
The Effects of the Good Behavior Game on the Conduct of Regular Education New York City High School Students

Behavior Modification

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Abstract

The efficacy of the Good Behavior Game was examined in a multiethnic New York City public high school. Classroom rules were posted and students were divided into two teams. A reinforcement preference questionnaire was used to select daily and weekly prizes. The classroom teacher indicated that he was going to place a check on the board after every rule infraction as he named rule violators and their infractions. Students were also told that the team with the fewest marks at the end of each day would become the daily winners and receive prizes. They were also told that the team with the fewest marks for the week would be recognized as the weekly winners and receive additional prizes. The rate of disruptive behavior was charted across four treatment phases using a reversal design. The game phases were associated with marked reductions in the rate of seat leaving, talking without permission, and aggression. Teacher and student feedback supported the social validity of the procedure.

Keywords

classroom management, contingency management, group behavior modification

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The Good Behavior Game (GBG; Barrish, Saunders, & Wolf, 1969) has enjoyed considerable currency as a way to modify inappropriate classroom behavior (Harris & Sherman, 1973; Saigh, & Umar, 1983; Tingstrom, Turner, & Wilczynski, 2006) and facilitate academic achievement (Darveaux, 1984; Maloney & Hopkins, 1973; Saigh, 1987). The GBG procedure basically involves identifying target behaviors, posting rules, identifying reinforcers, dividing classes into two equal teams, identifying rule violators by name and stating their infractions, debiting public team for infractions, and awarding daily and weekly prizes to the team with the least infractions. Although the GBG has been extensively used in America and abroad (Embry, 2002; Tingstrom et al., 2006), the majority of the published studies have involved elementary school children (Patterson, 2003). In view of this and the need to identify empirically viable classroom-based interventions for high school students (Embry, 2002; Patterson, 2003), this study investigated the efficacy of the GBG among a sample of urban regular education high school students.

Method

Participants

This investigation was conducted in a public New York City high school, located in Harlem, and took place in a ninth-grade history class. The school principal and the teacher reported that the conduct of this class was exceptionally disruptive and interfering with the learning process. The class met for 30 to 60 min per day depending on the school schedule. The class was made up of 26 students (15 males and 11 females) with a mean age of 15.39 years ($SD = 1.02$ years). The students had the following ethnic distribution: 6 (23%) African American, 0 (0%) Asian, 19 (73%) Hispanic, 0 (0%) White, and 1 (4%) student did not report ethnicity on enrollment papers. Twenty-three (88%) students were enrolled in a free or reduced lunch program. None of the participating students had a special education designation.

Prior to implementing the intervention, the regular classroom teacher unexpectedly resigned and a replacement was hired. The replacement had not been trained in the use of classroom management. When he assumed responsibility for the class, students reportedly refused to stay seated, frequently shouted at one another, cursed, and occasionally became involved in physical altercations with classmates. At one point, students reportedly screamed, cursed, and threw objects at the new teacher. He subsequently consulted with the investigator (K.K.) and she agreed to develop a behavior management intervention and train him to implement it.

Behavioral Definitions

Following an initial classroom observation period and consultations with the teacher and principal, three target behaviors were identified as being sufficiently disruptive to warrant modification. The following operational definitions for these behaviors were formulated:

Talk or verbal disruption. Talking without being requested or permitted by the teacher, or making other sounds such as tapping objects, singing, and name-calling. Talking during group work assignments was acceptable.

Aggression or physical disruption. Physical contact such as hitting, tapping, tripping, and pinching others as well as throwing objects in the classroom and destroying the property of others.

Seat leaving. This refers to getting out of one's seat without permission. This included standing up, jumping, and walking around the room without permission. Permission was defined as raising one's hand and receiving the teacher's verbal or nonverbal consent to engage in a behavior.

Observations

The investigator (K.K.) and a female school psychology graduate student collected the data. The classroom teacher remained in the classroom during all of the experimental phases. The observers sat in the back of the room and avoided eye contact and verbal interactions with the students. Before implementing the data collection, the observers practiced observing and coding the target behaviors by using a 30-s interval-sampling format. Observers used record forms similar to those that were developed by Hall, Lund, and Jackson (1968). Figure 1 presents an example of the data collection format. As such, each column was designated for a separate behavior and the rows represented 30-s intervals. If one or more behavior was emitted during a 30-s time interval, a tally was placed in the appropriate box according to the behavior and time interval. A silent stopwatch was used to designate the intervals.

