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Implementation of the Good Behavior Game in Classrooms for Children with Delinquent Behavior

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Abstract

The good behavior game (GBG) is an interdependent group contingency procedure designed to reduce disruptive behavior in classroom settings. In the GBG, a class is divided into groups, simple rules are made, and contingencies are placed on the students' rule-following behavior. This procedure has been proven effective across various student ages, and its simplicity and long-term effects have contributed to its popularity in school settings. Although it has been systematically evaluated across a wide range of student ages, research on the GBG is lacking in the area of population- and setting-specific assessments. In this evaluation, the GBG was implemented in three classrooms (student ages 7-12) at a school for children with severe problem behavior; in particular, these students had already displayed behavior that might be described as "delinquent" or "predelinquent." Disruptive behavior substantially decreased across all three classrooms as a result of the intervention. This application extends the current literature by systematically replicating the results of the GBG with a different population. Implementation of the GBG, population-specific obstacles, results, and future directions are discussed.

Keywords: Good Behavior Game, Classroom, Delinquent Behavior.

Implementación del Juego del Buen Comportamiento en Aulas para Niños con Conducta Delictiva

Resumen

El Juego del Buen Comportamiento (JBC) es un procedimiento de contingencias grupales interdependientes diseñado para reducir conducta disruptiva en el salón de clases. En el JBC se divide al salón en grupos, se instauran reglas simples y se establecen contingencias sobre la conducta de seguimiento de reglas de los estudiantes. Este procedimiento ha probado ser efectivo con estudiantes de diferentes edades y su simplicidad y efectos a largo plazo han contribuido a su popularidad en ambientes escolares. Aunque ha sido evaluado sistemáticamente a través de un amplio rango de edades, hace falta investigación del JBC en el área de evaluación de poblaciones y en situaciones específicas. En este trabajo, se implementó el JBC en tres aulas (estudiantes de 7 a 12 años de edad) de una escuela para niños con problemas severos de conducta; en particular, estos estudiantes habían mostrado previamente conducta que podría describirse como "delincuente o "pre-delincuente". La conducta disruptiva disminuyó sustancialmente en los tres salones como resultado de la intervención. Esta aplicación extiende la literatura actual al replicar sistemáticamente los resultados del JBC en una población diferente. Se discute la implementación del JBC, los obstáculos específicos de la población, los resultados y las futuras direcciones.

Palabras Clave: Manejo del Aula, Juego del Buen Comportamiento, Conducta Delictiva

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First introduced by Barrish, Saunders, and Wolf (1969), the Good Behavior Game (GBG) is now a commonly used interdependent group contingency procedure designed to reduce disruptive behavior in classroom settings. Research has demonstrated that this procedure is highly effective at reducing disruptive behavior in students of various ages (Donaldson, Vollmer, Krous, Downs, & Berard, 2011; Flower, McKenna, Bunuan, Muething, & Vega, 2014; Tingstrom, Sterling-Turner, & Wilczynski, 2006). In addition to the immediate effects produced by the GBG, longitudinal studies have shown that exposing children to the contingencies of the GBG at a young age can have lasting positive effects on students' behavior (Kellam et al., 2008). For example, Kellam et al. showed that students who were exposed to the GBG in elementary school were less likely to engage in problem behavior such as aggression and drug abuse, and were less likely to require psychiatric services in adulthood. The GBG is currently considered a best-practice behavioral classroom management procedure, and its simplicity and effectiveness has led some people to refer to it as a "behavioral vaccine" (Embry, 2002). A behavioral vaccine is defined as a repeated simple behavior that reduces morbidity or mortality and increases wellbeing (Embry, 2011).

The GBG is an interdependent group contingency in which a class is divided into two teams, simple rules are made, and contingencies are placed on students' rule following behavior. Although it has been replicated with students of various ages, research on the GBG is lacking in population- and setting-specific assessments. A replication of previous research on the GBG in a population of children who engage in delinquent behavior would provide valuable information on its efficacy in an underrepresented population as well as extend its findings into the realm of students with severe problem behavior. For the purpose of this study, delinquent behavior is defined as illegal behavior that the perpetrator is not legally responsible for due to their age. Examples of delinquent behaviors are theft and violence toward students and teachers. Students in this population are at risk for negative outcomes later in life such as drug abuse, incarceration, violence, dropping out of school, and unemployment, among others (Farrington, 1989; Fergusson & Horwood, 1998; Fergusson & Lynskey, 1998). As indicated by the longitudinal research, the GBG may have the potential to reduce or even reverse these negative outcomes (Embry, 2002; Kellam et al., 2008). Thus, the purpose of the current study was to evaluate the effectiveness of the GBG on disruptive classroom behavior at a school for children with delinquent behavior.

