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A Comparison of Teacher and Student Choices on Reinforcement Criteria in Using the Caught Being Good Game (CBGG) to Improve Classroom Behavior

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A Comparison of Teacher and Student Choices on Reinforcement Criteria in Using the Caught Being Good Game (CBGG) to Improve Classroom Behavior

by

Michael Marotta

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science Applied Behavior Analysis Department of Child and Family Studies College of Behavioral and Community Science University of South Florida

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Keywords: Group contingency, student choice, teacher choice, disruption, academic engagement, class-wide intervention

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Dedication

I dedicate this manuscript to my grandma, Sharon Franklin, for taking my little brother and me in at a time when life seemed its darkest, who supported us and always reminded me to stop and breathe when things seemed to be overwhelming. I would also like to dedicate this manuscript to my brother, Angelo Marotta, who always pushed me to do my best and no matter what, was there when I needed him. I would also like to dedicate this manuscript to my parents, Tina Marotta and Michael Franklin, for showing me that great barriers can be overcome.
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Abstract

The Caught Being Good Game (CBGG), a variation of Good Behavior Game, is an interdependent group contingency, which focuses on giving students points for engaging in appropriate, rule-following behavior. The present study aimed to expand the literature on CBGG by targeting students in general education classrooms and comparing the impact of student-chosen versus teacher-chosen contingency criteria on disruptive behavior and academic engagement. Four students who were at-risk for developing emotional disorders in two general elementary classrooms were targeted in the study. A multiple-baseline across participants design with an embedded alternating treatments design was used to evaluate the outcomes of the CBGG. Results indicated that the CBGG intervention resulted in decreasing disruptive behavior and increasing academic engagement for all four students although data demonstrated limited experimental control. Moderate differences in improvement in classroom behavior were observed when comparing teacher-chosen and student-chosen contingency criteria; however, the teacher-chosen criteria condition led to overall lower levels of disruptive behavior and higher levels of academic engagement. Social validity assessments indicated that both the teachers and the students found the intervention to be acceptable.

Keywords: Group contingency, student choice, teacher choice, disruption, academic engagement, class-wide intervention
Introduction

Managing student behavior in the classroom is not a novel concern for teachers (Chafouleas, Volpe, Gresham, & Cook, 2010). In fact, teachers often seek assistance with classroom management (Stag & Quiroz, 1997). Many teachers feel that the time spent dealing with disruptive behavior negatively affects all of the students in the classroom, not just the student who exhibits disruptive behavior (Westling, 2010). Time spent on handling disruptive behavior also takes away from instructional time and adds to stress levels experienced by teachers. Not only is the student’s problem behavior a source of stress, but teachers also feel they do not have adequate support or the proper knowledge to handle disruptive behavior (Westling, 2010). Thus, teachers often rely on reprimands and other punishment procedures to decrease disruptive behavior and manage their classrooms (Stag & Quiroz, 1997; Van Acker & Grant, 1996). A more proactive and positive approach should be used (Sugai & Horner, 2002). One such way to promote positive interventions is the use of School-wide Positive Behavior Intervention and Support (SWPBIS).

SWPBIS is a tiered system within a school that employs evidence-based practices where the amount of support and interventions increases across each of the three tiers based on student response to each intervention effort (Horner et al., 2009). Tier I consists of a school-wide preventive intervention in which a team from the school sets rules and expectations for all students. Tier II interventions are for groups of students in which Tier I was not an effective support system, but do not require the support from Tier III. Tier III is for students who need
individualized behavior support (Horner et al., 2009; Sugai, Spague, Horner, & Walker, 2000). Within the SWPBIS framework, small groups or classroom level interventions are implemented to support students who are at-risk for developing severe problem behavior, which often benefits the entire classroom of students by improving the classroom ecology and teacher-student interactions (Anderson & Borgmeier, 2010). The body of research on potential Tier II interventions is growing and offering many interventions from which schools may choose (Horner, Sugai, & Anderson, 2010). However, even with many interventions from which to choose, an important issue to consider is contextual fit.

Contextual fit refers to the extent in which an intervention is consistent with the values of those who are implementing it (Albin, Lucyshyn, Horner, & Flannery, 1996). As the intervention is developed, it is possible that the intervention could be well designed and has a solid foundation in behavioral principles, yet still lacks contextual fit (Albin et al., 1996; Benazzi, Horner, & Good, 2006). Behavior interventions that have low contextual fit can result in low compliance with the implementation of the intervention (Albin et al., 1996; Allen & Warzak, 2000; Horner, Blitz, & Ross, 2014). A tier II intervention that has a large growing body of research and demonstrates good contextual fit within classrooms is group contingencies (Brantley & Webster, 1993; Christ & Christ, 2006; Hansen & Lignugaris-Kraft, 2005; Williamson, Campbell-Whatley, & Lo, 2009).

Recently, group contingencies have been used as a Tier II or class-wide intervention in schools implementing SWPBIS (Ennis, Blair, & George, 2016). When implementing group contingences, students receive a predetermined reinforcer if the behavior of one (small group) or all students (entire class) meets some set criteria (Litow & Pumroy, 1975; Watson & Skinner, 2004). Three different group contingencies have been used in school settings: dependent,
independent, and interdependent (Litow & Pumroy, 1975; Watson & Skinner, 2004). Dependent group contingency is when the behavior of one student or a small group of students determines the outcome for all students in the class (Litow & Pumroy, 1975; Watson & Skinner, 2004). Independent group contingency is when the criterion to earn the reinforcer is based on individual performance, and the same contingency is implemented simultaneously across all members of the class (Codding, Chan-Iannetta, George, Ferreira, & Volpe, 2011; Watson & Skinner, 2004). Finally, interdependent group contingency is based on the entire group performance (Hawkins, Musti-Rao, Hughes, Berry, & McGuire, 2009; Watson & Skinner, 2004). Of the three group contingencies, the interdependent contingency has most frequently been examined in the literature (Little, Akin-Little, & O’Neill, 2015; Maggin, Johnson, Chafouleas, Ruberto, & Berggren, 2012).

Interdependent group contingencies have targeted a wide variety of behaviors, settings, and ages (Codding et al., 2011; Hawkins et al., 2009; Kelshaw-Levering, Sterling-Turner, Henry, & Skinner, 2000). Behaviors that have been targeted include: on-task and off-task behavior (Christ & Christ, 2006; Crouch, Gresham, & Wright, 1985; Denune et al., 2015; Ling & Barnett, 2013), academic work completion and worksheet accuracy (Bear & Richardson, 1980; Hawkins et al., 2009; Little, Akin-Little, & Newman-Eig, 2010; Theodore et al., 2009), and transition time (Yarbrough, Skinner, Lee, & Lemmons, 2004).

The Good Behavior Game (GBG) is one type of an interdependent group contingency. The GBG consists of splitting the classroom into teams, letting the teams pick their names and writing the names on the board for all to see. The teacher announces to the class that they will be playing a game; if they see anyone from another team breaking one of the game rules (classroom expectation), that team will be given a point. If a team earns more than a set criterion of points,
they lose access to the backup reinforcers. More than one team can score a low number of points and win. If multiple teams score below the criterion, the team with the lowest amount of points can be given a bigger reinforcer if the teacher wishes. Also, the teacher can design the GBG rules so that even if all teams fail to stay within the win’ threshold, the team with the lowest amount of points can still win. The GBG has been shown to be effective across multiple age groups, behaviors, and even with students with disabilities (Tingstrom, Sterling-Turner, & Wilczynski, 2006). The GBG has also been shown to change behavior in settings outside of the classroom. For example, it has been used in a library (Fisbein & Wasik, 1981) and more recently, a cafeteria (McCurdy, Lannie, & Barnabas, 2009).

Despite the large amount of supporting evidence for the GBG, there are disadvantages to consider. Whereas peer influence is often an advantage within the game of having students encourage one another to win the game, it can also be a large disadvantage (Tingstrom et al., 2006). For example, students could respond emotionally toward peers who are breaking the rules and could cause the team to lose the game. Another disadvantage is that a student who does not work for the reinforcer may sabotage the game for their team. Researchers have remedied this disadvantage in several ways. Some studies have combined interdependent and independent group contingencies (Crouch, Gresham, & Wright, 1985) or added mystery to the game by making certain components unknown to the students.

For example, students can be unaware of the target behavior, reinforcer, type of contingency in place, or the criteria for earning the reward when components are randomized (e.g., Ennis, Blair, & George, 2016; Kelshaw-Levering et al., 2000; Theodore, Bray, & Kehle, 2004; Theodore et al., 2009). Kelshaw-Levering et al. (2000) examined whether there was a difference in the impact of a group contingency when using a randomized reinforcer or if all
components of the contingency (i.e., criteria, behavior, and group or individual performance) were randomized. The authors used a multi-phase time-series design with 2nd graders. Target behaviors included off task, inappropriate vocalization, out-of-area, and noncompliance. During the randomized reinforcer phase, the teacher told the class the rules of the game and the target behaviors, defined each target behavior, and told the students that if they earned less than a set number of marks, they could earn a reward. The randomized reinforcer was chosen from a jar that was placed on the teacher’s desk labeled “Reinforcers,” which had pieces of paper denoting possible rewards the students could earn. During this phase, all other aspects of the contingency were known.

Even though the GBG is supported by research and has high social validity with teachers and students, it might not fit within a SWPBIS setting where positive behavior is the focus. The main premise of the GBG are that students are given points for engaging in rule-violating behavior and earn reinforcers for having less points than an opposing team. Although several studies focused on appropriate behavior in using GBG (e.g., Tingstrom et al., 2006), most studies involved keeping track of problem behavior to determine the group contingency. To better contextually-fit within a SWPBIS system, a more positive approach to the GBG should be used.

