

*AN EVALUATION OF THE GOOD BEHAVIOR GAME IN
KINDERGARTEN CLASSROOMS*

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The good behavior game (GBG) is a classwide group contingency that involves dividing the class into two teams, creating simple rules, and arranging contingencies for breaking or following those rules. Five kindergarten teachers and classrooms participated in this evaluation of the GBG. Disruptive behavior markedly decreased in all five classrooms as a result of the intervention. This study extends the GBG literature by systematically replicating the effects of the GBG with the youngest group of students to date.

Key words: group contingencies, classroom management, disruptive behavior

Implementation of individualized behavior plans in large general education classrooms can be extremely difficult for teachers, creating a need for classwide behavior-management strategies that are easy for teachers to implement and effective for most students. One classwide behavior-management strategy that has been primarily implemented and evaluated for first through fifth grade children is the good behavior game (GBG). Because of its simplicity and evidence of long-term effects (Kellam et al., 2008; Kellam, Ling, Merisca, Brown, & Ialongo, 1994), the GBG has been termed a “behavioral vaccine” (Embry, 2002). The GBG is even recommended by the Surgeon General as a Promising Program for prevention of youth

violence (U.S. Department of Health and Human Services, 2001).

The GBG is an interdependent group contingency that involves dividing the class into teams, creating simple rules, and arranging contingencies for breaking or following those rules. Barrish, Saunders, and Wolf (1969) conducted the first empirical evaluation of the GBG in one fourth-grade classroom. Out-of-seat and talking-out responses were substantially reduced as a result of the intervention. Several studies have since evaluated the GBG and modifications of the GBG (see Tingstrom, Sterling-Turner, & Wilczynski, 2006, for a review). Replication of the GBG with students younger than first grade would provide important information on the generality of the procedure because kindergarten represents the entry level of schooling for many children. Experience with the GBG may establish histories of appropriate behavior and rule following when entering school. Presumably, such effects could have longer term implications, and some evidence exists to support that

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notion (Embry, 2002). Thus, the purpose of this study was to evaluate the effectiveness of a modification of the GBG on the disruptive behavior of kindergarten students.

METHOD

Participants and Settings

Five kindergarten teachers at three elementary schools in an Iowa public school district volunteered to participate as implementers. The classes were general education classrooms with 15 to 22 students each, totaling 98 students. Overall, the classrooms were 53% female and 69% white, 12% black, 9% Hispanic, 8% biracial, 1% Asian, and 1% American Indian. All sessions occurred in the teachers' classrooms during group instruction. During group instruction, students were expected to sit on a carpet in front of the teacher. Group instruction occurred at least twice per day in each classroom (typically for reading and math) and varied in duration from approximately 10 to 35 min.

Target Responses, Data Collection, and Interobserver Agreement

Target responses and response definitions were developed by the experimenters in close collaboration with the teachers. Students were considered to be *out of seat* if they were not sitting with their legs crossed on their spot on the carpet and facing forward. Students were considered to be *talking out of turn* if they made any vocalization without being called on by the teacher, unless the teacher indicated that all students could call out answers. Students were considered to be *touching another student* if their hands or feet made contact with another student.

During baseline and teacher implementation phases, an observer collected data on the frequency of each of the three target responses for all individuals in the class (individual student data were not isolated) using a computer program designed for data collection in real time. During experimenter implementa-

tion (described below), the observer served as the implementer and scored behavior by writing hatch marks on a dry-erase board that was visible to the students.

A second observer recorded data during 35% of sessions for Teacher 1, 15% for Teachers 2 and 3, 20% for Teacher 4, and 11% for Teacher 5. Total agreement scores were calculated by dividing the smaller total score by the larger total score and multiplying by 100%. Total agreement was used (rather than interval-by-interval methods) because total scores were the only data collected by one observer during sessions in which an experimenter was implementing the GBG (and having a total of three additional adults in the room was viewed as too obtrusive, too impractical, or both). Mean total agreement was 84% (range, 60% to 94%), 92% (range, 82% to 97%), 80% (range, 56% to 100%), 81% (range, 56% to 95%), and 86% (range, 67% to 98%) for Teachers 1, 2, 3, 4, and 5, respectively. The lower scores were considerably lower than most scores and were obtained during baseline when extremely high rates of disruptive behavior occurred.

Design and Procedure

A nonconcurrent multiple baseline design across classrooms was used to evaluate the effectiveness of the GBG.

Baseline. During baseline, the teacher instructed the class as usual, and students were allowed to sit in spots of their choosing. The students were not told what the observer was recording and received no feedback from the observer.

