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An examination of the caught being good game in a high school special education setting

By
Reeva Christine Morton

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
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in the Department of Counseling, Educational Psychology, and Foundations

Mississippi State, Mississippi
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An examination of the caught being good game in a high school special education setting

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The purpose of the current study is to examine the effects of the Caught Being Good Game (CBGG) on students’ classroom behaviors. The CBGG is a positive variation of the Good Behavior Game, which has been identified as an evidenced-based intervention designed for managing classroom behavior across students, behaviors, and settings. In the current study, the effectiveness of the CBGG intervention was examined within 2 high school special education classrooms located at two school districts in rural southeastern United States. Using a single subject design, the data were analyzed using visual inspection and calculation of non-overlapping data. Results revealed that the percentage of intervals in which on-task behavior occurred increased during the implementation of the CBGG game, while the students’ level of off-task behavior decreased. Acceptability of the intervention of both teachers was favorable. Given the results, the implications of this classroom management tool are positive. Future directions are discussed and the literature base regarding the CBGG was expanded.
DEDICATION

Over the many years that I have been in school, I have had the opportunity to meet and work with several groups of children. I would like to dedicate my dissertation to the children I have worked with, and was ultimately inspired by. Specifically, I would like to mention my favorite two children in the world, Kori and Deuce. You two alone taught me endless amounts of lessons and gave me much-needed laughs that I will always cherish. I can only hope that this project inspires you and children like you to achieve your incredible goals.
ACKNOWLEDGEMENTS

I decided early on in my high school career that I wanted to do clinical work because I enjoyed helping children. It was not until college that I realized psychology would give me the opportunity to pursue my passion in the school and clinical settings. This dissertation is a representation of my personal and professional journey and serves as a testament of Him favoring me with my family, professors, supervisors, friends, and colleagues. First and foremost, I have to give my thanks to God for restoring my faith throughout this process.

At a young age, my parents ensured that my siblings and I would have a valuable education to achieve our goals. I honestly feel like there are not enough words to describe how grateful I am for my power circle’s ability to make sure that I had “an opportunity”. I will always cherish the nights I would call home walking across the Starkville campus or the early morning conversations we had on a drive to a new city. Thank you for pretending to be awake or leaving a meeting to talk to me about my travelling adventures. Mommy, Daddy, Brian, and Shanta, I would not be the person that I am today without you.

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Momma Cheryl, I am truly blessed by your everlasting, unwavering, genuine, and passionate support in not only my undergraduate and graduate careers but in my personal life. I am forever in debt to your mentorship. I am so happy that with the completion of this degree I can finally sit in your office and answer that question you asked me almost 10 years ago. Because of your foundation, I can say “I have the tools to help people and I know how to do it”. I truly appreciate your ability to help me grow.

Fourth, I would like to give a special thanks to the friends that became my personally selected family. I am blessed to have had my amazing sisterhood, Annabelle, and Team throughout this journey. Sisterhood, your comedic personalities always grounded me and allowed me to step away from school when I needed it the most. Annabelle, I will always appreciate you giving your mother’s age old advice and allowing me to sing when I needed to have a concert. Team, your professionalism and positive attitude in the midst of adversity never ceased to amaze me so thank you for teaching me what it means to be resilient. And finally, I would like to thank my outstanding village that I do not have the pages to name. I am positive that you know who you are. Given the depth of my village and the impact each of you have had on me, I can now say, Momma I made it!
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CHAPTER I

INTRODUCTION

While there are several concerns that teachers, students, and parents may have within the school setting, one of the major concerns is the display of problem behavior and the implementation of appropriate interventions to decrease behavioral problems in an academic environment. The classroom should promote a positive learning environment to increase the student experience and it is imperative to intervene on students’ problem behaviors because research has demonstrated negative outcomes for students (Farmer & Farmer, 1999). Hastings and Bham (2003) also found that disruptive behavior can be associated with teacher burnout, which could lead to teachers performing below their potential. As a result, it is important for school personnel to be equipped with effective strategies to manage behavioral problems. In a meta-analysis, results found the most effective ways to prevent or lower problem behaviors (e.g., aggressive behavior) in an educational setting are universal programs where all students participate instead of targeting specific students (Stage & Quiroz, 1997). Therefore, large group universal programs are important for student success.