Method

Participants and Setting

Students from three classrooms at a school for children who engage in severe problem behavior were chosen as the subjects of this study. The students were referred to the school for severe behavioral problems that prevented them from learning and distracted other students from engaging in academic activity. The students' problem behavior can be so severe that some precautions and security measures beyond that of a typical school are in place. The classrooms are all equipped with state regulated time-out rooms, separate from the main

classroom. Each classroom is also equipped with an emergency call button that is used when one or more students display dangerous behavior and help is needed to restrain them. The school is patrolled by several uniformed police officers who provide assistance when students are dangerous, and arrest students when they commit crimes at school. Although there are some additional safeguards in place, most of the staff and teachers have minimal additional training in working with these students. This presents problems when dealing with students' disruptive and sometimes dangerous behavior. Classroom 1 was a group of 2nd and 3rd grade students (aged 7-9), Classroom 2 was a group of 4th and 5th grade students (aged 9-11), and Classroom 3 was a group of 5th and 6th grade students (aged 10-12). Each classroom had approximately 6-10 students, although the student population fluctuated due to absences, truancy, and transfers to and from other schools. Overall, classrooms were approximately 80% male and 72% African American, 24% Caucasian, and 4% biracial. Sessions occurred in the classroom during group instruction and silent work time. During these times the students were expected to remain seated at their desks, and to raise their hand if they wanted to speak. Sessions were conducted 3-5 times per week and ranged from 30 to 60 minutes in duration.

Target Responses, Data Collection, and Interobserver Agreement

Target responses were based on previous research, observations of problem behavior, and recommendations from teachers. Student behavior was scored as out of seat if they were not seated at the chair attached to their assigned desk and had not received permission to be out of their seat. Out of seat was recorded as a duration measure because students frequently stayed out of their seats for extended periods of time. Time spent out of seat began when a student got out of their seat without permission and ended when they sat back down. Duration of out of seat behavior was recorded as long as at least one student was out of their seat. Student behavior was scored as talking out of turn if they made any vocalization without first raising their hand and being called upon or addressed by the teacher. Student behavior was scored as touching another student if their hands or feet made contact with another student. In order to measure treatment integrity, experimenter tally scoring was recorded whenever the experimenter notified a student that they broke a rule and placed a tally on the board. During baseline and intervention phases, an independent observer collected data on each of the target responses for all individuals in the class using handheld computers programmed with real-time data collection software.

Interobserver agreement (IOA) was calculated using the proportional agreement method for 42% of sessions in Classroom 1, 33% of sessions in Classroom 2, and 22% in Classroom 3. The total observation time for each session was divided into 10 s intervals, records for two observers were compared within each interval and the smaller number of events (discrete responses for frequency measures and seconds for duration measures) was divided by the larger number of events recorded by an observer (agreement was considered to be 1 if no events were recorded in an interval for both observers), and these numbers were averaged across the entire session. Mean agreement for talking out was 94.8%

(range, 72.6% to 100%), 86.9% (range, 68.4% to 97.7%), and 88.6% (range, 71.9% to 98.3%) for Classrooms 1, 2, and 3, respectively. Mean agreement for out of seat was 98.1% (range, 91.6% to 100%), 97.5% (range, 94.8% to 99.4%), and 93.7% (range, 73.4% to 100%) for Classrooms 1, 2, and 3, respectively. Data for touching other students were not included in this analysis because this rarely happened. Mean agreement for experimenter behavior (tally scoring) was 98.3% (range, 90% to 100%), 98.5% (range, 96.8% to 99.9%), and 97.1% (range, 95.4% to 98.9%) for Classrooms 1, 2, and 3, respectively.

Treatment integrity was calculated by counting the total number of instances of problem behavior and the total number of tallies given for the class per session, and dividing the smaller number by the larger number. Average treatment integrity was 77.3% (range: 26.7% to 100%), 84.4% (range: 62.5% to 100%), and 74.8% (range: 38.4% to 100%) for Classroom 1, 2, and 3, respectively. Although these integrity scores are low, previous research has shown that if roughly half of the instances of problem behavior are scored, the procedure is effective (Donaldson et al., 2011).