The Caught Being Good Game (CBGG) is a recent attempt to create an intervention that uses GBG-type group contingency with a focus on appropriate behaviors, which may better fit the contextual model of SWPBIS (Wright & McCurdy, 2012). In the CBGG, access to the reinforcer is contingent on the teams gaining points that either meet or exceed a criterion for engaging in appropriate behaviors. Wright and McCurdy (2012) compared the GBG and CBGG in two general education classrooms. Results showed that both were equally effective in affecting disruptive and on-task behavior of the students. Teachers and students found both
interventions to be acceptable. With both interventions having an equal impact on student behavior, schools who implement SWPBIS might choose to use the CBGG because it aligns better with the core of PBIS that addresses challenging student behavior through teaching and reinforcing appropriate alternative behaviors. However, the CBGG has only one published article that examined its impact on student behavior to date (Wright & McCurdy, 2012), whereas the GBG has been labeled as an evidence-based practice and has years of research to support its effectiveness (Tingstrom et al., 2006). Because of the limited research on CBGG, Wright and McCurdy (2012) suggested multiple areas for future research, such as testing CBGG with students in different grade levels and evaluating generalization and maintenance effects of the intervention.

Another limitation of the current literature on group contingencies, including CBGG, is little or no information on the impact of reinforcement criteria on student behavior. The criteria to determine whether or not an individual student or the entire group would receive reinforcement is one of the key components of group contingency interventions; however, currently, it is not known how different reinforcement criteria would impact student behavior nor whether involving students in choosing the criteria would result in better outcomes than choosing the criteria without student involvement. Moreover, very few studies report on the types of reinforcement criteria used for study participants and how the criteria were determined.

For example, Theodore et al. (2009) examined how a randomized interdependent group contingency could improve homework performance of 4th graders. The authors targeted the frequency completed and percentage of accuracy of spelling homework. The criteria used for students to access group reinforcement were based on whether the class met daily goals, such as completion of spelling homework by all students. The daily criterion was randomly selected.
from these predetermined criteria (a total of eight) by selecting one card from a jar. Although the authors stated that the reinforcers were selected based on suggestions made by the teacher and students, this was not explicitly explained.

Heering and Wilder (2006) used a dependent group contingency to increase on-task behavior with 3rd and 4th graders during math sessions. Access to the reinforcer was contingent on whether the students in a randomly selected row during a random check were on-task for at least 75% of the observed intervals during class. To be considered on-task, every student in the selected row had to be engaging in on-task behavior at the moment of observation. Murphy et al. (2007) used an interdependent group contingency to decrease disruptive behavior of preschool students. The reinforcement criterion selected was five or fewer checkmarks for rule violations; if any student in the class received more than five checks, the entire class was denied access to the reinforcer. However, as with Theodore et al.’s study, information on how the reinforcement criteria were selected was not provided.

Offering choices to students or embedding preference into activities is easy and effective to decrease problem behavior and increase appropriate behavior (Romaniuk & Miltenberger, 2001; Morgan, 2006; Shogren, Faggella-Luby, Bae, & Wehmeyer, 2004; Umbreit & Blair, 1996). Therefore, it would be valuable to assess whether the students’ classroom behavior can be further improved by allowing the students to choose the reinforcement criteria or by selecting the criteria preferred by students. Additional example of reinforcement criteria is 70% -80% engagement in rule-following behaviors (e.g., sitting in the seat, using respectful language, completing assignment) out of the possible number of points (Denune et al., 2015).

To address the gaps in the literature, the current study aimed at further examining the outcomes of implementing the CBGG with classroom teachers and students who are at-risk for
developing behavioral disorders in an elementary school. This study extended the literature by further evaluating the impact of the CBGG on student disruptive behavior and academic engagement, and comparing the impact of student-chosen versus teacher-chosen contingency (reinforcement) criteria on the student behaviors. The research addressed the following questions:

1. To what extent will the CBGG intervention impact disruptive behavior and academic engagement in students who have difficulty engaging in academic activities?

2. Will there be differences between teacher-chosen and student-chosen reinforcement criteria in improving the target behaviors?

It was hypothesized that the CBGG would decrease disruptive behavior and increase academic engagement, and differences would be observed in the levels of student behaviors when using student- versus teacher-chosen reinforcement criteria.
Methods

Participants

Four students and their corresponding teachers of two 3rd grade general education classrooms participated in the study. The researcher contacted the school principal and discussed the study and its objectives. Based on this information the principal provided the researcher with teachers’ names he thought would be a good fit for the study. The researcher contacted the teachers and informed them of the study and gained written consent if they wished to be part of the study. Inclusion of each teacher and student was determined by a teacher interview with questions pertaining to the recommended student’s attendance, behavior, and any interventions that may already be in place. Teachers were selected for inclusion based on the following criteria: (a) consented to receive training and implement the intervention, (b) nominated at least two students whom they considered as needing additional behavior support, and (c) were interested in implementing the CBGG class-wide to improve target students’ behavior. Teachers who had a history of using group contingencies in their classroom were excluded from the study.

Once teacher written informed consent forms were obtained, the researcher interviewed the teachers briefly (approximately 20 min). Information gathered included: (a) list of disruptive behavior that concerned the teacher, (b) definition of each disruptive behavior, (c) students whom the teacher thought would benefit from the intervention, (d) a potential target academic time period, (e) typical instructional activities students participated in and classroom management strategies the teacher used during the potential target academic time period, and (f) type of daily worksheets or quizzes given to students during the time period (see Appendix A for
The interview for both teachers took place after school. Following the interview, the researcher obtained parental permission and verbal assent from potential target students and conducted a 15-min direct observation using a 15-s partial interval recording system to screen the student’s current level of disruptive behavior and confirm eligibility.

Selection criteria for student participation included: (a) teacher had difficulty managing their behavior with typical classroom management practices, (b) engaged in disruptive behavior daily for at least 25% of the time during the potential target academic time period, and (c) were between the ages of 7 and 10. Students who were frequently absent or exhibited severe challenging behavior that might have been harmful to themselves or others (e.g., self-injury or physical aggression) were excluded. None of the selected students had received an office discipline referral prior to starting the study for major problem behavior.

Informed consent was obtained from the students by asking them their vocal assent and sending home parent permission forms for the parents to complete and return. Informed parental permission and vocal consent from the remaining students in the classroom, who would not be targeted for intervention, was also be obtained to gather social validity data after the study to compare the social acceptance of the intervention from both selected participants and from their peers in the classroom.

**Tim.** Tim was a 9-year-old Caucasian male student. Mrs. Pink stated that Tim would often work hard but had to have the last say in anything if he had gotten into an argument with a student or with a teacher. He frequently engaged in high levels of disruptive behavior and low levels of academic engagement during most of academic time periods. Examples of disruptive behavior exhibited by Tim included talking about things not related to the topic, laughing loudly, tapping pencil with enough force to hear across the room, and leaving his seat without teacher
permission. Previous intervention included moving of clip on the color chart, asked to explain why he acted the way he did, moving to another seat, phone call to parents, and being asked to apologize.

**Damian.** Damian was a 9-year-old Caucasian male student in a 3rd grade general education classroom. Damian was nominated for the study due to his problem behavior that had resulted in him receiving an out of school suspension. Mrs. Pink reported that Damian had difficulty completing academic tasks and sought attention from his classmates by engaging problem behavior that would make the others laugh. His typical disruptive behavior included playing with objects not relevant to the topic being taught, leaning in his chair, making loud vocal sounds (e.g., tongue clicking, signing, mouth popping), throwing items and calling other students names. Previous interventions included moving of his clip down on the color chart, being asked to apologize, giving the teacher the item he was being disruptive with, being moved to another seat, out of school suspension, phone call to parents, and being sent to the office.

**Jason.** Jason was an 8-year-old African-American male student. Jason was also nominated for the study due to his disruptive behavior during academic activities and parents’ interest in the study. Mr. Green stated that Jason often played around and be a class clown, engaging in high levels of disruptive behavior during academic time periods. Examples of disruptive behavior for Jason were dancing, leaning in his chair, and calling out to students across the room. Previous intervention included seat changes, taking recess time away, phone calls to parents, being sent to other areas of the classroom, and being asked to explain why he acted the way he did.

**Dick.** Dick was a 9-year-old Caucasian male student. He was diagnosed as having Attention-Deficit Hyperactive Disorder (ADHD). He did not take any medication or receive
additional services for this diagnosis according to the teacher. His teacher, Mr. Green reported that Dick’s grades were below average and would often fluctuate and that receiving a 65% on an assignment was a higher grade for Dick. Dick was nominated for the study due to his engagement in disruptive behavior that interfered with his academic activities and parents’ interest in the study. He often engaged in disruptive behavior such as playing with objects not relevant to the topic being taught, talking to others when it was not allowed and getting up from his seat and walking around without permission. After receiving parental consent, the teacher confirmed during the interview that Dick engaged in a high level of disruptive behavior and low level of academic engagement during the academic period. Previous interventions included seat changes, taking recess time away, meeting with parents, and phone calls to parent.

**Mr. Green.** Mr. Green was a 37-year-old male who had three years of teaching experience, all within the public education system. Classroom management systems included: school-wide expectations, office discipline referrals, classroom token economy (i.e., students earned tokens based on appropriate behavior and could trade the tokens in for backup reinforcers), color clip chart (i.e., students moved up and down a chart based on their behavior) and a response cost for disruptive behavior (i.e., students earned a tally when the teacher felt the student had been very disruptive and the number of tallies the student accrued corresponded to the number of minutes a student lost during the next recess session).

