%). As the GBG was reintroduced, an immediate increase in AEB was observed during the phase's first session ($M = 88\%$) and then for the two following observation sessions, AEB decreased substantially. As previously discussed, it was at this time that all observers noted that one particular student was so disruptive to the extent that the behavior of other students was potentially influenced, and consequently, the teacher was asked to assign the student to her own team. The teacher agreed to do this and immediately upon implementation, there was an observed increase in AEB which was variable across the phase, but maintained at a higher level than across baseline and withdrawal phases ($M = 79\%$; range = 71% - 90%).

Classroom B exhibited an average of 44% AEB across baseline observations (range = 38% - 52%). Upon implementation of the GBG, an immediate increase in AEB was observed, and an increasing trend was maintained throughout the phase ($M = 68%$; range = 58% - 79%). As the GBG was withdrawn, an immediate decrease was observed and eventually decreased to a level below baseline observations ($M = 33%$, range = 21% - 62%). Once the GBG was implemented again, an immediate increase in AEB was observed and maintained for the duration of the phase ($M = 70%$, range = 65% - 81%).

Classroom C exhibited an average of 65% AEB across baseline observations (range = 59% - 68%). As the GBG was implemented, an immediate increase in AEB was observed, and a higher level was maintained throughout the entire intervention phase ($M = 82%$, range = 80% - 87%). As the withdrawal phase was initiated, an immediate decrease in AEB was observed and persisted ($M = 55%$; range = 47% - 69%) until the GBG was implemented again. During the final intervention phase, AEB averaged 84% (range = 80% - 96%).

Teacher Acceptability

At the end of the study each teacher was asked to complete the *IRP-15* as described previously (see Acceptability). Each teacher returned their responses without the primary investigator being able to determine which responses belonged to which teacher, ensuring that teachers felt comfortable to answer honestly. Scores indicated that teachers found the GBG acceptable with scores of 79, 86 and 90. One teacher indicated *Strongly Agree* on every item of the questionnaire. Another teacher indicated *Strongly Agree* for every item except two for which they indicated *Slightly Agree*. The two items were asking if the classroom behavior was severe enough to warrant the use of the GBG,

and if the GBG was consistent with those used before. The final teacher indicated *Agree* on most items and *Strongly Agree* on the following four items: (1) This was an acceptable intervention. (2) I would suggest the use of this intervention to other teachers. (3) I liked the procedures used in this intervention. (4) Overall, this intervention was beneficial.

CHAPTER IV

DISCUSSION

Demonstrated as effective, the GBG has accumulated over 45 years of empirical support. However, there have been very few studies investigating the effectiveness of the GBG in a high school setting. Additionally, there have been few studies evaluating positive variations of the GBG or adaptations in which points are given to teams for rule following behavior as opposed to points assigned to teams for rule breaking behavior. The current study added to the literature base by evaluating the effectiveness of a positive variation of the GBG in a general education high school setting.

The first research question asked if a positive variation of the GBG would result in a decrease in class wide disruptive behavior and an increase in AEB. Across all three classrooms, clear and immediate treatment effects were noted. In Classroom A, each time the GBG was introduced there was an immediate decrease for both disruptive behavior and an increase in AEB. During the second GBG phase, there was an increase in disruptive behavior and decrease in AEB after the first observation session. The primary investigator asked the teacher to place a student on her own team which resulted in a restoration of decreased disruptive behavior and increased AEB. Classroom B demonstrated the highest average of disruptive behavior and lowest AEB of all three classrooms during the baseline phase. However, implementing the GBG resulted in decreasing levels of disruptive behavior and increasing levels of AEB during both intervention phases which were comparable to results in other classrooms. Treatment effects in Classroom C were similar to the other two classrooms in that implementation of the GBG resulted in higher levels of AEB observed and lower levels of disruptive

behavior observed, which were immediate and maintained throughout each intervention phase.

The second research question asked what teachers' acceptability ratings would be for a positive variation of the GBG. The *IRP-15* questionnaire was used to evaluate teachers' acceptability of the GBG in this study. Scores may potentially range from 15-90 with scores of 52.50 or higher indicating an intervention is rated as acceptable (Von Brock & Elliott, 1987). Teachers gave ratings of 79, 86 and 90 which are well beyond the *acceptable* score of 52.50. All teachers indicated *Strongly Agree* on items asking if they found the GBG acceptable, would recommend it to other teachers, liked the procedures used, and found it beneficial.

Implications for Practice

Desirable results were obtained with time-efficient training, very little instructional time used, and very little cost for student rewards. The GBG with a positive variation should be considered for general education high school settings in which disruptive behavior is impeding the learning process in both schools that use PBIS and schools that do not. In schools implementing PBIS, a positive variation of the GBG may be a likely choice for either Tier I or Tier II intervention as the focus is on teaching desirable behavior, and preventing problem behavior by awarding points for teams exhibiting appropriate behavior. Additionally, it is possible that asking teachers to attend to rule following behavior, while ignoring all minor rule violations may correlate with improvements in praise delivery, however more research is needed.