Design and Procedure

The effects of the GBG were evaluated using a non concurrent multiple baseline across classrooms with an embedded reversal in one classroom.

Baseline. During baseline, the teachers instructed their class as they would normally. During class instruction and silent work time, standard class rules indicated that students were expected to remain seated unless they got permission to get up, remain quiet unless they had been addressed by the teacher or raised their hand and been called upon, and they were not allowed to make physical contact with other students. The teachers enforced class rules with verbal reprimand sporadically, if at all. Observations were not announced to the class and observers did not interact with students.

Good Behavior Game. Each teacher divided their class into two teams. In each class, the teacher distributed students with particularly problematic behavior evenly between the two teams to make both teams equally likely to win the game. Before beginning the game, the teams were announced to the class and written on the board. Each team and the initials of its students were written on the left side of the board with a space to the right for tally marks. The rules were also written on the board underneath the scoreboard. Prior to each session, students were reminded of the rules of the game and what they could win. The rules of the GBG were that each student must remain seated unless they have permission from a teacher to get up, students could not talk unless they had been given permission or addressed by a teacher, and students were not allowed to touch each other. A team won the game by having a lower score than the other team at the end of the session. However, both teams won the game if they met a criterion that was at least an 80% reduction in the average frequency of disruptive behavior from baseline. Rewards were selected by polling the class on what types of reinforcers they would like to work for as long as they followed school rules. These included snacks (e.g., chips, fruit snacks, sugar-free candy), tangible items (e.g., pencils, erasers, stickers), or escape from academic demands (e.g., extra free time,

computer time). Students on winning teams were allowed to choose from a selection of rewards at the end of each session.

An experimenter implemented the GBG while the teacher engaged in classroom instruction. When a rule was broken, the experimenter stated the rule (e.g., “John, you need to raise your hand to talk”), and made a hatch mark next to the corresponding team on the board. The points were counted at the end of the session, winners of the game were announced, and rewards distributed.

Results

Figure 1 shows the rate (responses per minute) of talking out of turn and the percent of session that one or more students were out of their seats without permission. Talking is graphed as rate on the left y-axis, and out of seat behavior is graphed as percent of session on the right y-axis. The data for touching another student are not presented because it happened infrequently, even in baseline. In baseline, all classrooms had high rates of talking out of turn (*M*s = 3.3, 6, and 3.9 for Classroom 1, 2, and 3, respectively) and a high percent of session out of seat (*M*s = 19.2, 16.5, and 18.6 for Classroom 1, 2 and 3, respectively). After implementation of the GBG, all classrooms saw decreased levels of talking out of turn (*M*s = 0.2, 0.3, and 0.8 for Classroom 1, 2, and 3, respectively) and percent of sessions out of seat (*M*s = 0.8, 0.4, and 1.5 for Classroom 1, 2, and 3, respectively). During treatment in Classroom 2, the teacher inadvertently added a competing reinforcer to the environment. She had begun handing out tokens to students for completing their work that could be redeemed for edible items. After this was corrected, the targeted problem behavior returned to low levels. For Classroom 1, during baseline 2 there was an increase in the rate of talking (*M*s = 1.9) and percent of session out of seat (*M*s = 9.9), compared to the previous condition. Reintroduction of the GBG in this classroom produced decreases in the rate of talking (*M*s = 0.1) and percent of session out of seat (*M*s = 0.6). Reduction in disruptive behavior for all three classrooms was well below the 80% reduction required to win the game; therefore, more often than not both teams “won” on a given day. As a measure of social validity, before sessions the teachers were asked if they wanted to implement the GBG. The answer was yes 100% of the time for all classrooms.