**Mrs. Pink.** Mrs. Pink was a 57-year-old female who had 35 years of teacher experience, 2 years being in private schools and the rest in the public schools. The same classroom strategies as used in Classroom 1 were also used in Classroom 2.

**Setting**
This study occurred in two classrooms of a suburban elementary school (Pre-K through 5th grade). The school had approximately 650 students and was a Title I school with 45% of students receiving free or reduced-price lunch. To be considered an effective Multi-Tiered System of Supports (MTSS) school, approximately 80% of students would have zero to one office discipline referrals (ODRs) with another 15% having two to five and the last 5% having six or more ODRs (Anderson & Kincaid, 2005). The participating school reported that 96% of students had zero to one ODRs, 3% of students had two to five ODRS and less than 1% of students had six or more ODRs during the previous school year. Although these data indicted an effective MTSS school, some teachers still expressed concerns about disruptive students within their classroom where the behavior did not warrant ODRs. The study targeted the most problematic academic period for intervention in which the targeted students engaged in high rates of disruptive behavior. The academic period was selected based on teacher report and data collected during an initial eligibility check for each student.

The study took place in two general education classrooms. The first classroom was a 3rd grade class with 21 students. Dick and Jason belonged in this classroom. The English Language Art (ELA) was the targeted academic time selected by the classroom teacher. During the first half of the study the targeted academic time was held before lunch but was switched to the afternoon after lunch when the school had returned after a school break. The intervention was implemented during approximately the last 30-45 min of the 90 min ELA block. Typical tasks during ELA included silent reading, reading comprehension activities, story writing, group reading, and taking comprehension-based assessments. The classroom was set up with five tables spaced throughout the room with about 4 to 5 students assigned to each table. Mr. Green was the teacher for this classroom.
The second classroom was also a 3rd grade class with 20 students. Tim and Damian belonged in this classroom. ELA was also the targeted academic period for both students. The intervention was implemented during approximately the first 45-60 min of the 90 min ELA block. Classroom arrangement was the same as Classroom 1. Typically, each table was set up as a different activity and the tables would rotate every 15 to 20 min at each center. Center activities during ELA included independent reading, vocabulary work, group reading, developing essays, and answering comprehension questions. Mrs. Pink was the teacher for Classroom 2.

Data Collection

Disruptive behavior and academic engagement. The primary dependent variables were disruptive behavior and academic engagement. Disruptive behavior was defined as behavior that was distracting to others (e.g., touching others such as poking, punching or kicking them in any part of the body, touching or stealing other’s materials, yelling, tattling on other students, cursing, dancing, and pushing others) or impeded ongoing activities in the classroom, such as call outs, talking to a peer without permission or about irrelevant topic, out of seat (without permission or not going straight to needed materials and back, running around the room), throwing objects, making inappropriate noises (e.g., humming, whistling, signing, tongue or cheek clicking and lip popping), rocking in chair, and playing with irrelevant objects or academic materials in an non-academic way (e.g., spinning rulers on pencils, bending rulers, reading book upside down, tearing apart erasers, spinning pencils or pens in hand, throwing pencils or pens in the air, and tapping pencils or pens on table loud enough to create an audible noise).

Academic engagement was defined as attending to teacher, staying engaged in reading and writing for the majority of interval (longer than 5 s), answering teacher questions or asking questions related to task, completing assignments, following directions, raising hand to speak or
go to the bathroom or water, attending to materials for longer than 5 s (e.g., looking towards the
teacher, assignment at desk), and talking about academic materials (e.g., group discussion about
book being read or assignment being worked on) at hand when doing group work. Standing was
considered academically engaged if they were within 1 ft of their seat, working on the given
assignment.

Data on both disruptive behavior and academic engagement were collected using a 15-s
partial interval recording system. Both disruptive behavior and academic engagement were
measured as the percentage of intervals where the behavior occurred in 15 s intervals during
observations. Data were collected 2-5 times per week during the targeted instructional period
when the teacher implemented the CBGG for 30-60 min (30-45 min for Mr. Green and 45-60
min for Mrs. Pink); however, data were collected for the first approximately 30 min of the
instructional period or when the activity finished, whichever occurred first. Data were collected
with a pencil, scoring sheets (see Appendix B), and an electronic timing device on a smart phone
to signal intervals within observations. The timer was set to vibration mode to avoid interruption
of classroom activities.

**Treatment integrity.** The researcher assessed treatment integrity during all intervention
sessions across conditions using a checklist with a task analysis of implementation steps
(Appendix C). The checklist was designed to measure the teacher’s adherence to each of the
intervention steps. The checklist was scored using a yes/no format. Implementation steps
included: (a) having ready all materials needed to start the game, (b) starting the game at the
beginning of the class by explaining the rules to the class, (c) conducting a quick role play of
what both inappropriate and appropriate behaviors look like, (d) dividing the class into small
groups (teams), (d) scanning the room and giving teams points, (e) paring verbal praise when
given points, (f) announcing end of game, (g) randomly selecting a criterion and reinforcer from boxes, and (h) giving teams the reinforcer if it was earned. The number of the components completed correctly was divided by the total number of components and then multiplied by 100 to determine the percentage fidelity of intervention implementation. Treatment integrity was measured as a percentage of steps completed correctly. The treatment integrity averaged 98% (range: 89%-100%) for Mr. Green (Dick’s and Jason’s teacher) and 99% (range: 89%-100%) for Mrs. Pink (Tim’s and Damian’s teacher).

**Social validity.** Acceptability of the CBGG was assessed with teachers following the intervention phase by utilizing an adapted Intervention Rating Profile (IRP-15; Martens, Witt, Elliot, & Darveaux, 1985), which was developed for use in schools, (Appendix F). Fifteen items were assessed using a 6-point Likert-type scale to determine the degree to which the teachers found the CBGG intervention to be acceptable, effective, and efficient. Items are ranked from strongly disagree to strongly agree. The student version, which was developed by the researcher, used age-appropriate language and included nine items with six 5-point Likert-type questions and three open-ended questions (Appendix G). The questionnaire focused on assessing student perceived acceptability, satisfaction, and side effects of each of the CBGG intervention (i.e., CBGG with teacher-chosen or with student-chosen criterion).

**Interobserver agreement (IOA).** To assess IOA, three research assistants independently and simultaneously collected data on the target behaviors and treatment integrity for 36.8% of sessions across all participants. The PI trained the research assistants on how to collect these data using Behavior Skills Training (BST; Miltenberger, 2001) with YouTube videos of classroom that included students engaging in behaviors they would be observing in the classroom. These training mediums were as close to the actual classroom environment as possible in terms of
occurrence and topographies of behavior. Research assistants were required to score 90% or higher on practice data training forms to collect data. IOA for disruptive behavior and academic engagement was calculated by dividing the number of intervals with agreements by the total number of intervals with agreements and disagreements and multiplying by 100%. IOA for treatment fidelity was calculated based on the number of steps agreed upon by each observer divided by the total number of steps and then multiplied by 100%.

IOA on student data averaged 95.8% across participants, conditions, and behaviors. Dick’s IOA averaged 96.6% across behaviors and conditions, with 93.15% for disruption and 85.75% for academic engagement in baseline, 99.15% for disruption and 100% for academic engagement in teacher teacher-chosen condition, and 100% for disruption and 98.6% for academic engagement in student-chosen condition. For Jason, IOA averaged 96.1% across behaviors and conditions. Across conditions, IOA was between 91.05% and 95.53% for disruption and between 93.35% and 99.43% for academic engagement. For Tim, his overall IOA was 95.5% across behaviors and conditions. Average IOA was 85% for disruption and 82.5% for academic engagement in baseline, 96.3% for disruption and 97.56% for academic engagement in teacher-chosen condition, and 95.17% for disruption, and 99.17% for academic engagement in student-chosen condition. Damian’s IOA averaged 95.2% across behaviors and conditions. His IOA was between 92.95%-94.77% for disruption and between 93.75%-97.85% for academic engagement across conditions. IOA on treatment integrity was 100% for both teachers.

**Experimental Design and Procedures**

**Experimental design.** A multiple baseline across participants design with an embedded alternating treatments design was used to evaluate the outcomes of the intervention. Within the intervention phase, the CBGG with teacher-chosen criteria condition and CBGG with student-
chosen criteria condition were alternated. In each session, a condition to be tested was selected randomly. The presentation of the conditions were attempted to be counterbalanced by testing the same number of times. Dick and Jason conditions were counterbalanced but due to timing and scheduling Tim and Damian were not counter balanced with both students experiencing the teacher-chosen condition more than the student-chosen condition.

**Baseline.** During this phase, teachers conducted class as usual using school-wide (e.g., school-wide token economy and student of the week) and class-wide (e.g., color card system, posted school expectation, and posted class rules) behavior systems. Any existing behavior supports already being implemented were in place. As described in the participants and setting, the students participated in silent reading, reading comprehension activities, story writing, group reading, and taking comprehension-based assessments, and the teachers would go through their lesson plan and respond to student behavior accordingly. For school appropriate behavior students would receive praise or have their color clip moved up. If the student was breaking a rule their color clip could be moved down, moved to another area, sent to the office or lose recess time. The CBGG was not implemented.

**Preference assessment.** At the end of the baseline phase, a preference assessment was conducted with teachers and students, including the target students, to choose the potential reinforcers to be used as rewards for meeting the set criteria during intervention. First, the teachers used a questionnaire with reinforcement items and questions to identify potential reinforcers that were acceptable and appropriate for their classroom setting (Appendix D). The researcher made a reinforcer menu based on the items the teacher perceived as acceptable to have as rewards in their classroom. The menu included common reinforcers used with students, such as tangible items (e.g., candy, chips, token dollars), activities (e.g., free computer time, free
time to interact with peers), and privileges (e.g., extra recess time). Once an agreement was made on the 10 items, the researcher developed a worksheet with the items in a list form and had all the students in the classroom rank the items as most preferred (1) to least preferred (10).