Reinforcement Preference

Prior to the treatment, the students completed a reinforcement preference questionnaire. The questionnaire was constructed on the basis of informal interviews with the students, teachers, and school officials. The list was limited to items or events that were cost-effective (i.e., the overall budget for the backup reinforcers was limited to US\$15 per week). From the list that included rewards such as candy, free time, verbal recognition from the teacher, erasers, and extra library time, each student reported being interested in receiving candy,

Operational Definitions			
<p>- <i>Talk or verbal disruption.</i> Talking without being requested or permitted by the teacher, or making other sounds such as whistling, singing, and name calling.</p> <p>- <i>Aggression or physical disruption.</i> Physical contact such as hitting, pushing, making someone stumble, tapping, pinching, throwing objects in the classroom, as well as destroying the property of others.</p> <p>- <i>Seat leaving.</i> Getting out of the seat without permission. This included standing up, jumping, and walking around the room.</p>			
Date:			
30-s Intervals	Talk or Verbal Disruption	Aggression or Physical Disruption	Seat Leaving
1			
2			
3			
4			
5			
...			
75			

Figure 1. Data collection form

free time, and verbal recognition. Consultation with the teacher led to the designation of candy and a pizza party as rewards.

Experimental Design

The 6-week study used a reversal design that involved an initial adaptation period followed by four weekly phases and a follow-up phase (i.e., adaptation, Baseline I, introduction of the game, Baseline II, and reintroduction of the game).

Procedure

Adaptation period. During an initial 1-week adaptation period, observers joined the class to give the students time to adapt to their presence. In this context, the observers sat at the back of the room and silently coded the presence or absence of target behaviors on rating sheets.

Baseline I. During the second week, the class was divided into two teams (A and B). To avoid the possibility of favoring one team over the other, attention was given to equating the teams with respect to the students' propensity for disruption (as observed during the adaptation period and teacher recommendation). For the sake of convenience, the seats were rearranged in such a

way that each team sat on a separate side of the classroom. The teacher and experimenter developed a list of class rules derived from the target behaviors. The teacher posted a large notice on the front wall that listed the class rules. This was referred to as "Classroom Expectations," which were stated in developmentally appropriate language. The list of expectations was read aloud each day of the study and remained in place beside the board. After reading the rules, the teacher went on to teach according to his normal method, and rule violations were handled by his traditional way (i.e., verbal reprimands or expulsion from the classroom). Additional explanations about the GBG procedure were not provided.

Introduction of the GBG. During the first day of the third week, the teacher announced that for the remainder of the week the teams were going to have an opportunity to participate in a "competition." The teacher indicated that the teams were going to have a chance to compete for rewards during the next 5 days. He restated the classroom expectations and explained he would verbally identify the misbehaving students, state the misbehavior in question, and place a check on the board under the team of the offending student. The teacher went on to note that these marks would count against the offender's team and that the accumulation of points might result in a loss of privileges for the team. It was further explained that the team with the fewest marks would win the competition. The teacher went on to say that there would be daily and weekly winners. He said that the daily winners would receive a bite-sized piece of candy at the end of each class period. He also indicated that the team with fewest tally marks at the end of the week would be recognized as weekly winners and would have the opportunity to attend a special party where pizza or cupcakes would be served. The students were also told that the losing team would have to stay in the room and not have access to the rewards. At the end of each class, the daily winners were announced and awarded bite-sized candy. At the end of the week, the weekly winners received a pizza party. The total cost of candy during this phase was less than US\$5 for the week, and the cost of the pizza party was US\$14.00.

Baseline II. The fourth week was similar to that which was described under Baseline I. However, the teacher announced on the first day of this phase that the game contingencies were no longer in effect. The classroom expectations were read aloud each day and the students remained in teams. After reading the expectations, the teacher went on to teach his lesson according to his normal method of instruction, and each instance of rule violation was handled in the traditional way (i.e., verbal reprimands or removing students from the classroom).

Reintroduction of the game. The game was reintroduced in the fifth week as it had been under the introduction of the game phase and classmates were divided

into two different teams. The daily winners received the same bite-sized piece of candy at the end of each class period and the weekly winners received cupcakes. The total cost of candy during this phase was less than US\$5 and the cost of the cupcakes was US\$7. It should be noted that the teacher did not provide any other consequences during this phase of the study.