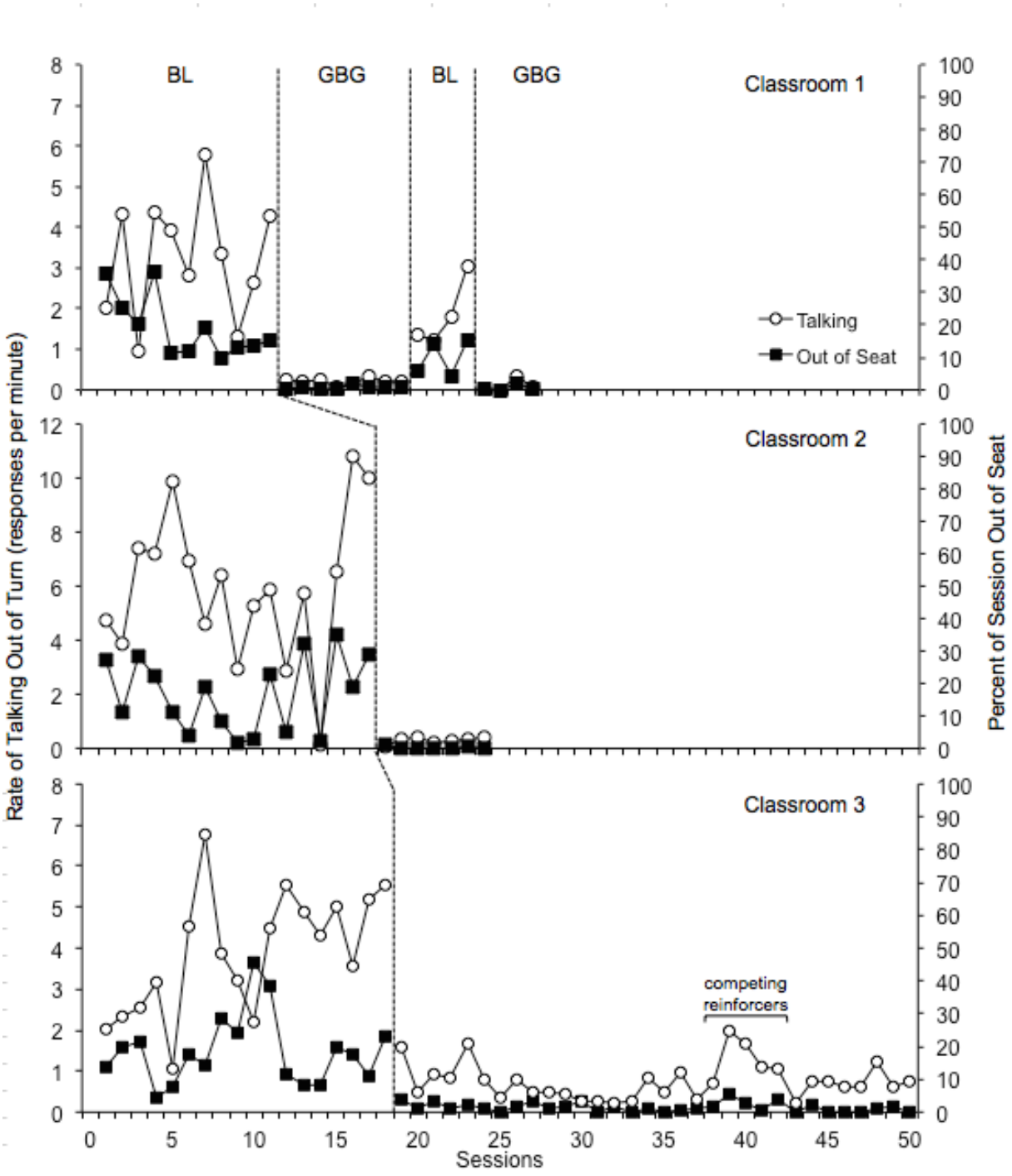

Figure 1. Responses per minute of talking out of turn and percent of session out of seat across baseline and treatment sessions in Classrooms 1, 2, and 3. BL = Baseline; GBG= Good Behavior Game.

Discussion

The findings of this study are consistent with past research on the GBG. We found that the procedures produced a marked decrease in all targeted problem behaviors. These findings indicate that the GBG is generalizable to classroom settings in which students previously displayed very severe problem behavior. Students with severe problem behavior are frequently educated at alternative learning schools (Van Acker, 2007) and it is important to note that the GBG appeared to be as effective in this setting as other, more conventional, classroom settings. All of the teachers at this school who have had experience with the GBG have spoken highly of it. They have said that it makes their classroom less stressful and that the students are less distracted. Many of students also reported that they enjoy the game and look forward to playing it.