Once all the students had finished the worksheet, the researcher collected them from the students and determined the hierarchy of the rewards by calculating the average ranking of each item by adding all the numbers an item received, dividing by the number of worksheets from that classroom and multiplying by 100. The meeting to discuss the items on the menu took about 10 min, and it took the students about 5 min to fill out the survey. Based on the assessment results, the following top 5 preferred items were selected: 5 min of extra recess, 15 min of free computer time, Cougar Cash (class wide token system), candy, and coloring sheet. Rewards were switched half way through the study due to potential satiation and availability of rewards. The rewards were switched to, Cougar cash, 5 min of extra recess, candy, chips and cookies.

**Teacher training.** Teacher training was conducted following baseline phase, after school. During training, the researcher used a script and a PowerPoint (PPT) to train the teachers (Appendices E and H). The PPT reviewed the purpose of the CBGG intervention, gave sample class expectations and rules, ways to teach the expectations and rules, an example of the game, and the components of the game (i.e., student- versus teacher-chosen criteria). After the instructions, the researcher demonstrated how to implement each step of the intervention within each component; the demonstration used the same script that was given to the teachers for their use during the intervention phase if they chose to use it.

Following the training, the researcher and teachers developed positively-stated classroom expectations and rules, discussed how the teachers could teach the rules, determine the different criteria to earn the reward, and how the reward will be distributed. The teachers were given the
fidelity checklist that was used during the study. Following the demonstration, the teachers were given the choice to role-play playing game if they wished. Neither teacher wanted to conduct the role-play. The teachers could keep the script and the fidelity check list as references for themselves at any point when playing the game. The researcher provided teachers with two containers, one for the criteria and the other for the rewards. Strips of paper that identify all choices for each box were placed in the box to ensure the choices were random whenever the CBGG was played. Training was considered complete when the teacher reported to be comfortable enough with the procedures to implement the game and took from 50-60 min.

**Selection of reinforcement criteria.** Immediately after the training, each teacher and the researcher reviewed the data collected during the baseline phase, created goals, and came to an agreement on the desired levels of reduction in disruptive behavior and increase in academic engagement. The teacher and researcher discussed the target students’ mean levels of disruptive behavior and academic engagement as well as overall entire class performance to estimate how well they represent whole classroom behavior. Based on the target students’ baseline mean levels and the class performance, the target rule-following behavior, particularly, academic engagement behavior and a range of criterion points were developed. The teachers were informed of how a variable interval of 5 min (VI-5 min) schedule of reinforcement would work in relation to how long the teachers wish to implement the CBGG as that would affect the maximum points teams could earn. For example, if the teachers wanted to implement the game during a 40-min academic period and use all 40 min as the basis of the intervals, then the maximum number of points each team could receive for engagement in rule-following behaviors during the 40 min class was 8 (40/5). The initial criterion percentages chosen by both teachers were 70%, 75%, 80%, 85%, and 90%; however, it was observed early that teams in both classrooms were not
winning with the selected percentages. To have teams win more often and meet the contingency the percentages were lowered. The lower percentages introduced were 60%, 65%, 70%, 75% and 80%. The percentages selected were the criteria for both teacher- and student-chosen criteria phases. At the beginning student chosen days, all student of the classroom had an opportunity to choose three out of the aforementioned five criteria and those three were the criteria used during student chosen days.

**Student training.** Prior to the first intervention session, the researcher and teacher introduced the CBGG interventions to students using a PPT presentation (Appendix I). This presentation included a review of the class’s expectations and rules and examples of rule-following behavior, particularly, academic engagement behavior. The game and the group contingency behind the CBGG were reviewed in age-appropriate language and the rewards were introduced. The presentation stressed the importance of encouraging academic engagement among peers and following class rules to earn the reward each day. Students were given the opportunity to ask questions throughout the presentation. Student training took approximately 15 min.

**Intervention.** During this phase, the PI provided containers to each teacher to use during each session. Boxes had the following labels: “Criteria” and “Rewards.” Inside each box were pieces of paper that corresponded with the labels on the box. For example, the “Rewards” container included the five highly preferred items from the class preference assessment and the “Criteria” container included paper with the percentages being used. Teachers were also provided with a script that they could use throughout the intervention phase to assist them with the game. Teachers were instructed to select one paper from each container. During the student chosen phase, the teacher was told to allow the students of the classroom to select three of the
five predetermined criteria and place the three back into the criteria container and randomly select from those three at the end of the game.

The teacher was provided a data sheet with team numbers on top and blank boxes where the teacher would mark a “+” if the team was on task or “-“ if any team member was off task. The number of teams ranged from three to six, depending on the number of students present each day. Teams were based on classroom arrangement by creating teams with students naturally sitting next to each other to simplify the room scans for the teacher. Students were moved to fill teams up if the teacher requested but teams never exceeded five members to make room scans easier. The chart was referred to at the end of the game to determine which team(s) (if any) received the reward based on the corresponding selection of criteria. The teacher was also provided with a MotivAider that was set to go off on a variable ratio interval schedule averaging every 5 min (VI-5-min) as indicated by the MotivAider PRO mobile application or device during the instructional period. The MotivAider was used to inform the teacher to perform a room scan and to provide points to each team that earned it. During the first half of the intervention phase the top five items were chosen as rewards, but items were switched out part way through due to student satiation or lack of interests the original rewards chosen. Any rewards that were not readily available to the teacher by the school was provided by the researcher.

*CBGG with teacher-chosen criteria.* During this condition, the criteria to earn the reinforcer were chosen by the teacher. When teacher started the target instructional period, all needed materials for the game were ready and then the teacher read a script to the students on how each team had the opportunity to earn a reward if all the members in the team stayed engaged and followed the class rules. The teacher reviewed the classroom rules with the students, explained what each rule looked like and how it would relate to the activity the class
would be participating for that day. After explaining the rules, the teacher asked students to show an example of the rules and asked other students how the model student was demonstrating the rule. The teacher provided feedback and praised to those students who demonstrated and to those who explained the example to the other students. After the explanation, the teacher continued with their instructional period as usual. When the MotivAider vibrated, the teacher scanned the room and rewarded points. The teacher only gave points to the teams who had all members following the rules and were on-tasks with the activity. In addition to providing points, the teachers provided verbal praise to teams and individual students who were following the rules and were on-task. Towards the end of the instructional period (roughly about 5 min lefts in the academic period), the teacher would announce that the game was over to the students. The teacher then chose one slip from the “Criteria” container. After it was selected, the teacher then referenced the chart to see which team(s) won. If a team won, the teacher then selected one slip from the “Rewards” container. The teacher then announced the reward and gave it to the winning team(s). When team(s) did not meet the criterion, the teacher gave the students verbal praise for their hard work during the game and reminded them that there was always the next day to earn a reward.

**CBGG with student-chosen criteria.** This condition was similar to the teacher-chosen criteria condition, except the criteria to earn a reward were based on what students of the classroom chose to be the range of possible criteria. During this condition, the students were given a range of different criteria, the same as those deemed by the teacher in the teacher-chosen criteria condition, and were instructed to select three of the five choices. The chosen criteria were placed in the “Criteria” container and a randomly-selected student chose one of the three criteria at the end of the game. How the teachers allowed the students to select the criterion options were
different. Mr. Green stated each percentage verbally to all students of the classroom and instructed the students to raise their hands to vote for the percentages they wanted to be the criterion for that day. Each student could vote up to three times. Mrs. Pink pulled sticks from a cup that had each student’s names on the sticks. She pulled one stick out, and the name on the stick could choose one criterion that would be used that day and did this until three percentages were chosen and placed in the criteria box.

From here, the game continued the same way as during the teacher-chosen criteria condition. The teacher ensured that all materials were ready, read rules aloud, and reviewed examples of rule-following behaviors with students. When the MotivAider vibrated, the teacher scanned the room, awarded points to teams in which all members were engaging in activities and provided praise to teams and individual students following the rules and being on-task. When about 5 min were left in the instructional period the teacher announced the game was over, had a student select one slip from the “Criteria” container with the student selected percentages in the box, and referred to the slip to determine if any team(s) earned a reward. If a team won, one slip was selected from the “Rewards” container, and the reward was given to the winning team(s). For the team(s) that did not win, the teacher gave verbal praise for participating in the game and informed them that they could try and earn the reward the next time.
Results

Disruptive Behavior

Figure 1 displays data on disruptive behavior across four participating students during the targeted instructional period. The data indicated that the CBGG intervention was effective in decreasing disruptive behavior for all four students although the data demonstrated limited experimental control. Both teacher-chosen criteria and student-chosen criteria conditions resulted in a reduction in disruptive behavior. Change in behavior was only observed after the intervention was implemented across the students. However, the data indicated that the teacher-chosen criterion condition resulted in a lower level in disruptive behavior than the student-chosen criteria condition across students.

The first panel of Figure 1 presents data on Tim. In baseline, disruptive behavior occurred during a mean of 64.5% of intervals (range: 45-84%) and showed a steep increasing trend. When the CBGG was implemented, both conditions resulted in a drop-in level, with a steeper decreasing trend in the teacher chosen condition than in the student-chosen condition. Disruptive behavior occurred during a mean of 14.8% of intervals (range: 2-36%) in the teacher-chosen criteria condition and during a mean of 23.3% of intervals (range: 6-57%) in the student-chosen condition.