Schools have multiple ways to manage behavior problems. Schools typically use punishment procedures such as discipline referrals and suspensions to manage disruptive behavior (Dinkes, Kemp, & Baum, 2009). Although these procedures are continuing to be utilized, some schools have been moving towards the idea of implementing a system
of support using a framework that allows all students to have access to same intervention programs across an entire school district (Sugai & Horner, 2002). According to the reauthorization of the Individuals with Disabilities Education Act, positive behavior and supports are an identified approach to addressing behavior (Individuals with Disabilities Education Improvement Act of 2004, 2004). One example framework is the School-Wide Positive Behavior Support (SWPBS), which is described as a preventative multi-tiered approach to address problem behavior (Sugai & Horner, 2006). This framework’s effectiveness is especially dependent on administrative support that emphasizes the importance of defining behavioral expectations and reinforcing appropriate behavior consistently. Despite the potential for behavior interventions in this framework to make significant change in behavior, school systems are still failing to implement this system with integrity (Fixsen, Blase, Metz, & Van Dyke, 2013).

The SWPBS framework further suggests that unique interventions should be used at different levels of the multi-tiered system to provide teachers with effective classroom management strategies. Strategies such as child-directed, peer-mediated, and teacher-mediated strategies address different needs that teachers may face within the classroom. Child-directed strategies may be effective for individuals who may need to develop self-control over their behavior problems (Purdie, Hattie, & Carroll, 2002); whereas, peer-mediated strategies allow students to monitor other students, which in both teacher have more time to focus on instruction. Cooperative learning, a peer-mediated strategies intervention, suggests that students are interventionists and use a team approach to learn from one another instead of isolating specific individuals for intervention (Sharan, 1980). Based on the literature for peer-mediated interventions, these can be used for academic
and behavioral concerns (Davies & Witte, 2000). Teacher-mediated strategies such as positive reinforcement and contingency management are also effective in promoting change in the environment (Pelham, Wheeler, & Chronis, 1998). Positive reinforcement, such as praise, edibles, and activities, after behavior occurs ensures that students continue the display of a behavior using behavioral principles (Soares, Harrison, Vannest, & McClelland, 2016). Considering the responsibility of adults (i.e., general education and special education teachers) and the amount of time students spend in the classroom, teacher-mediated strategies would allow more opportunities for addressing problem behavior in the school setting.

One behavioral intervention that is associated with the SWPBS and considered a teacher-mediated strategy is the Good Behavior Game (GBG). The GBG is designed to allow students to work together while serving as role models for appropriate behavior (Barrish, Saunders & Wolf, 1969). This allows teachers to focus on minimizing inappropriate behavior for many students at the same time. Mechanically, the GBG is an intervention that uses a behavioral strategy called response cost, which involves the removal of a reinforcer in response to inappropriate behavior (Kaufman & O’Leary, 1972). For example, students are monitored based off the number of inappropriate behaviors they display with a differential reinforcement of low response rate schedule (Cooper, Heron & Heward, 2007).

To work harmoniously with SWPBS, a positive variation of the GBG would be more efficient to changing the class climate. Specifically, the Caught Being Good Game (CBGG) is an intervention that uses positive reinforcement, a different behavioral strategy from response cost typically used in the GBG (Wright & McCurdy, 2011). For
example, students are assigned points at certain periods of the day for the display of the student’s appropriate behavior with a ratio of differential reinforcement of other behavior schedule. This allow teachers to focus on teaching and reinforcing appropriate behaviors in the classroom.

GBG and CBGG both utilize a contingency management system in a cooperative learning environment to address behavior problems in the classroom setting. The GBG teaches children to reduce the amount of problem behavior but does not teach them how to act. In other words, GBG focuses on addressing and punishing the problem behavior (Barrish et al., 1969); whereas, the CBGG essentially teaches children how to appropriately behave (Wright & McCurdy, 2011). Although the GBG has indicated that it can reduce discipline referrals and increase academic performance, it does not support the positive and preventative framework of SWPBS. CBGG is an opportunity for teachers to use teacher mediated strategies while being preventative and positive. Preventative and early behavior interventions are now receiving more attention due to the identification of SWPBS. Taking into account SWPBS, the amount of disruptive behaviors, and the amount of time teachers spend on reducing the problems, there is a need to proactively prevent problems and teach students how to behave.