The implementation of the GBG in this population and setting presents particular obstacles. Initially, there were some problems with reinforcer selection. Due to restricted diets and school rules, edible reinforcers were limited. Students would also save their snacks to eat later at inappropriate times and some teachers were reluctant to provide free time for students as a reinforcer because they thought it might cause disruption. To make reinforcer consumption less problematic, in some classrooms we made a rule that the students had to consume their edible reinforcers at a certain time. For the free time, we asked teachers to try giving their students the extra privilege and monitor their behavior. If the free time were to become disruptive, only edibles would be used. However, students (somewhat surprisingly) engaged in little to no problem behavior during free time. One other concern involved the behavior of individual students. On some days, certain students' behavior would be particularly difficult and students seemed to deliberately break rules to make their team gain points. To address this issue, we placed individuals having problems like this on their own team, apart from the original two teams, so that their behavior only affected themselves. These students would occasionally have tantrums so severe that they were removed from the class by resource officers. However, this problem with behavior was seen in both baseline and treatment and, therefore, was not a negative side effect of the GBG. The fact that implementation of the GBG produced marked decreases in the levels of disruptive behavior under particularly challenging conditions provides further evidence of its effectiveness in a wide range of classroom types.

There were some limitations to this application of the GBG. Some of the teachers have claimed that the game would be too difficult to implement on their own because it would disrupt their teaching. Many of the classes at the school are taught in smaller groups away from the chalkboard and it could be disruptive for the teacher to get up to mark each point. The inability to implement the GBG could be a good reason to request more resources in the classroom, or better training and use of teachers' aides. Also, other methods of scorekeeping that are less demanding on the teacher should be explored. It is worth mentioning that disruptions in teaching by implementing the GBG may be high at the beginning of the implementation but low once levels of problem behavior have decreased. Also, it is possible that the time teachers spend keeping order in a class with high levels of problem behavior could be more than the time spent implementing the GBG.

Several implications for future research can be taken from this study. First, variations on scorekeeping for the game should be explored. One way to make it easier for the teacher to implement would be to have students mark their own points on the board. This could be successful as long as the students cooperated. Another approach would be to have the teacher use a smaller board to carry around the room while teaching away from the main board, or the teacher could carry a remote that would add points to a score on a smart board, projector screen, or other electronic device. Points could also be recorded covertly, so the students were unaware of how many points they have. Teacher training could also be implemented prior to the start of the school year, which would enable the teachers to include the GBG in planning their standard classroom procedures. The GBG could also be combined with other procedures designed to increase appropriate class participation by students.

In addition to variations on scoring, other dependent variables could be evaluated. Time sampling measures could be used to observe students' on task behavior. This would provide data on problem behavior as well as what students are doing when they are not engaging in problem behavior. The evaluation of academic performance would also be an important extension for the GBG; to date, very few if any studies have correlated academic performance to instruction following during the GBG. Demonstrating that the GBG not only reduces problem behavior but also increases academic performance would provide more evidence supporting the use of the procedure in schools. One way to do this could be to examine grades and standardized test scores before and after implementation of the GBG. Another way to look at academics could be to collect data on the amount of time spent teaching and time spent reprimanding students to see if there is an increase in teaching time with the implementation of the GBG. It would also be interesting to record the frequency of disciplinary referrals and other documentations of problem behavior outside of the classroom. Demonstrating that the GBG can reduce students' problem behavior during the game as well as throughout the day in other settings would be strong evidence supporting its use in school settings. The GBG was effective at reducing targeted high frequency, low intensity behaviors, but future studies could also focus on low frequency, high intensity behaviors such as physical violence and major property destruction.

Although there is research on the GBG that has proven its effectiveness in different cultural and linguistic settings (e.g., Leflot, van Lier, Onghena, & Colpin, 2013; Ruiz-Olivares, Pino, & Herruzo, 2010); the application and research of the GBG seems to be scarce in Latin American countries with very few empirical studies conducted (Pérez, Fernández, Rodríguez, & De la Barra, 2004; Pérez, Rodríguez, De la Barra, & Fernández, 2005). In order to internationally disseminate the efficacy and utility of the GBG, a large-scale replication of these results would be very useful. In 2002, Embry wrote that large-scale replications could be key in persuading the scientific community as well as educators and policy makers to encourage the widespread use of the GBG as a behavioral vaccine. Inclusion of delinquent students in these large-scale replications would be a potentially valuable demonstration of the efficacy and generalizability of the procedure.

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