The second panel of Figure 1 presents data on Damian. In baseline, disruptive behavior occurred during a mean of 76.5% of intervals (range: 56-94%). Initially, disruptive behavior showed a decreasing trend, but increased to a high rate (94%) at the end of baseline. As with other students, implementation of the CBGG in both conditions resulted in a reduction in
disruptive behavior, demonstrating a lower level in the teacher-chosen condition than in the student-chosen condition. As with Dick, Damian’s first data point displayed high rate of disruptive behavior in the teacher chosen condition, but his behavior decreased and remained stable for the remaining sessions. His disruptive behavior occurred during a mean of 26.2% of intervals (range: 10-84%) in the teacher-chosen condition and during a mean of 32.4% of intervals (range: 10-55%) in the student-chosen condition.

The third panel of Figure 1 presents data on Jason. In baseline, disruptive behavior occurred during a mean of 55.1% of intervals (range: 46-69%) and showed an increasing trend. When the CBGG was implemented, both conditions (teacher- and student-chosen) resulted in immediate drop-in levels. However, a steeper decreasing trend was demonstrated during the first four intervention sessions in the teacher-chosen criteria condition compared to the student-chosen condition. Disruptive behavior occurred during a mean of 13.7% of intervals (range: 3-34%) in the teacher-chosen condition and a mean of 34.6% of intervals (range: 15-42%) in the student chosen condition.

The fourth panel of Figure 1 presents data on Dick. In baseline, his disruptive behavior occurred during a mean of 46.8% of intervals (range: 36-64%), demonstrating a gradual increasing trend. When the CBGG was implemented, both conditions resulted in a reduction in disruptive behavior, demonstrating decreasing trends, but the teacher-chosen condition resulted in a faster decreasing trend and lower levels of disruptive behavior compared to the student-chosen criteria condition. Initially, the teacher-chosen criteria condition resulted in a drastic rate change in disruptive behavior (61%), and the behavior remained at a low steady level during the remaining sessions. Disruptive behavior occurred a mean of 19.6% of the intervals (range: 6-
61%) during the teacher-chosen criteria condition and a mean of 25.1% of the intervals (range: 0-61-0%) during the student-chosen criteria condition.

Additional data analyses indicated that the data demonstrated moderate to large effect size for both behaviors in both conditions for all students except Jason. For Dick, both the teacher-chosen condition and student-chosen condition had 85.7% of non-overlapping data (PND) with baseline for both disruptive behavior and academic engagement. For Jason, both conditions had a PND of 100% for disruptive behavior. For academic engagement, the teacher-chosen condition resulted in a PND of 85.7%, whereas the student-chosen condition resulted in a PND of 14.3%. Even though the PND was low, his level of academic engagement was stable and increasing. For Tim, the teacher-chosen condition had no overlapping data with baseline (a PND of 100%) whereas the student-chosen condition yielded a PND of 88% for disruptive behavior. For academic engagement, the teacher-chosen condition had 87.5% PND and the student-chosen condition resulted in a 66.7% PND. For Damian, the teacher-chosen condition resulted in a 90% PND compared to disruptive behavior during baseline. Whereas, the student-chosen condition yielded no overlapping data (a PND of 100%) for academic engagement, a 70% PND was observed during the teacher-chosen condition and a 50% PND during the student-chosen condition.
Figure 1. Percentage of intervals in which disruptive behavior occurred across conditions and participants.
Academic Engagement

Figure 2 displays data on academic engagement across participating students. As shown in the figure, both conditions of the CBGG resulted in increased academic engagement for all four students. Academic engagement increased upon implementation of the intervention and remained relatively stable over the course of the intervention for Dick, Jason, and Tim except for one or two sessions. Damian’s data were variable, but overall his level of academic engagement was higher during intervention than during baseline. As with disruptive behavior, the teacher-chosen condition resulted in better outcomes for academic engagement than student-chosen condition. Across all students, the levels of academic engagement were higher in the teacher-chosen condition. As with disruption, change in behavior is only witnessed after the intervention is introduced across the students.

The first panel of Figure 2 displays the data on academic engagement for Tim. In baseline, his academic engagement occurred during a mean of 60.5% of intervals (range: 42-88%) in baseline and showed a decreasing trend. Initially, Tim showed a higher level of academic engagement compared to other students, but started to decrease after several sessions and remained stable. When the CBGG was implemented both conditions resulted in increased levels in academic engagement with the teacher-chosen condition having a slightly steeper increasing trend than the student-chosen condition. Academic engagement occurred during a mean of 92.6% of intervals (range: 70-99%) in the teacher-chosen criteria condition and during a mean of 86.3% of intervals (range: 57-95%) in the student-chosen criteria condition.

The second panel of Figure 2 displays the data on academic engagement for Damian. In baseline, academic engagement occurred during a mean of 40.3% of intervals (range: 3-78%). Unexpectedly, his academic engagement increased to 78% during session 5 due to the teacher
bring an iPad into the lesson plan and this kept the student more engaged during the lesson. When the CBGG was implemented both conditions resulted in an increased level in academic engagement. The teacher chosen condition displayed a decreasing trend in the middle of intervention phase whereas the student chosen condition displayed an increasing trend. However, toward the end of the intervention, in the teacher-chosen condition, his academic engagement increased to the earlier levels, and the mean level was higher. Academic engagement occurred a mean of 84.7% of intervals (range: 42-98%) in the teacher-chosen criteria condition and a mean of 81.1% of intervals (range: 62-97%) in the student-chosen criteria condition.

The third panel of Figure 2 displays data on academic engagement for Jason. In baseline, his academic engagement occurred during a mean of 68.3% of intervals (range: 51-89%). Initially, the behavior showed an increasing trend, but started to decrease after several sessions. When the CBGG was implemented both conditions resulted in increased levels of academic engagement, showing stable patterns in both conditions exception for one session in the student-chosen condition. Academic engagement occurred during a mean of 94.9% of intervals (range: 86-100%) in the teacher-chosen criteria condition and during a mean of 81.4% of intervals (range: 63-90%) in the student-chosen criteria condition.

The fourth panel of Figure 2 displays data on academic engagement for Dick. In baseline, his academic engagement occurred during a mean of 61.5% of intervals (range: 52-73%) and showed a decreasing trend. When the CBGG was implemented, both conditions resulted in an increased level of academic engagement, with a slightly steeper increasing trend in the teacher-chosen condition than in the student-chosen condition. Academic engagement occurred a mean of 86.1% of intervals (range: 61-93%) in the teacher-chosen criteria condition and a mean of 84.1% of intervals (range: 66-98%) in the student-chosen criteria condition.
Figure 2. Percentage of intervals in which academic engagement occurred across conditions and participants.
Social Validity

Teachers. The IRP-15 completed by two teachers indicated that the teachers rated the CBGG intervention as highly acceptable and satisfactory. Scores to each question from both teachers are presented in Table 1. Mr. Green’s ratings averaged 5.4 out of 6 across all questions and Mrs. Pink’s ratings averaged 5.8 out of 6. Except for one item, which was rated as a 4, all items were rated as 6.

Students. The student social validity questionnaire results are presented in Tables 2 and 3. Table 2 presents the students’ average ratings across questions from Mr. Green’s class. Ratings indicated that students from Mr. Green’s class enjoyed playing the game more when they could choose the amounts of point needed to win the game. The rewards won, being able to continue to play the game, and playing the game in other classes received on average neutral scores of 3 out of 5. Overall the students strongly or moderately agreed that they liked playing both conditions of the game (Teacher-chosen and Student-chosen). The average rating on how the students liked the game for the teacher- and student-chosen conditions were 4.2 and 4.4, respectively.

Table 3 presents the students average score across each question from Mrs. Pink’s class. Students ranking for each condition were high. Even though the students agreed that they liked playing the game and wanted to keep playing it, regardless of the condition, they indicated they would not want to play the game in other classrooms. Overall, the students strongly or moderately agreed that they liked playing both conditions of the game (Teacher-chosen and Student-chosen). The average score for how the students liked the game for the teacher- and student-chosen conditions were 4.6 and 4.2, respectively.
The comments provided by the students to open-ended questions indicated that the students enjoyed playing and winning the game. Students reported they enjoyed the prizes available, but requested that a wider variety of prizes be available. Students also reported that they did feel pressure from peers, but did not specify whether it was positive or negative pressure. Lastly, students reported although they liked winning, they did not like losing.
Table 1. Teacher Social Validity Survey (Modified IRP-15) Results.