**Statement of the Problem and Significance of the Study**

Several problems exist in the school environment regarding classroom management strategies. First, the students are displaying high levels of problem behavior that impact their social skills and academic progress (Higgins, Williams, & McLaughlin, 2001). The elevation of behavioral problems in the classroom decreases instructional
time because teachers are forced to intervene on negative behaviors. Second, teachers are responsible for more than just academic success. They are also responsible for developing appropriate social behavior to mixed academic ability students with social and psychological differences (Eacute & Esteve, 2000). Third, teachers must have the tools that promote an environment where they can address these behavioral problems. Further, most of the literature in this area has focused on elementary and middle school populations (Balfanz, Herzog, & Mac Iver, 2007). Although it is important to intervene at an early age, learning does not end in elementary or middle school and, in fact, more frequent and significant problem behaviors may be displayed during secondary education years. Lastly, high school children receiving special education services may require extra behavioral and academic support, which may affect a teacher’s ability to effectively teach when this unique group of students is also displaying problem behavior.

One method to assist teachers is a classroom management strategy that can benefit teachers is a class-wide intervention, GBG (Barrish et al., 1969). Currently, the scarcity of literature that has examined the GBG at the high school level has only evaluated students in general education classes (e.g., Kleinman & Saigh, 2011; Mitchell, Tingstrom, Dufrene, Ford, & Sterling, 2015). Furthermore, research has mainly examined the effect of the GBG on off-task and disruptive behaviors. Also, surprisingly, there is no found literature of the CBGG in the high school setting or with students in special education, which is concerning because the CBGG promotes the principles of SWPBS. Therefore, the purpose of the current study is to investigate if the CBGG will decrease problem behavior in a high school special education classroom. Further, the current study will demonstrate the teachers’ acceptability of the CBGG in this unique
The findings from this study will provide stakeholders with a valuable resource that corresponds to a positive and proactive framework at the secondary level. It is hoped that it will provide evidence to school personnel of an effective strategy to intervene on problem behavior and demonstrate teacher acceptance of the CBGG. Thus, this study will provide special education teachers with intervention strategies that have demonstrated effectiveness in general education settings.

**Research Questions**

This study aimed to answer the following research questions:

1. Will the implementation of the CBGG result in an increase in on-task behavior within a high school special education classroom setting?
2. Will the implementation of the CBGG result in a decrease in off-task behavior within a high school special education classroom setting?
CHAPTER II

REVIEW OF LITERATURE

According to the Department of Education statistics, 19.6% students in grades 6 through 12 have been suspended for behavioral concerns (School climate and discipline: Know the data, 2016). It is important to intervene on this problem behavior because research has demonstrated that it is related to school absenteeism, school dropout (Farmer & Farmer, 1999), and criminal activity (e.g., Campbell & Ewing, 1990). Research has also suggested that behavioral concerns can negatively affect academic progress and social success (Farmer & Farmer, 1999) within a school. Disruptive behavior impacts students who display inappropriate behavior and the bystanders in the classroom (Luiselli, Putnam, & Sunderland, 2002). As a result, stakeholders have a substantial responsibility to change this negative behavioral and academic cycle using effective strategies (Wentzel, 1993).

Schools typically manage disruptive behavioral concerns through punitive strategies such as discipline referrals, corporal punishment, suspensions, withdrawal of privileges, and expulsions (Skiba, Peterson, & Williams, 1997). Many interventions used in the school system incorporate key elements of behaviorism, a psychological theory, to address students’ problem behavior (Stage & Quiroz, 1997). Behaviorism is grounded in reinforcement and punishment to increase or decrease the presence of specific
behavior(s). Within this theory, one major tenet is the idea that behavior is determined by conditioning, and internal thoughts are not necessary as a true determinant in understanding behavior. Pavlov originally developed behaviorism in the late 1800s, focusing primarily on conditioning behavior through the association of an unconditioned stimulus. Since this original concept, expansion of behaviorism has led to two main principles used to explain behavior (i.e., classical conditioning and operant conditioning). Operant conditioning is a type of learning that occurs when behavior is changed by reward or punishment (Skinner, 1938, 1953). Classical conditioning is learning by the pairing of two stimuli in which the second stimulus is displayed independently (Rescorla & Solomon, 1967). Both principles have demonstrated much success in its application and many intervention systems have been used based on these concepts (Altman & Linton, 1971). When positive behavior support strategies are implemented in the school setting, stakeholders have the opportunity to focus on classroom management and to make system wide change.