Follow-up. The observers again joined the classroom approximately 3 weeks after the completion of data collection to assess whether the game continued to be implemented and whether the effects were maintained.

Interobserver agreement was assessed by a comparison of the data from the two observation forms. All agreements and disagreements were noted for each interval. The percentage of agreement between the two records was analyzed (number of agreements / number of agreements and disagreements \times 100). During the preintervention training sessions, interrater reliability for the respective target behaviors was calculated at 99%, 84%, and 91%. Interrater reliability for the respective target behaviors during Baseline I were 100%, 90%, and 96%. Following the introduction of the game contingencies, reliability was assessed at 93%, 87%, and 93% for the target behaviors. The interrater reliability during Baseline II was estimated at 91%, 98%, and 90%. Upon the reintroduction of the game contingencies, the reliability was assessed at 85%, 94%, and 82% for the targeted behaviors. During the follow-up, the reliability for the target behaviors was 92%, 100%, and 100%.

Social validity assessment. The experimenter developed a social validity (Wolf, 1978) questionnaire and administered it to the students during the follow-up phase. In this context, students were asked whether (a) they learned more during the game phases, (b) their chances of learning were better during the game phases, (c) the behavior of their classmates improved, (d) their personal conduct improved, and (e) they recommend applying the GBG in other classes at the school.

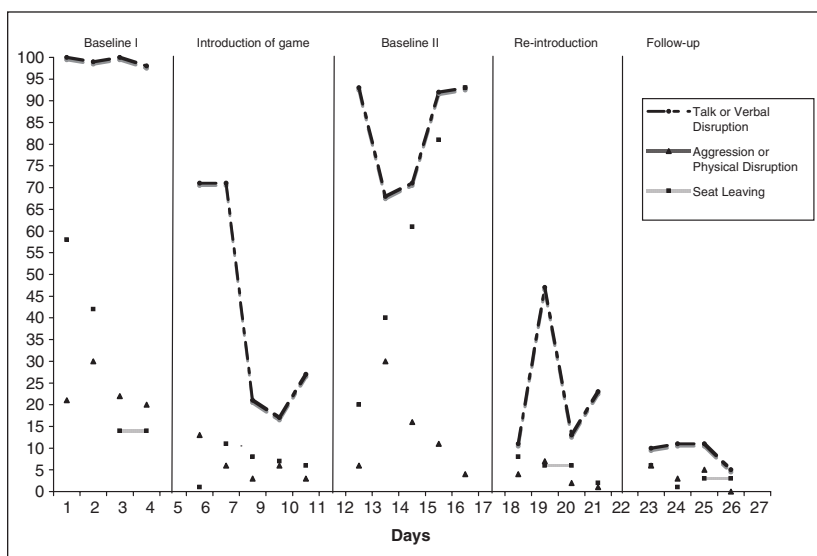
Results

Table 1 demonstrates the percentage of 30-s intervals in which target behaviors were observed across phases. These calculations reflect reductions of 58%, 17%, and 25% of intervals wherein inappropriate behavior was noted from Baseline I to Intervention I. Removal of the game contingencies in Baseline II resulted in 42%, 7%, and 43% increases in target behaviors whereas reintroducing the game led to 58%, 9%, and 44% decreases in target behaviors in the Intervention II phase.

During the follow up, it is important to note that the contingencies of the game were maintained. Furthermore, inappropriate behaviors continued to

Table 1. Mean Percentage of Target Behaviors Across Phases

Game phases	Talking	Aggression	Seat leaving
	<i>M</i> (range)	<i>M</i> (range)	<i>M</i> (range)
Baseline I	99 (98-100)	23 (20-30)	32 (14-58)
Intervention I	41 (17-71)	6 (3-13)	7 (1-11)
Baseline II	83 (68-93)	13 (4-30)	50 (20-81)
Intervention II	25 (11-47)	4 (1-7)	6 (2-8)
Follow-up	9 (5-11)	4 (0-6)	3 (1-6)

**Figure 2.** Percentage of disruptive behaviors across intervals

decrease relative to Baseline 1. Relative to Baseline 1, the behaviors in this phase denote 90%, 19%, and 29%, respectively, reductions in talking without permission, aggressive behavior, and seat leaving. Figure 2 presents a schematic representation of the data by phase.