<table>
<thead>
<tr>
<th></th>
<th>Mr. Green</th>
<th>Mrs. Pink</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>This was an acceptable intervention for the problem behavior engaged in by the targeted students in my class.</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Most teachers would find this intervention appropriate for behavior problems.</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>This intervention proved effective in changing the overall problem behavior for targeted students in my class.</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>I would suggest use of this intervention to other teachers.</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>The problem behavior was severe enough to warrant use of this intervention.</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Most teachers would find this intervention suitable for the behavior problems in their class.</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>I would be willing to use this intervention with other students.</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>This intervention did NOT result in negative side effects for children in my class.</td>
<td>6</td>
</tr>
<tr>
<td>9.</td>
<td>This intervention would be appropriate for a variety of children and classrooms.</td>
<td>6</td>
</tr>
<tr>
<td>10.</td>
<td>The intervention was consistent with those I have used in classroom settings.</td>
<td>6</td>
</tr>
<tr>
<td>11.</td>
<td>This intervention was a fair way to handle the problem behavior in my classroom.</td>
<td>6</td>
</tr>
<tr>
<td>12.</td>
<td>This intervention was reasonable for the behavior problems in my classroom.</td>
<td>6</td>
</tr>
<tr>
<td>13.</td>
<td>I liked the procedures used in this intervention.</td>
<td>5</td>
</tr>
<tr>
<td>14.</td>
<td>This intervention was a good way to handle the problem behaviors in my classroom</td>
<td>5</td>
</tr>
<tr>
<td>15.</td>
<td>Overall, this intervention was beneficial for the students in my classroom.</td>
<td>6</td>
</tr>
<tr>
<td>Mean</td>
<td>5.4</td>
<td>5.8</td>
</tr>
</tbody>
</table>
Table 2. Mean Ratings of Student Social Validity Questionnaire for Class 1 (Mr. Green)

<table>
<thead>
<tr>
<th></th>
<th>Teacher-Chosen Condition</th>
<th>Student-Chosen Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I liked playing the Caught Being Good Game.</td>
<td>3.9</td>
</tr>
<tr>
<td>2.</td>
<td>I want to keep playing the Caught Being Good Game.</td>
<td>3.8</td>
</tr>
<tr>
<td>3.</td>
<td>I want to play the Caught Being Good Game in other classes.</td>
<td>3.3</td>
</tr>
<tr>
<td>4.</td>
<td>I like the rewards that we could earn.</td>
<td>3.9</td>
</tr>
<tr>
<td>5.</td>
<td>I like when the teacher/students got to choose the amount of points needed to earn the reward.</td>
<td>2.0</td>
</tr>
<tr>
<td>6.</td>
<td>What rating would you give your experience with the Caught Being Good Game?</td>
<td>4.2</td>
</tr>
<tr>
<td>Overall Mean</td>
<td>3.5</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Table 3. Mean Ratings of Student Social Validity Questionnaire for Class 2 (Mrs. Pink)

<table>
<thead>
<tr>
<th></th>
<th>Teacher-Chosen Condition</th>
<th>Student-Chosen Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I liked playing the Caught Being Good Game.</td>
<td>4.5</td>
<td>3.8</td>
</tr>
<tr>
<td>2. I want to keep playing the Caught Being Good Game</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td>3. I want to play the Caught Being Good Game in other classes.</td>
<td>2.9</td>
<td>2.5</td>
</tr>
<tr>
<td>4. I like the rewards that we could earn.</td>
<td>3.8</td>
<td>3.9</td>
</tr>
<tr>
<td>5. I like when the teacher/students got to choose the amount of points needed to earn the reward.</td>
<td>3.6</td>
<td>4.1</td>
</tr>
<tr>
<td>6. What rating would you give your experience with the Caught Being Good Game?</td>
<td>4.6</td>
<td>4.2</td>
</tr>
<tr>
<td>Overall Mean</td>
<td>3.9</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Discussion

This study examined the impact of the CBGG on disruptive behavior and academic engagement and whether teacher- or student-chosen criteria to earn the mystery motivator would have a differed impact on the behaviors, with four students within two classrooms in an urban elementary setting. Teachers implemented the CBGG with high levels of fidelity throughout the intervention sessions across conditions without any additional training. The results of the direct observations indicated that all participants’ disruptive behavior decreased and academic engagement increased when the intervention was implemented, regardless of the conditions although the data demonstrated limited experimental control. However, the teacher-chosen criteria condition resulted in lower levels of disruptive behavior and higher levels of academic engagement across all participants than the student-chosen criteria condition. The results demonstrated moderate to large effect size for both behaviors in both conditions for four students. The social validity assessments indicated both groups of students and teachers were highly satisfied with the intervention.

The result of this study support previous results in that group contingencies are effective in decreasing disruptive behavior and increasing academic engagement (Christ & Christ, 2006; Ennis et al., 2016; Kelshaw-Levering et al., 2000; Ling & Barnett, 2013; Wright & McCurdy, 2012). The study also suggests that a positive variation of the often-used GBG could result in change in classroom behavior. Wright and McCurdy (2012) used a positive variation of the GBG called the CBGG where teachers gave points to teams based on following classroom rules instead of breaking them. The authors compared both versions and analyzed the two games’
effects on student disruptive behavior and on-task behavior in a classroom. They found that both had similar effects on disruptive behavior and on-task behavior. However, the authors noted that the CBGG was rather new, and more research would still be needed as the GBG had years of research. This currently study contributed to the literature in that it demonstrated that the CBGG was effective in decreasing disruptive behavior and increasing academic engagement with four students.

As indicated by the high social validity of the intervention, the two classroom teachers and the students in the current study valued playing the game. Additionally, minimal training and no follow-up training were needed for the teachers to efficiently and effectively implement the intervention and make changes to better fit the students. Without difficulty, they changed the contingency criteria for students to win the rewards at first and gradually increased to the different levels of criteria as the teams improved their scores over the course of the intervention.

Even though data were only taken on two students per classroom, anecdotally, it was observed that the rest of the class was impacted by the game. This was evidenced by the teacher-collected data during the game when rewarding points. There were days when teams earned 100% of the points possible during the game even though no target student was part of their group. Additionally, teams would go several days in a row earning the reward and continued to have high percentages of points earned.

One factor that might have impacted student behavior during intervention in this study was the different team dynamics that were present when the target students were with different people. Both teachers would switch up seating arrangements throughout the study. The different team members would put different types of pressure on each other to be on-task so they could earn points and win. Some pressure was positive with individuals saying things such as “let’s
work hard to win” or “we can do this.” At times, some students would use negative peer pressure and blame certain students for their teams’ reason for losing the game on that day. Negative peer pressure was minimized by determining at the end of the instructional time who would get access to the reward if a team won. However, it was observed and reported that some pressure among students occurred. If the teacher had observed a student being rude or mean to others during times when the teacher was not doing a room scan for the game, the student could have lost access to the reward even if the team won, but this action never had to be taken during the study.

The process by which the reinforcement criteria were selected during the teacher-chosen and student-chosen conditions might have influenced the outcome, i.e., higher levels of disruptive behavior and lower levels of academic engagement during student-chosen criteria condition than during teacher-chosen condition. During the teacher-chosen condition all five percentages were in the criteria box, meaning that each time the teacher chose a criterion there was the possibility of a higher percentage being selected. However, it was observed that about half of the time the students would select lower criteria to earn the reward. When students chose criteria, they were allowed to choose three of the five criteria, and it is possible that only lower level percentages (e.g., 60%, 65%, and 70%) could have been in the criteria box on the student-chosen days. Thus, it is possible that the students could be more disruptive during the game and still win based on whether they had a better chance of drawing a lower criterion than in the teacher-chosen condition, as all five percentages remained in the box when it was the teacher-chosen day.

Reviewing the classroom rules each day could have impacted student behavior. Before playing the game, the teachers would review the expectations and rules with the students, provide explanations of each, and have students model each one. In Ennis et al. (2016), the
participating teachers chose not to review the classroom expectations and rules when implementing the group contingency in their classrooms. The authors found that even though teachers did not review the expectations and rules daily, the authors still observed an increase in on-task behavior and a decrease in disruptive behavior across different types of group contingencies being implemented by the teachers.

**Limitations**

The findings from this study can be limited by the small sample size; only four students between two teachers from one grade participated in the study. The teacher and student survey results may not represent all those in an elementary school general education setting. Although the study employed a multiple-baseline design with an embedded alternating treatment design to establish experimental control, only two demonstrations of experimental control were established in demonstrating the functional relationship between the GBGG intervention and the targeted student behaviors. Tim and Damian were in the same classroom and so were Dick and Jason, making it hard to stagger across all four students. Despite being able to demonstrate experimental control for only the four students in sets of two, an immediate reduction in disruptive behavior and an increase in academic engagement was only observed after the intervention was implemented.

Another limitation could have been the data collection method. Measuring academic engagement was sometimes difficult. Overall, IOA was high; however, there were sessions with moderately high IOA. To reduce reactivity and classroom distractions, data collectors had to sit towards the back of the room, making it difficult to see the target students at times. Disruptive behavior, such as talking to others, was harder to hear to judge whether the student was talking about topics related to the task. It was easier to determine when the teacher made a comment
contingent on student behavior that no talking should be allowed and all questions about the assignment should be taking to them. However, when the teacher did not make those comments it was harder to determine whether certain behaviors exhibited by the student were to be considered distracting or not. Additionally, academic engagement was difficult to measure when students were transitioning from one activity to another and when the teacher did not give clear instructions on what was expected and what was not allowed during transitions and when working on certain activities. Also, the faces of the students were not always visible making it difficult to see if the student was looking at the speaker, looking simply in the general direction, or if what they were writing on a paper was related to the topic.

Another limitation was that no follow-up or generalization data were collected. Follow-up data were not collected due to time constants and the school year coming to an end. Future research using a larger sample size of participants and long-term follow-up assessment would increase the confidence in the findings of the current study. A few studies have reported that during follow up sessions behaviors such as disruptive behavior and on-task could be maintained over time (Ennis et al., 2016; Denune et al., 2015). Little is known on generalization effect of group contingencies on classroom or student behavior. Ennis et al. (2016) conducted generalization probes across three classrooms and observed that the group contingency also had an effect on non-targeted periods; however, more research is needed to determine the generalization effects of the group contingencies.

An additional limitation that might have affected data was a change in time of observation part way through the study. During the beginning of the study, the target academic period was held in the morning but upon returning after a school break it was brought up that the school was asked to switch times when academic periods were being held. This switch forced the
observation from being in the morning to the afternoon before school was to be let out for the day. Despite this change, data were overall stable between the time switch and change in both disruptive behavior and academic behavior occurred only after the intervention occurred and remained mostly stable throughout the intervention.