**School-Wide Positive Behavior Supports**

Currently, schools engaged in the implementation of a comprehensive system that allows educators to have a universal framework for preventing the previously mentioned problem behaviors. One method schools have attempted to focus on in order to prevent behavior concerns and promote a positive environment is a multi-tiered system across the entire district using positive behavior intervention and supports. SWPBS is a universal framework that promotes a positive school climate, and early identification and teaching of appropriate behavior in the school setting (Sugai & Horner, 2006; Sugai, Horner, &
Gresham, 2002). SWPBS is based on the three-tiered Response to Intervention model that posits that students should have behavior expectations, and positive consequences for failing to display inappropriate behavior. The effectiveness of SWPBS is especially dependent on behavioral principles implemented by all school personnel (e.g., administrators, teachers, mental health personnel, bus drivers, custodians), which suggests the importance of conditioning behavior through the use of reinforcement.

There are three levels of intervention within SWPBS with Tier Three representing the highest most specific level within the framework. It requires specialized individualized interventions for students with high-risk behavior (ideally, only 1-5% of the total student population). Within the tertiary prevention tier, students receive additional specialized behavior support from teachers and others. They may receive behavior strategies in the form of an individualized comprehensive plan related to the function of their problem behavior developed after a formalized assessment has been conducted. Tier Two is the secondary level, ideally targeting 5-10% of the school population. Students in the second tier are placed in small groups of students who are identified as at risk for behavioral concerns. At this level, students may receive small group instruction in social skills, anger management, or coping strategies. Lastly, Tier One is the universal tier in which all students (including those in Tiers Two and Three) receive preventative, proactive instruction in all settings focusing on establishing and teaching school-wide behavioral expectations. With its tiers, SWPBS has been demonstrated to reduce discipline referrals (Bradshaw, Debnam, Koth, & Leaf, 2009).
Classroom Management Interventions

Classroom management strategies have been extensively studied for many years (e.g., Canter 1976; Levin & Nolan, 2003; Stronge, 2007; Wong & Wong, 1998). Research findings suggest that effective classroom management strategies may vary according to their supporting theories in effective ways to manage classrooms. Wong and Wong (1998) proposed utilizing more strategies from teachers such as organization skills, time allocation, and specific materials to improve learning. Then, Henington and Doggett (2004) provided suggestions on how to foster a positive classroom environment by indicating that five key elements. These elements included: (a) physical classroom structure, (b) rules, schedules, and procedures, (c) managing transitions, (d) enhancing and maintaining student motivation, and (e) tracking the effectiveness of the procedures through data collection. Whereas, Stronge (2007) indicated that classroom management is solely defined by rules and discipline, and is based on a community effort displayed by teachers and students. By expanding the literature base in classroom management, the presence of classroom management skills are believed to equip teachers with proactive strategies to prevent problem behavior of students and to decrease negative student outcomes.

When considering behavioral theory, several types of classroom management strategies are used at the different tier within the SWPBS framework. These classroom management strategies may differ based on the role of the manager or facilitator, such as the child, peer or teacher.
Child-Directed Interventions

Depending on the age of the student, child-directed interventions might be a sufficient way to intervene on problem behavior in the classroom. Child-directed interventions ensure that the target student monitors his/her behavior and provides him or herself with the intervention, which is believed to promote responsibility (Moore, Anderson, Glassenbury, Lang, & Didden, 2013). For example, self-management encouraged independence amongst students while using problem solving strategies to promote self-control (Rosenbaum & Drabman, 1979).

Child-directed strategies, such as self-management strategies, allow students independence and control over their behavior (Purdie et al., 2002). There are four common self-management strategies: (a) self-monitoring (Mace, Belfiore, & Hutchinson, 2001), self-evaluation (Mace et al., 2001); (b) self-instruction (Shapiro & Cole, 1994); and (c) strategy instruction (Coyne, Kame’enui, & Simmons, 2001). These strategies have demonstrated their effectiveness for children with emotional and behavioral difficulties (Menzies et al., 2009). Thus, child-directed strategies have been shown to be effective interventions to use because they may provide active engagement of students with and without disabilities in the implementation of the intervention.

A review of literature on self-management strategies shows there are several areas of research necessary to broaden the range of child-directed strategies based. First, the definitions of target behaviors should be more exact and cited within the research study (Menzies, Lane, & Lee, 2009). The majority of interventions that are found within the literature monitored on-task behavior (Briesch & Chafouleas, 2009). Although on-task behavior is a common concern (e.g., Amato Zech, Hoff, & Doepke, 2006), there are
other types of problem behaviors that are present in the school setting. The continued implementation of self-management strategies in older children would allow for a further investigation of changes in behavior in relation to independence and responsibility. Furthermore, although interventions have extensively focused on elementary children and in children with disabilities, there is a limited literature that suggests effectiveness of self-management strategies for other populations.