Good behavior game. Each class was divided into two teams by the teacher. Teachers were asked to divide the teams in such a way that both teams were equally likely to win. That is, students whose behavior the teachers had already identified as problematic were evenly divided between the two teams. Prior to starting the game, the students were assigned spots on the carpet, and an experimenter explained to the class the rules of the game, how to win, and the

reward for the winning teams. Immediately before playing the game each session, the children were reminded of the rules and the reward for the winners. The rules of the GBG were to sit with legs crossed, to speak only when called on or when the teacher indicated that everyone could respond, and to keep hands and feet to oneself. A team won the game by having fewer points than the other team, or both teams won if they both met a set criterion selected by the teacher that was at least an 80% reduction from baseline (no more than 15 points for Teacher 1; 10 points for Teachers 2, 4, and 5; and 5 points for Teacher 3). Rewards were selected by each teacher and included snacks (e.g., cheese crackers, yogurt snacks, fruit snacks), stickers, small toys, extra recess, and extra free time.

Initially, an experimenter implemented the GBG while the teacher continued the lesson. Eventually, the teacher implemented the game while teaching the lesson (recall that all baseline sessions were conducted by the teacher). Scores were posted on a dry-erase board next to the teacher in a location that was visible to all students. When a student broke a rule, the teacher stated the rule and which team was in violation (e.g., "Team 1 needs to raise a hand to talk") and made a hatch mark on the dry-erase board. The GBG was played every time the class came to the carpet for group instruction. Follow-up data were collected in Teacher 3's classroom 1 month after the experimenter left the classroom.

RESULTS AND DISCUSSION

Figure 1 shows the rate (responses per minute) of disruptive responses for all students in each class. During baseline, relatively high and stable levels of disruptive behavior were observed in all classrooms ($M_s = 13, 5, 4, 7$, and 8 responses per minute for Teachers 1, 2, 3, 4, and 5, respectively). Disruptive behavior decreased in all classrooms following implementation of the GBG ($M_s = 2, 1, 1, 2$, and 1

responses per minute for Teachers 1, 2, 3, 4, and 5, respectively). A new student entered Teacher 2's classroom and initially refused to play the GBG the day Teacher 2 began implementing the GBG herself. The new student gradually began to join the class for group instruction and eventually played the GBG successfully. Teacher implementation of the GBG was monitored during every session to ensure that the rules and rewards were stated and rewards were provided to the winning teams contingent on meeting the criteria for earning the rewards. Treatment integrity data were collected while the teachers implemented the GBG and were calculated by comparing the teachers' total number of hatch marks to the total instances of disruptive behavior recorded by an observer. Treatment integrity averaged 60% across all five classrooms. Although teachers' implementation integrity was lower than what might be hoped, it is important to note that these levels were enough to maintain the intervention effects. The students did have a history of playing the GBG with an experimenter before the teachers began playing the GBG, which may have been necessary for the GBG to be so effective when treatment integrity declined. One area for future research could involve systematically evaluating the effects of changes in treatment integrity on the effectiveness of the GBG.

Teachers easily transitioned to playing the GBG in their classrooms while teaching without compromising the effectiveness of the GBG. These results were similar to those produced with older children (e.g., Barrish et al., 1969; Harris & Sherman, 1973) and provide further evidence that the GBG is a simple and effective classroom-management technique. Also, because some of the classrooms participated in the study for several months, the longer term effectiveness of the GBG was demonstrated. In fact, after several weeks of exposure to the GBG, Teachers 2, 3, 4, and 5 asked the students to vote on whether they would like to play the