**Implications for Practice**

One implication for practice in implementing the CBGG is that teachers may need to make modifications to increase the contextual fit of the intervention. In this study, the teachers chose to make slight modifications to the implementation procedures within their classroom. Teachers conducted the student-chosen criterion sessions differently to meet their needs. Mr. Green would verbally state the criterion percentages and ask the students to vote on each one with each student being allowed to vote three times. Mrs. Pink would pull names from a cup that had Popsicle sticks with each student’s name written on them. She would pull one stick out and that student would select one percentage, and this would be repeated until three percentages were selected.

An additional implication of practice is with how the teachers should monitor student behavior during implementation of the group contingencies. The teachers in the current study wore a device to remind themselves to conduct a room scan. The teachers used a clipboard with the data sheet on it, leading the researcher to question whether them picking the board up could have been a visual cue for the students to start engaging in the activity to earn the point during the scan. Wright and McCurdy (2012) discussed the same issue as they used an audible cue for the teacher, which the students could hear. In the current study, the teachers attempted to address the issue of cuing students to start engaging in the activity during the scan by using a tactile (vibration) cue instead of an audible cue and telling the students that if they were watching the
teachers to see when the clipboard was picked up, they would be not on-task and were not rewarded the point. The students were also informed that just because the clipboard was being picked up does not always mean that points were being given at that time. Mrs. Pink reported that some students would only start working when she picked up the board. Thus, she started picking it up at random intervals independent of the device and pretend to write points out. Future researchers may want to evaluate data collection methods that are discrete to the students.

**Directions for Future Research**

As discussed above, additional research is necessary to further examine the impact of teacher-chosen and student-chosen contingency criteria in implementing the CBGG. Previous research (Ennis et al., 2016) showed differential outcomes for group contingencies when teacher-chosen contingencies were implemented. Future studies may incorporate an ABCAC withdrawal design to compare teacher-chosen versus student-chosen contingency criteria and demonstrate clear experimental control. Additional studies to determine the impact of teacher-chosen versus student-chosen criteria on student behavior should be conducted with more participants. Future researchers may also want to consider having different grades to see if the CBGG would be effective with younger or older students.

Another direction for future research is to examine the extent to which the CBGG would be effective in classrooms that are not implementing universal class-wide behavior supports. The school in this study had been implementing SWPBS, and the teachers were familiar with teaching school-wide expectations and rules, which might have affected the high levels of treatment integrity in both teachers. Future studies may include teachers who have no experience with implementing universal class-wide behavior supports and assess if the teacher still find the intervention easy to implement as in the current study.
Future studies may also incorporate a maintenance phase and assess generalization effects to examine whether implementing a group contingency has effects on student behavior across non-target periods. In addition to assess whether the intervention has effects across academic time periods it would be worth investigating the longevity of the effects of the intervention after it has been removed or the teacher no longer receives the type of supports they did as in the present study.
References


Appendices
Appendix A: Teacher Interview Form

Thank you for consenting to participate in the following study. We will go over a quick overview of the study and I will than you some questions. We can only discuss students whose parents have returned a signed consent form for their child to participate in this study. Following the questions, I will go over more of my study. If you have any questions during this interview, please ask them whenever you feel like.

The purposes of this study are to examine the overall impact of the Caught Being Good Game (CBGG) on student behaviors and find whether teacher-chosen or student-chosen reinforcement criteria in using the CBGG would result in better outcomes for the selected students in a classroom setting. We will also be looking to see types of academic engagement, disruptive behavior, and academic engagement.

1. Does disruptive behavior concern you?
2. What are the disruptive behaviors?
3. How would you define/describe these behaviors?
4. When do these behaviors occur? How frequent do those behaviors occur? (Do they occur every day?)
5. Is there more than one student engaging in disruptive behaviors?
6. Can you provide more information about these students who engage in disruptive behavior?
7. How do you typically handle the disruptive behavior?
8. What does a typical classroom period look like? (Do you lecture most of the time?)
9. Does your class have a daily assignment or weekly quiz that you give?

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<th>Student</th>
<th>Instructional Activity</th>
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<th>Academic Engagement</th>
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Based on the answers you have given me; your classroom would be a good candidate for my study. What my study looks at is using group contingency of the CBGG to improve behavior of students in a classroom as a whole; however, data will only be collected on certain students.
All group contingencies are based on using rewards to manage the behavior of a group of students. Students learn to encourage each other, and how to monitor their behavior. To start the procedures, you’d make a brief statement to the class before conducting typical lessons. As the instructional activity goes on, a check mark will be placed by a team’s name when all members are on-tasks during the room scans. I will briefly describe the group contingency of the CBGG below. Also, I will go quickly over the difference between student and teacher preferred criteria for gaining rewards.

The Caught Being Good Game is a game developed for classroom teachers to help decrease disruptive behavior (i.e., out of seat, talking without permission) and increase appropriate classroom behavior. The CBGG splits students into teams, and the teams work together to earn a reward at the end of the class period. The teams must behave appropriately to earn a reward at the end of the class period. In this game, teams are trying to earn as many points as possible. The teacher will be given a device that will vibrate at a variable interval. Following the vibration, the teacher will immediately scan the classroom. Teams with each team member on-task when the device vibrates earn a point. During this game, should misbehavior occur, respond normally. Teams earn a reward daily if team point totals are above the Mystery Point Limit. The Mystery Point Limit is determined daily by you for one phase and by the students in another phase. Each team above the Mystery Point Limit will be allowed to gain access to a mystery reward.

During the teacher chosen criteria, you and I will look at the data and create a range of criteria percentages that the students will have to either meet or exceed to be able to gain access to the mystery reward. During the student chosen criteria, the students will be given the choice to select three criteria from about five to six different criteria that you provide. The ones you will provide for the students to choose will be the same criterions that you select for your criteria.

If you choose to continue to participate in this study, you will receive training on each of these procedures and will have a written guide to refer to throughout participation.

Do you have questions?

Have you used group contingencies in the classroom?

Thank you for choosing to participate.
Appendix B: Data Sheet  
Date: ___/___/___ Start time: _______ End time: _______ Observer:_________________________
Class:_____________________ Academic Period: _________________
Clearly mark (+ or -) if the child was disruptive and/or academically engaged at any point during the 15-s interval.

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Disruptive Behavior: # of int. = _____ (____%)
Engagement: # of int. = _____ (____%)
### Appendix C. Teacher Implementation Fidelity Checklist

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<th>Classroom/Teacher: _______ Date: ______________ Recorder: __________</th>
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#### Before The Game Starts
1) Have all materials ready to start the game
2) Announce to class that the game will be starting (Not required for a score of 1)
3) Goes over expectations and rules

#### Letting the Students Chose *(Student Criteria Phase only)*
1) Gives the students a range of at least five criteria to choose
2) Instructs class to select three of the criteria giving
3) Places the selected criteria in the Student Criteria Box

#### Keeps track of appropriate behaviors
1) Scans classroom every interval following the cue
2) Mark points on score sheet for teams who are on-task

#### Teacher giving points
1) Marks points for teams where all students are on-task (may miss one or a few)
2) Marks for on-task behaviors consistent with definitions
3) Givers verbal praise when giving team points (may miss one or a few)

#### Teacher indicates end of implementation period
1) Duration (20-60 min)

#### Select random components
1) Chose one paper from criteria box based corresponding day (Teacher or Student)

#### Determine if criteria for reward is met
1) Accurately count points for each team and calculate the percentage of points earned and reward based on whether the criteria were met

#### Chose the Reward (Teacher)
1) Chooses the Mystery Motivator based on whether one or more teams met the criteria

#### Give Access to Reward
1) To all students on the team if their team met the criteria
2) Praise aligned with school-wide expectations given.

#### Hold Access to Reward
1) To all teams who did not meet the criteria
2) Encourage students to try again

#### Fidelity Score
*(Total Yes’s/Total Yes’s + No’s) X100%=

---

56
Appendix D: Mystery Motivator Set

Please look at the suggestions below and cross out any items that you don’t feel are suitable for group reinforcement in the class. Please write down in any items that aren’t in this list that you may like to include. Mystery Motivators will be provided to one or more groups or no one depending on whether criteria were met. The completed list will be giving to the students in a ranking form to find which ones the students will find the most rewarding to earn. If you wish you can create a list of 10 items on your own that you feel are acceptable as potential rewards for your class.

- School based token economy
- Peel stickers
- Homework pass
- A few minutes of interaction time with peers
- Extra time for
  - Recess
  - Computer
  - Other: __________________________________________________________
- Eat lunch in different location
- Reading in different locations
- Music/Dance time
- Hear music during independent seat work
- Movie in class
- Classroom game
  - Educational games: _____________________________________________
  - Board games
  - Other: _________________________________________________________
- Show (perform a favorite activity for other students)
- School supplies
  - Mini staplers, pencils, markers, etc.
  - Other: _________________________________________________________
- Toys
  - Stuffed animal, ball, music toy, etc.
  - Other: _________________________________________________________
- Edibles
  - Candy (various)
  - Potato Chips
  - Other: _________________________________________________________
- Other
  - ______________________________________________________________
  - ______________________________________________________________
### Appendix E. Caught Being Good Game Information Chart

<table>
<thead>
<tr>
<th>When to Do Stuff</th>
<th>Steps</th>
<th>Script</th>
</tr>
</thead>
</table>
| **Do this at the Beginning of the Game**<br>Teacher Chosen Criteria day only | Read Script (can say different ways) | Today we can work for a reward. Remember points are given to teams only if all members are following classroom rules. To earn the reward, you have to obtain at least a selected percentage of available points during the game. Today I will be choosing the criteria to earn the reward. We will not know what the percentage is until the end of the game, so make sure to stay on tasks the whole game period to earn as many points as possible as a team.  
Remember  
Some example of not following rules are:  
__________________________________  
(throwing things, interrupting me…)  
Some examples of classroom rules you need to follow are:  
__________________________________  
(eyes on me, following along with me…)  
Alright, let’s start the game and see who can earn the reward at the end. |
| **Do this Before the Game**<br>Student Chosen Criteria day only | Read Script (can say different ways) | Today we can work for a reward. Remember points are given to teams only if all members are following classroom rules. To earn the reward, you have to obtain at least a selected percentage of available points during the game. Today, you get to choose the criteria to earn the reward. From these five percentages __________________ which three as a class do you want to be the potential criteria for today?  
Remember  
Some example of not following rules are:  
__________________________________  
(throwing things, interrupting me…)  
Some examples of classroom rules you need to follow are:  
__________________________________  
(eyes on me, following along with me…)  
Alright, let’s start the game and see who can earn the reward at the end. |
(After three have been selected, place them in the student criteria box and select only one at the end of the game period.)