In summary, child-directed interventions promote responsibility and independence (Moore et al., 2013). Child-directed interventions such as self-management help teachers spend more time on instruction than on discipline (King-Sears & Cummings, 1996). Conversely, research on child-directed interventions is sparse with regard to the variety of behavior concerns and age groups in comparison to other (i.e., peer- and teacher-mediated) classroom management strategies.

**Peer-Mediated Interventions**

Peer-mediated interventions have been used in extant literature to indicate that a peer, as well as an interventionist, can produce behavioral change in academic and social settings. Unique from child-directed or teacher-directed strategies, peer-mediated strategies are dependent on a peer as the implementer of the intervention (Maheady, Sacca, & Hardy, 1988). Specifically, peer-mediated strategies allow a peer to be the interventionist who implements the intervention(s) and facilitates social interactions (Maheady et al., 1988). Additionally, peer-mediated interventions have been used to produce change in academic performance (Ryan, Reid, & Epstein, 2004) and social behavior (Bellini, Peters, Benner, & Hopf, 2007). For example, Ryan and colleagues
(2004) examined several peer-mediated strategies on the academic outcomes of children with emotional disorders. This article’s review found positive outcomes of the following peer mediated strategies in many academic areas (Ryan et al., 2004).

Some examples of peer-mediated strategies include peer reinforcement, peer modeling, peer assessment, peer assisted learning strategies, peer tutoring, cross age tutoring, cooperative learning, and class-wide peer tutoring (Ryan et al., 2004). Increased on-task behavior and group help were two classroom benefits of cooperative learning (Gillies & Ashman, 1998). Overall, the research on peer-mediated strategies suggests that peers are helpful agents in producing behavior change.

**Cooperative learning.** Cooperative learning is the collaboration of peers to understand individual and group expectations and for everyone to increase skills in a particular area (Ryan et al., 2004). This strategy requires individuals to work together (Sharan, 1980). Cooperative learning works with many populations, including children with disabilities and children without disabilities (e.g., Slavin, 1983).

In one study, Jenkins and colleagues interviewed 21 general education teachers to evaluate their perspective on the benefits of cooperative learning (Jenkins, Antil, Wayne, & Vadasz, 2003). The investigators used a semi-structured interview protocol to determine teacher’s current use of cooperative learning and their experience with this instructional strategy, their judgments about its benefits and efficacy, participation of students in cooperative learning activities and modifications they used for special and remedial education students. Using a qualitative design, the investigators found that teachers indicated that cooperative learning improved self-esteem, provision of a safe
learning environment, and greater success rates on classroom tasks and better products (Jenkins et al., 2003).

Another study examined the impact of cooperative learning on the amount of off-task behavior in 164 ninth-grade, general education students (Gillis & Ashman, 1998). Specifically, a multivariate analysis of variance (MANOVA) was used to determine if there were significant differences between the amount of cooperation, noncooperation, and individual task oriented and non-task oriented behavior in structured and unstructured groups (Gillies & Ashman, 1998). In this example, cooperative learning was found to not only increase individual orientated behavior, but also to decrease off-task behavior.

In summary, peer-mediated strategies have been used in research since the early 1990s (Johnson & Johnson, 1996) and such strategies focuses on using the peer as the change agent is student behavior academically and socially. Peer-mediated, strategies have demonstrated effectiveness in skill development, such as off-task behavior (DuPaul, Ervin, Hook & McGoey, 1998) and group oriented behavior (Davies & Witte, 2000). Several peer-mediated strategies appear to have specific requirements in order to be effective (e.g., lack of competitive environment, pairing of higher and lower skilled peers). Cooperative learning suggested that it benefited students by decreasing problem behavior and increasing other behaviors. Given these findings, peer-mediated strategies should continue to be used to examine the behavior performance of students.
Teacher-Mediated Interventions

Teachers have large a responsibility to prepare students academically, behaviorally, and even socially (Wentzel, 1993). This responsibility often causes stress for teachers because they are mandated by federal and district policies to make sure that methods utilized to provide instruction are fair and beneficial for all children. There are students in classrooms who need extra support to regulate their behavior. Furthermore, the students who engage in disruptive behavior impact teachers’ ability to adhere to federal and district mandates. Research has suggested that behavior concerns can negatively affect academic progress and social skills (Finn, Pannozzo, & Voelkl, 1995); therefore, it is important that problem behaviors are minimized.