Social validity feedback determined that 100% of respondents reported that they thought they learned more during the game phases, 89% reported that they thought it was easier to learn during game phases, 89% reported improvement in classmate's behavior, and 66% reported improvement in their personal

conduct. With reference to applying the GBG in other classes, 50% reported that they were in favor, 25% reported that they were not, and 25% did not respond. The classroom teacher represented that the "good behavior game gave me tools that I did not have before. It also showed the students that you do learn when you behave." He further represented that he intended to apply the GBG in future classes. Follow up with the teacher revealed that he continued to use the GBG in the following year.

Discussion

In a significant extension of previous research, the GBG procedure was applied in a multiethnic, public urban high school. The results clearly demonstrated rapid and considerable reductions across targeted behaviors during the game phases and a return to baseline levels of misconduct when the intervention was withdrawn. These findings are consistent with the literature involving the application of the GBG in elementary schools (Bostow & Geiger, 1976; Fishbein & Wasik, 1981), junior high schools (Phillips & Christie, 1986), and special education settings (Baily, Wolf, & Phillips, 1970; Gresham & Gresham, 1982; Grandy, Madsen, & De Mersseman, 1973).

The observed data outcomes speak well for the external validity of the GBG procedure as an effective way to rapidly reduce disruptive conduct among urban public high school students without special education classifications. Anecdotal comments by the classroom teacher and student self-reports supported the social validity of the procedure. The teacher also informed the investigator that the GBG was a very useful and easy to use intervention. Several elements in this study may have facilitated behavioral change during the intervention phases. Clearly, verbally identifying misbehaving students by name, publicly stating specific transgressions, and the provision of team debits on a blackboard may have acted as a discriminative stimulus for appropriate conduct (Salend, Reynolds, & Coyle, 1989) and provided a source of immediate feedback (Hayes, 1976; Salend et al., 1989). Moreover, assigning students to teams, implicitly rewarding team pro-social conduct, and overtly debiting teams for individual transgressions may have induced a degree of peer pressure (Salend et al., 1989) that could have contributed to the observed effects. The GBG may also have reinforced social responsibility within teams as some students asked classmates to stop misbehaving after the teacher debited their team for individual transgressions.

Several modifications to the traditional GBG procedure (Barrish et al., 1969) were made to accommodate this high school sample. Rather than informing the students that they had to comply, the teacher informed them that they were going to have an "opportunity" to participate in a "competition" for prizes. Moreover, the target behaviors were described as classroom "expectations" rather than rules.

As developmental psychologists generally concur that adolescence is marked by an increased need for independence (Arnett, 1999; Reyna & Farley, 2006; Steinberg & Morris, 2001), the way that the intervention was described to this high school sample may have facilitated participation and compliance.

Although it may be argued that the introduction of a new teacher at midyear could have served as a contributing factor to change in student behavior, it is important to note that the instructor had been teaching for approximately 2 weeks before he sought help. Moreover, the teacher reportedly taught according to his normal method, and rule violations were handled with verbal reprimands or expulsions from the classroom during the adaptation period and Baseline I. The subsequent rapid and sustained reduction in misconduct during the game phases relative to the baseline phases support the notion that teacher comportment without the GBG did not influence student misconduct.

As reinforcement preference may vary by age (Cautela, 1977; Mischel & Metzner, 1962), future researchers may wish to examine the efficacy of the GBG by high school grade and/or student age. Future research may wish to examine the relationship between the GBG and student and teacher psychological adjustment. Information involving self-reported levels of anxiety, self-concept, and depression as measured by standardized tests before and after applications of the GBG may offer valuable insights about the outcomes of the procedure on a variety of personal response modalities that are typically less readily apparent. Similarly, future research may wish to test the efficacy of a modified GBG that recognizes and rewards the appropriate behavior rather than punishing the inappropriate behavior.

These findings must be viewed with the understanding that a relatively small sample was selected and that the external validity of study may be limited to students with similar educational and demographic characteristics. These observations must also be tempered with the understanding that the GBG is a multicomponent procedure and the contributions of specific elements of the intervention were not identified. Future researchers may wish to conduct dismantling studies that employ alternating treatment designs. These investigations could target the major components of the procedure and offer more precise information about the relative efficacy of the specific GBG procedures.

Declaration of Conflicting Interests

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Bios

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