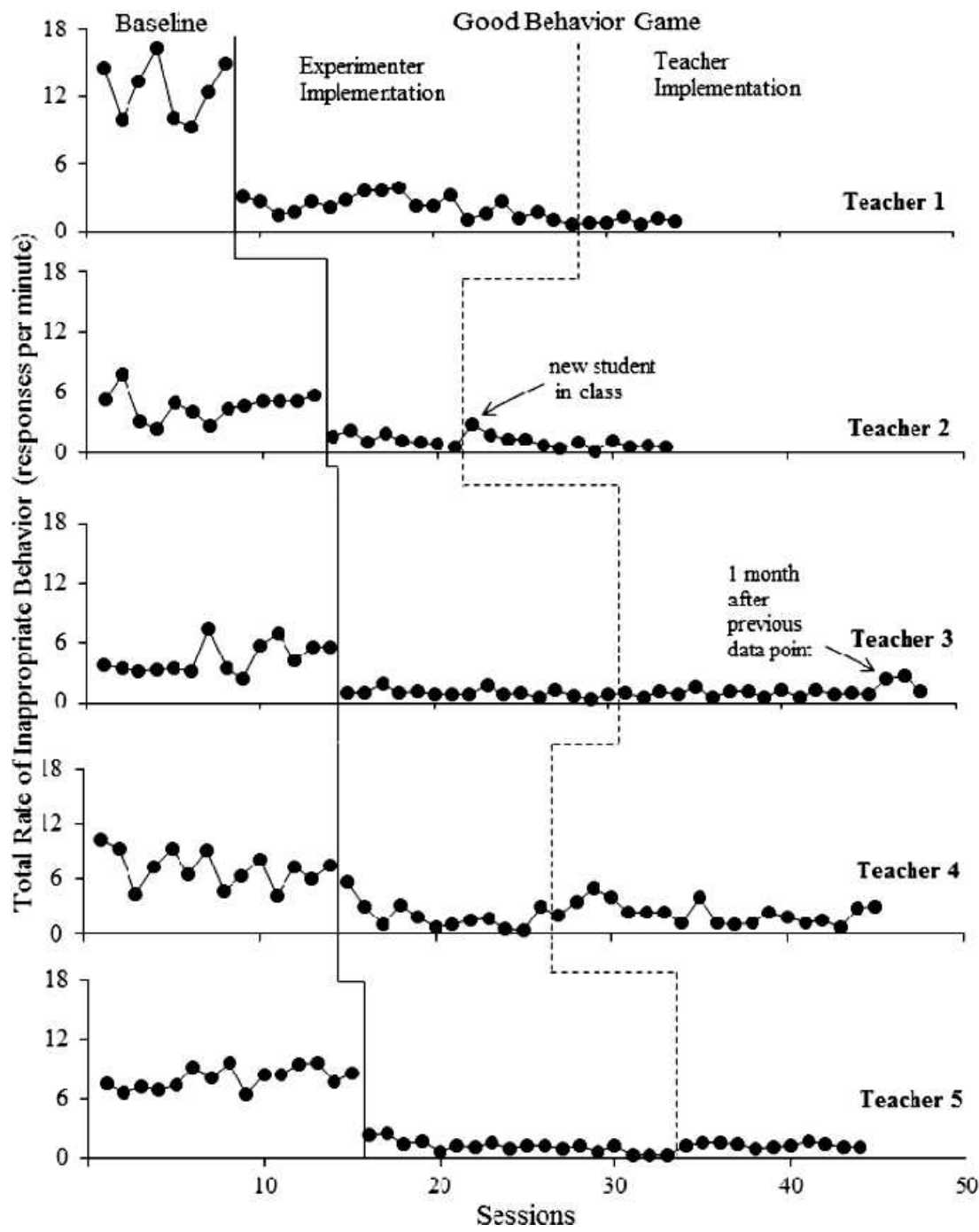


Figure 1. Total rate of disruptive behavior, including out of seat, talking out of turn, and touching, across sessions for each classroom. Teacher implementation of the GBG began after the dashed vertical line. Unique features in the data for Teachers 2 and 3 are indicated by arrows.

GBG for the rest of the year. Of the students in classrooms that participated in the social validity assessment (students for Teachers 2, 3, 4, and 5), 78% voted to continue playing the GBG for the rest of the year. Some students even played the GBG during free time; one or two students played as teachers and provided hatch marks for students who were breaking the rules. Data collection continued in Teacher 1's classroom until the end of the year, so her classroom was not asked if they wanted to continue to play. Teachers 2, 3, 4, and 5 also implemented the GBG for the remainder of the school year, independent of participation in this study. All teachers continued to play the GBG the following school year.

The GBG could be conceptualized as a type of differential reinforcement of low rates of responding schedule in which reinforcers are delivered contingent on the occurrence of fewer than a particular number of responses within a specified time period (Dietz & Repp, 1973). However, reinforcer assessments were not conducted to determine whether the rewards provided would actually function as reinforcers for any specific behavior for any or all of the children in the classrooms. Also, the GBG includes several components, making it difficult to determine which of the basic principles underlie its effectiveness. Rewards may have functioned as reinforcers for appropriate behavior, hatch marks may have functioned as punishers for disruptive behavior, and social praise or scolding from teammates could also have functioned as reinforcers or punishers.

One limitation that should be addressed in future research is that data on individuals' responses were not isolated. Data on the change in behavior of each individual student could be important, but because there were 15 to 22 students in each classroom, collecting data on each individual student was not feasible. Although the low rates of disruptive behavior during the GBG make it likely that all or most students who were engaging in disruptive

behavior during baseline responded to the intervention, the extent to which the GBG changed the behavior of each individual student is unknown. Another area for future research is to evaluate the effects of the GBG on academic performance. Because the GBG is typically played during instructional time, a decrease in disruptive behavior during this time suggests that the students should have fewer distractions from the lesson (e.g., the class is quieter so the teacher can be heard). Further support would be provided for the use of the GBG if academic improvements were demonstrated as a result.

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