Teacher-mediated interventions require the teacher to act as the interventionist and have primarily responsible for implementing the strategy. One of the most common teacher-mediated intervention based on behavioral principles in the schools is the token economy. A token economy is an intervention that provides systematic reinforcement that is often in the form a manipulative and later submitted for a prize (Kazdin, 1982). Given documented success in improving behavior, token economies have been used across grades, behaviors, and populations (Kazdin, 1982; McLaughlin & Williams, 1988). Other teacher-mediated interventions proven to be effective include positive reinforcement, contingency management, timeout, and response cost.

Summary

Based on the need to manage a classroom, research targeting classroom management strategies such as child-directed, peer- and teacher-mediated interventions is
plentiful. Child-directed strategies allows students to self-manage their own behavior, which may ensure greater success and generalization to other areas of school because students are taught self-control and independence (Coyne et al., 2001; Mace et al., 2001; Shapiro & Cole, 1994). Peer-mediated interventions have been used to show that a peer can be an effective interventionist (Maheady et al., 1988) to influence academic and behavioral performance (Ryan et al., 2004), improve social behavior (Bellini et al., 2007), and facilitate successful peer relationships (Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003). Although it may be optimal to incorporate students (self or peers) into interventions, the majority of the classroom management strategies are teacher-mediated. Teacher mediated strategies are primarily rooted in behavioral principles such as reinforcement and punishment procedures. The following section provides a review of teacher-mediated strategies for classroom management.

**Types of Teacher-Mediated Strategies**

Teacher-mediated strategies are tools in which teachers implement an intervention and monitor the progress of students. There are five well-known components of teacher-mediated strategies (i.e., positive reinforcement, response cost, timeout, token economies, and contingency management; Stage & Quiroz, 1997). These components have been demonstrated to be effective in decreasing inappropriate behavior and increasing appropriate behavior (e.g., Donahoe & Palmer, 1994). These components are presented in more detail below.
Positive Reinforcement

Positive reinforcement includes the addition of a stimulus after a behavior occurs to increase the likelihood that the behavior will be repeated (Skinner, 1953). The consequence (i.e., increased likelihood) is strengthened when a desired outcome occurs. According to Wielkiewicz (1995), the principle of positive reinforcement is effective regardless of age, gender, culture, and disability. Regardless of the effectiveness, positive reinforcement strategies are less likely to be utilized by teachers due to the unnatural conditions for delivery, the amount of large amount of time necessary for implementation, and the lack of additional compensation (Axelrod, 1996).

Timeout

Timeout from positive reinforcement often involves the removal of a child from a reinforcing situation when he or she engages in inappropriate behavior and has been shown to be effective in reducing inappropriate behavior (Linkenhoker, 1974). Based on behavioral theory, timeout is a form of negative punishment (Linkenhoker, 1974) and ideally is a third level of a behavior management procedure; therefore, less optimal than more positive types of interventions. There are several forms of time out. Seclusionary timeout involves a student being removed and placed in a timeout room for a set amount of time (Busch & Shore, 2000). Non-seclusionary timeout involves the student no longer receiving reinforcement for a certain amount of time, but does not require removal from the setting (Cooper et al., 2007; Harris, 1985; Wolery, Bailey, & Sugai, 1988). Lastly, exclusionary timeout involves the student’s removal from the activity while being able to observe others engaging in the activity. Out of the three types of timeout, Henington and
Doggett (2004) and Ryan, Sanders, Katsiyannis, and Yell (2007) stated that seclusionary timeout is the most used by educators.

Several aspects of timeout have been extensively studied, such as length of timeout (e.g., Henington & Doggett, 2004; Hobbs, Forehand, & Murray, 1978); populations exposed to timeout (e.g., Sterling-Turner, & Watson, 1999); how timeout should be used (e.g., Donaldson, Vollmer, Yakich, & Van Camp, 2013); and if it should be used in conjunction with other classroom management strategies (e.g., Ryan et al., 2007). When referring to the length of timeout, Henington and Doggett (2004) indicated that timeout should not be longer than 5 minutes in most situations. Henington and Doggett (2004) also suggested that during timeout all reinforcement, including attention, comments, and smiles should not be administered to the child. Lastly, Henington and Doggett (2004) indicate that social reinforcement (i.e., ‘time-in’) after timeout should be provided for the display of appropriate behavior and will help students learn that timeout (e.g., losing of reinforcement) occurs after problem behavior and reinforcement for appropriate behavior occurs after students display target behavior.