Limitations

While the GBG was effective overall, aggregated student observations were used, so it is unknown if the GBG made a similar impact on the behavior of all students. This is particularly apparent as a modification was made in Classroom A because one student was not responding to the GBG until placed on her own team, even then the student never won the game, although her behavior seemed to improve based on teacher report. Additionally, the GBG was only played for the first 20 minutes of class in each classroom. However, the total length of each class was 90 minutes. It is unknown if the GBG affected the entire class time, or just the 20 minutes that it was being played. It is also not known how results may have differed if the GBG would have been played for the entire class period. Lastly, there was no long term maintenance of treatment effect data collected. Therefore, it is unknown if these results could be maintained over a longer period of time.

Possibilities for Future Research

Future studies might focus on examining a positive variation of the GBG in the context of a school implementing PBIS, that is, how might this variation of the GBG work with school-wide incentives or rewards systems. Also, more research is needed to assess whether the effects of a positive variation of the GBG are maintained over longer periods of time and generalized to other settings.

Conclusion

When disruptive behavior is not addressed, disruptive behavior may create classroom environments in which learning becomes extremely difficult. Increasingly, schools are seeking ways to address disruptive behavior using behavioral strategies which

are not punitive in nature. Researchers have demonstrated the effectiveness of the GBG to decrease disruptive behavior (Tingstrom et al., 2006). This study sought to add to existing research base by examining the effectiveness of a positive variation of the GBG on disruptive behavior and appropriately engaged behavior within a general education high school classroom setting.

The current study demonstrated that a positive variation of the GBG was effective in decreasing disruptive behavior and increasing appropriately engaged behavior within three general education high school classrooms. It provides support for the use of empirically supported interdependent group contingencies in secondary education settings, while also bolstering the research literature for these kinds of interventions. In this study, teachers were able to facilitate desirable change in their classrooms with very little training and without having to use much instructional time or resources to purchase student rewards. Therefore, this study supports findings of previous GBG studies while also asserting that implementing a positive variation of the GBG did not alter its effectiveness. Utilizing a positive variation of the GBG may be more aligned with PBIS which seeks to cultivate a school-wide culture of educating students about what is considered desirable behavior, and creating more functionality for desired behavior (Sugai et al., 2000; Sugai, & Horner, 2002b).

APPENDIX A

TEACHER CONSENT FORM

Dear Teacher,

I am a doctoral student in the School Psychology Program at The University of Southern Mississippi working under the guidance of Dr. D. Joe Olmi. As part of my thesis, I am researching the effectiveness of a positive variation of a classroom-based intervention called the Good Behavior Game (GBG). The GBG is a procedure designed to reduce problem behavior in the classroom and your classroom has been referred for class-wide disruptive behavior, so I hope that you will participate.

If you agree to participate in this study, we will ask you to perform several tasks. First, prior to the implementation of the GBG, you will be asked to complete a consultation session with me to obtain information regarding your students' behavioral concerns. Following the consultation, a screening procedure will be conducted to verify your classroom's capacity for participation. If your classroom qualifies for participation, I will conduct a training session to explain and practice the steps of the intervention with you prior to implementation. If the classroom does not qualify for participation, then other services will be made available to you.

Throughout the study, brief classroom observations will be conducted multiple times per week by myself, or by another trained undergraduate/graduate student from the University of Southern Mississippi. Following the initial screening observation, data will be collected on targeted behaviors. Each day, you will be asked to either: 1) conduct class normally without the GBG, 2) implement the GBG. Following each day of observations, you will be provided with brief feedback on game implementation. At the end of the study, you and your students will be asked to complete a questionnaire to assess your satisfaction with the GBG.

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.

Students' behavior will be monitored to ensure undesired effects (e.g., increase in inappropriate behaviors) do not happen. Should we observe any unanticipated effects on your students' behavior, modifications or discontinuation of the intervention will occur, and your students will be provided with other appropriate services.

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.

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. 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 Shauna Lynne at (267) 252-7068 or shauna.lynne@eagles.usm.edu or you may contact Dr. Joe Olmi at (601) 266-5693 or d.olmi@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,
Shauna Lynne, M.S.Ed.
School Psychologist-in-Training

THIS SECTION TO BE COMPLETED BY TEACHER

Please Read and Sign 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 do so, I will be required to complete a consultation session, to implement the intervention, 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. 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

APPENDIX B

INSTITUTIONAL REVIEW BOARD NOTICE OF COMMITTEE ACTION



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: **14031010**

PROJECT TITLE: **Investigating a Positive Variation of the Good Behavior Game in a High School Setting**

PROJECT TYPE: **New Project**

RESEARCHER(S): **Shauna Lynne**

COLLEGE/DIVISION: **College of Education and Psychology**

DEPARTMENT: **Psychology**

FUNDING AGENCY/SPONSOR: **N/A**

IRB COMMITTEE ACTION: **Expedited Review Approval**

PERIOD OF APPROVAL: **03/12/2014 to 03/11/2015**

Lawrence A. Hosman, Ph.D.