<table>
<thead>
<tr>
<th>Do this Throughout the game</th>
<th>Mark +'s or √'s for earning points And –'s for not earning points</th>
<th>Put a mark (+’s or √’s) on your clipboard by each of the team’s name to only those teams were all the members of the team are following classroom rules. Only give points when the device vibrates cueing to scan the room. If a team did not earn the point during the scan than mark a – in the corresponding interval.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do this at the End of the Game</td>
<td>Teacher selects criteria/ Choose Randomized Elements</td>
<td>Teacher chooses random components out of the boxes- Either from Teacher Criteria or Student Criteria (Depending on day) and Rewards</td>
</tr>
<tr>
<td>Compare number of +'s or √’s to criteria</td>
<td>Compare the number of each team’s points to the percentage chosen for that day</td>
<td>Give teams that have earned the reward. <em>Also</em>-Give praise and mention expectations and rules if they earned it. Tell them to try again next time if they didn’t earn it</td>
</tr>
</tbody>
</table>
Appendix F. Social Validity Checklist: Modified Intervention Rating Profile-15 (IRP 15)

Adapted from the IRP-15 Copyright, 1982. Brian K. Martens & Joseph C. Witt

Please circle the number that best describes your agreement or disagreement with each statement using the scale below.

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

1. This was an acceptable intervention for the problem behavior engaged in by targeted students in my class.
   1   2   3   4   5   6

2. Most teachers would find this intervention appropriate for behavior problems in addition to those described.
   1   2   3   4   5   6

3. This intervention proved effective in changing the overall problem behavior for targeted students in my class.
   1   2   3   4   5   6

4. I would suggest the use of this intervention to other teachers.
   1   2   3   4   5   6

5. The problem behavior was severe enough to warrant use of this intervention.
   1   2   3   4   5   6

6. Most teachers would find this intervention suitable for the behavior problems in their class.
   1   2   3   4   5   6

7. I would be willing to use this intervention in the classroom setting with other students.
   1   2   3   4   5   6

8. This intervention did not result in negative side effects for children in my class.
   1   2   3   4   5   6

9. This intervention would be appropriate for a variety of children and classrooms.
   1   2   3   4   5   6

10. This intervention was consistent with those I have used in classroom settings.
    1   2   3   4   5   6

11. This intervention was a fair way to handle the problem behavior in my classroom.
    1   2   3   4   5   6
12. This intervention was reasonable for the behavior problems in my classroom.

1 2 3 4 5 6

13. I liked the procedures used in this intervention.

1 2 3 4 5 6

14. This intervention was a good way to handle the problem behaviors in my classroom.

1 2 3 4 5 6

15. Overall, this intervention was beneficial for the students in my classroom.

1 2 3 4 5 6
Appendix G: Student Social Validity Questionnaire

Teacher Criteria Phase Version

1. I liked playing the Caught Being Good Game.
   1 Strongly disagree  2 Disagree  3 Neutral  4 Agree  5 Strongly agree

2. I want to keep playing the Caught Being Good Game.
   1 Strongly disagree  2 Disagree  3 Neutral  4 Agree  5 Strongly agree

3. I want to play the Caught Being Good Game in other classes.
   1 Strongly disagree  2 Disagree  3 Neutral  4 Agree  5 Strongly agree

4. I like the rewards that we could earn.
   1 Strongly disagree  2 Disagree  3 Neutral  4 Agree  5 Strongly agree

5. I like when the teacher got to choose the amount of points needed to earn the reward.
   1 Strongly disagree  2 Disagree  3 Neutral  4 Agree  5 Strongly agree

6. What rating would you give your experience with the Caught Being Good Game?
   5 I loved using the Caught Being Good Game  4 I liked using the Caught Being Good Game  3 I didn’t care about using the Caught Being Good Game  2 I did not like using the Caught Being Good Game  1 I hated using the Caught Being Good Game

7. What did you like and didn’t like about the Caught Being Good Game?

8. Did you feel any pressure from classmates when playing the game?

9. What changes of the game would you suggest?
1. I liked playing the Caught Being Good Game.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

2. I want to keep playing The Caught Being Good Game.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

3. I want to play The Caught Being Good Game in other classes.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

4. I like the rewards that we could earn.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

5. I like when the students got to choose the amount of points needed to earn the reward.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

6. What rating would you give your experience with the Caught Being Good Game?

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I loved using the Caught Being Good Game</td>
<td>I liked using the Caught Being Good Game</td>
<td>I didn’t care about using the Caught Being Good Game</td>
<td>I did not like using the Caught Being Good Game</td>
<td>I hated using the Caught Being Good Game</td>
</tr>
</tbody>
</table>

7. What did you like and didn’t like about the Caught Being Good Game?

8. Did you feel any pressure from classmates when playing the game?

9. What changes of the game would you suggest?
Appendix H. Teacher PowerPoint Presentation Outline

- Caught Being Good Game
  - Researcher Introduction
- What is the Caught Being Good Game?
  - Quick overview of the game
- How do your students earn points?
  - Go over School-wide expectation and make Classroom-Specific Rules (if needed)
- Example of the Game
  - Remember Points are giving if everyone in the team behaves!
  - When one team member is breaking a rule no one in the team gets a point.
  - In the end, the teacher chooses a number that will be the rule for seeing who earns the reward.
- Model of the game
  - Team 1
    - Batman, Spiderman and Ironman
  - Team 2
    - Superman, Captain America, and Flash
  - Team 3
    - Green Arrow, Hulk and Wolverine
  - At the end of the game
    - Team 1 earned 4 points
    - Team 2 earned 2 points
    - Team 3 earned 3 points
  - Which team(s) get the reward?
  - What is the reward?
- Questions?
- Role Play
  - Brief rehearsal of game implementation (If applicable)
  - Do so till you feel comfortable
    - Do not have to if you do not want to
      - Mention fidelity checklist and that role plays will be done if falls below 80% at any time for any reason.
- Preference Assessment and Criteria selection
Appendix I. Student PowerPoint Presentation Outline

- **Caught Being Good Game**
  - Researcher and Teacher Introduction
- **What is the Caught Being Good Game?**
  - Quick overview of the game
- **How do you earn points?**
  - School-wide expectation and the matching Classroom-Specific Rules
- **Example of the Game**
  - Remember Points are giving if everyone in the team behaves!
  - When one team member is breaking a rule no one in the team gets a point.
  - In the end, the teacher chooses a number that will be the rule for seeing who earns the reward.
- **Model of the game**
  - Team 1
    - Batman, Spiderman and Ironman
  - Team 2
    - Superman, Captain America, and Flash
  - Team 3
    - Green Arrow, Hulk and Wolverine
  - At the end of the game
    - Team 1 earned 4 points
    - Team 2 earned 2 points
    - Team 3 earned 3 points
  - Which team(s) get the reward?
  - What is the reward?
- **What should you do?**
  - Do your best!
  - Help each other
    - Points are based on your team’s behavior
  - No blaming friends
    - You can lose the chance to earn rewards if you bully your classmates
  - Don’t complain or whine
    - Teacher’s check and judgement won’t be changed
    - Try harder next time if you don’t earn it!
- Questions?
- Preference Assessment
Appendix I: USF IRB Approval

8/12/2016

Michael Marotta
ABA-Applied Behavior Analysis
13301 Bruce B. Downs Blvd
Tampa FL 33612

RE: Expedited Approval for Initial Review
IRB#: Pro00027239
Title: A Comparison of Teacher and Student Choice on Reinforcement Criteria in Using the Caught Being Good Game (CBGG) to Improve Classroom Behavior

Study Approval Period: 8/11/2016 to 8/11/2017

Dear Mr. Marotta:

On 8/11/2016, the Institutional Review Board (IRB) reviewed and APPROVED the above application and all documents contained within, including those outlined below.

Please note, no research activities can begin until the required letter of support from the school district is submitted and approved through the IRB amendment process.

Approved Item(s):
Protocol Document(s):
Study Protocol M.Marotta v2 8.2016.docx Consent/Assent

Document(s)*:
Parental_Permission_V1.docx.pdf
Student Written Assent M.Marotta v1.docx.pdf
Student Written Assent (Peer) M.Marotta v1.docx.pdf
Teacher_Consent_Form_v1.docx.pdf
Student Assent (Participant version) M.Marotta v1.docx
Student_Assesnt_Peer_v1.docx
*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s). Verbal assent scripts are not stamped.

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110. The research proposed in this study is categorized under the following expedited review category:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

This research involving children was approved under the minimal risk category 45 CFR 46.404: Research not involving greater than minimal risk.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board