Clearly, types of timeout and when to use it have been studied. One of the first studies that examined exclusionary timeout found it was effective in decreasing disruptive behavior in elementary students (Nau, Van Houten, & O’Neil, 1981). This example study shows that timeout was effective in preschool children and elementary students. Overall, timeout procedures are an effective (but less preferred by those who endorse more proactive procedures) way to help school personnel reduce problem behaviors and change the environment of the classroom.
Token Economy

Token economy is a system used in many settings to reward desired behavior. A token economy system allows individuals to receive reinforcement based upon the display of appropriate behavior, thereby increasing the occurrence of the rewarded behavior. Kazdin (1977) defined token economies as systems where tokens are used to trade for a desired reinforcer (Kazdin, 1977). In order for this system to work, Kazdin (1977) identified some necessary components for a successful token economy.

First, behaviors targeted in a token economy must be clearly identified and observable (Wolery et al., 1988). The second basic component of a token economy is the token. While there are some highly structured guidelines for a successful token economy, there is much flexibility in its delivery (Kazdin & Bootzin, 1972). Token economies do not have to use tokens, but instead they can be objects or symbols that are representative of progress (Ayllon & Azrin, 1968; Kazdin & Bootzin, 1972). Guidelines for delivery and exchange should be identified and consistent across the intervention. The tokens may change depending on the age of the individual. The third and last necessity for a token economy to be successful is the use of reinforcement menus. These menus clarify how frequently tokens were delivered and under which circumstances (Kazdin & Bootzin, 1972). This also helps individuals identify backup reinforcers (Kazdin & Bootzin, 1972). While it is not necessary that the reinforcers on this menu to be tangible items, some advantages include durability, portability, representation of token, and possibly indestructible (Kazdin & Bootzin, 1972). According to research, it is important to have a variety of reinforcers so that participants do not become satiated (O’Leary & Drabman, 1971).
Preliminary studies examining the effectiveness of token economies focused on children and adults with intellectual disorders (Ayllon & Azrin, 1965; O’Leary & Drabman, 1971). Using individuals with intellectual disorders was groundbreaking in support of the use of token economies to modify behavior (Ayllon & Azrin, 1965). A few years later, Wolf, Giles, and Hall (1968) reported that work completion could be increased by awarding points to children, including those with a borderline low cognitive ability and those with an average cognitive ability, in exchange for field trips and tangible items. Later, Fox and Roseen (1977) successfully used a token economy to reinforce engagement in routine daily living skills. Additional examples include studies of token economies used to change a wide range of target behaviors include disruptive behaviors (e.g., Maggin, Chafouleas, Goddard, & Johnson, 2011); academic progress (e.g., Truchlicka, McLaughlin, & Swain, 1998); social behaviors and appropriate school conduct (Matson, & Boisjoli, 2009); and self-care (e.g., Matson & Boisjoli, 2009). These studies demonstrate that the token economy has the potential to change a variety of behavior in different populations.

A specific strategy targeting an entire classroom of students (i.e., class-wide token economies) have been shown to help teachers devote more time to teaching and less time on discipline and to allow teachers to monitor the classroom using one intervention instead of multiple interventions targeting multiple students (Witt, Elliott, & Martens, 1984). Class-wide token economies have been shown to effect an increase in appropriate behavior even with minimal implementation (e.g., Rosen, Taylor, O’Leary, & Sanderson, 1990) and support the concept that more intensive and individualized interventions may not be necessary to reduce problem behavior in groups of individuals.
Response Cost

As previously mentioned, response cost is the removal of a reinforcer for the display inappropriate behavior (Kaufman & O'Leary, 1972). This intervention is often used in conjunction with token economies to improve behavior (e.g., Truchlicka et al., 1998). Similar to token economies, response cost systems have been used in many settings (e.g., clinical and schools settings) and for many academic and behavior concerns (e.g., spelling, math, noncompliance; Jurbergs, Palcic, & Kelley, 2007). Researchers have shown the use of response cost in combination of a token economy has long lasting effects in the school setting with typically developing children, as well as those with disabilities, and is effective across many age groups (e.g., Kazdin & Bootzin, 1972).