Institutional Review Board

APPENDIX C
OBSERVATION SHEET

Teacher name: _____ Date: _____ Phase: _____ Observer initials: _____

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

10.4			20.4		
10.5			20.5		
10.6			20.6		

Behavior 1 Operational Definition:

Behavior 2 Operational Definition:

Behavior 3 Operational Definition:

Occurrence of disruptive behavior = ___/120= ___%

Occurrence of appropriate behavior = ___/120= ___%

APPENDIX D

INTERVENTION RATING PROFILE-15 (IRP-15)/MODIFIED VERSION

Please respond to each of the following statements thinking about the intervention implemented. Please then circle the number associated with your response. Be sure to answer all statements.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
This was an acceptable intervention for the problem behavior(s).	1	2	3	4	5	6
Most teachers would find this intervention appropriate for behavior problems in addition to the ones described.	1	2	3	4	5	6
This intervention proved effective in helping to change the problem behavior(s) of the classroom.	1	2	3	4	5	6
I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
The classroom behavior problem was severe enough to warrant the use of this intervention.	1	2	3	4	5	6
Most teachers would find this procedure suitable for the problem behavior(s) described.	1	2	3	4	5	6
I would be willing to use the intervention again in the classroom setting.	1	2	3	4	5	6
The intervention did <i>not</i> result in negative side effects for the students.	1	2	3	4	5	6
This intervention would be appropriate for a variety of students.	1	2	3	4	5	6
This intervention was consistent with those I have used in the classroom setting before.	1	2	3	4	5	6
This intervention was a fair way to handle problem behavior in the classroom.	1	2	3	4	5	6
This intervention was reasonable for the problem behavior(s) described.	1	2	3	4	5	6
I liked the procedures used in this intervention.	1	2	3	4	5	6
The intervention was a good way to handle the behavior problem(s).	1	2	3	4	5	6
Overall, this intervention was beneficial.	1	2	3	4	5	6

Taken and adapted from, 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

APPENDIX E

TEACHER SCRIPT FOR THE INTRODUCTION OF GBG

1) Introduction of the GBG

- Inform students that there will now be a team competition each day during the set time within the class period. At this time, students are expected to follow all of the classroom rules.

2) State and demonstrate class expectations

- Remind the class of each classroom rule. If the target behaviors are not a part of the classroom rules, those should also be explained.
- The teacher should demonstrate the expected appropriate behaviors for the class to see.

3) Explain GBG procedures and divide the class into teams

- Divide the students into two teams allowing them to choose team names and write the names on the board.
- Explain that at random times you will observe each team and points will be given to teams in which all members are exhibiting appropriate classroom behavior.
- The class and teacher will develop a list of potential rewards and they will be written on slips of paper and put into a container to be drawn from later.

4) Following the introduction to the class, the GBG will immediately begin

- Visually scan the classroom periodically and assign one point to teams in which all students are behaving appropriately.
- Ignore all minor rule violations.

5) End the competition and award the winning team(s)

- At the end of the game each day the points will be tallied and the winner(s) announced.
- Select a reward slip from the designated container.
- Let winners know when they can access their reward.

Percentage of steps completed: _____ / 11

Observers' initials: _____

APPENDIX F
TEACHER TRAINING SCRIPT

- 1) Introduction of the Teacher GBG Script
 - Give the teacher the script and explain each step in detail.
- 2) Demonstration of the GBG procedure
 - Give examples and non-examples of each step of the GBG procedure.
- 3) Teacher names the GBG for their classroom
 - Ask the teacher to think of a name for what the GBG will be called in their classroom.
- 4) Practice the GBG
 - Allow the teacher to practice each step of the teacher script.
 - Provide feedback on any errors or omitted steps.
- 5) Q&A
 - Ask the teacher if there are any questions regarding the GBG procedure.

Percentage of steps completed: _____ / 6

Observers' initials: _____

APPENDIX G

TREATMENT INTEGRITY CHECKLIST FOR GBG

Date: _____

Observer: _____

Training Steps	Yes	No
1. Announce the game/rules.		
2. Divide students into teams and display team names on the board.		
3. Remind the teams about the number of points needed to win.		
4. Start the game.		
5. Assigns points to teams in which all members are behaving appropriately.		
6. Ignores minor rule violations.		
7. Announce the end of the game.		
8. Tally marks and announce winner.		
9. Announce reward after drawing.		
10. Tell team when they can access their reward.		

Percentage of steps completed: _____ / 10

Teacher requires retraining: Yes No

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

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