Contingency Management

Contingency management is the regulation of appropriate behavior and reinforcement for desired behavior of an individual or a group of students (Litow & Pumroy, 1975). An individual group contingency targets problem behavior of one student; whereas, a group contingency (also known as a group-oriented contingency or group based reward) targets problem behavior for a group of students, which may include a class-wide or system-wide intervention (Litow & Pumroy, 1975). The main difference between an individual and a group contingency is the amount of students used in each management system. While individual contingencies have been used in a wide variety of concerns, this paper will focus on the three main types of group contingencies described in the next section.
Types of Group Contingency Management Strategies

There are three types of group contingencies: (a) dependent contingencies, (b) independent group contingencies, and (c) interdependent group contingencies (Litow & Pumroy, 1975). The core difference in the types is whether a reward is contingent upon behavior of one individual in a group, portions of a group, or each member in a group (Popkin & Skinner, 2003).

Dependent Group Contingency

Although all three types of group contingencies have indicated their potential in decreasing challenging behaviors (Christ & Christ, 2006; McCurdy, Lannie, & Barnabas, 2009; Stage & Quiroz, 1997; Theodore, Bray, & Kehle, 2004), there is very limited research on dependent group contingencies. Dependent group contingencies reward a group of students if a target student displays appropriate behavior (Litow & Pumroy, 1975). Meaning, the remaining group of students who also displays appropriate behavior are not reinforced for the behavior if the target student did not display the appropriate behavior. This type of intervention may cause frustration among others in the group or even undermine a positive class climate (Davis & Blankenship, 1996; Litow & Pumroy, 1975). On the other hand, a dependent group contingency is best for students who may desire high levels of attention (Jones & Kazdin, 1975) and allows students to use the principles of cooperative learning to receive a prize.
Independent Group Contingency

In an independent group contingency students are rewarded if they individually meet a specific criterion of displaying appropriate behavior (Litow & Pumroy, 1975). This type of group contingency can be used in a group or individual format and individual students are forced to be more responsible for their own behavior (Elliot et al., 1987). Specifically, in an independent group contingency the success of some students does not affect the success of other students (Skinner, Skinner, Skinner, & Cashwell, 1999). Students within an independent group contingency have equal weight and there is no student who has a special, individualized goal. Unlike a dependent group contingency, there is no social motivation associated with the group contingency (Sloman, Reyes, & Vollmer, 2014). An independent group contingency provides a reward to students if they individually meet a specific criterion of displaying appropriate behavior (Litow & Pumroy, 1975). This type of contingency can be used in a group or individual format. For example, Kayla may receive a reward if she alone earns 90% on her spelling test. Kayla’s access to a reward is not dependent on if her classmates get a reward. In this type of contingency, students are forced to be more responsible for their own behavior (Elliot, Turco, & Gresham, 1987). An independent group contingency are often occasionally referred to as token economies.

Sloman and colleagues (2014) evaluated the effects of an independent group contingency in a residential treatment setting using a frequency count of inappropriate behavior on adults between the ages of 18 to 64 years. The uniqueness of the setting in this study allowed it to contribute to the literature by demonstrating benefits for older individuals in other settings. Furthermore, the behavior that was targeted included severe
problem behavior such as aggression and disruption of people with developmental disabilities measured across several months. The results found that inappropriate behavior diminished.

**Interdependent Group Contingency**

An interdependent group contingency involves providing a reward to an entire group if each member of the group meets a criteria (Litow & Pumroy, 1975). Interdependent group contingencies promote cooperative learning because peers are influenced by other group members to get a reward (Slavin, 1980). Interdependent group contingencies use cooperative learning and behavior theory without targeting specific groups. Research suggests that this is the best way to intervene on problem behavior (Tingstrom, Sterling-Turner, & Wilczynski, 2006) because it creates social contracts, prosocial behavior, and sharing of resources (Gamble & Strain, 1979; Lambert, Tingstrom, Sterling, Dufrene, & Lynne, 2015; Salend, Reynolds, & Coyle, 1989; Speltz, Shimamura, & McReynolds, 1982). Despite its potential, there are two concerns with interdependent group contingencies: sabotage and blame. Sabotage may occur from students who are attention seeking and may not find the reward worthy of meeting the criteria. On the other hand, blame may occur if members of a group think that a criteria may not be met due to the actions of a few specific students. Kelshaw-Levering and colleagues (2000) suggest that these weaknesses can be reduced or eliminated if there are randomized target behaviors, criteria, or consequences. Some noted benefits of an interdependent group contingency include easier data collection and time efficiency (Gresham & Gresham, 1982), and the potential for a larger pool of reinforcers that may
include activities as opposed to tangible items (Tingstrom et al., 2006). Clearly, there are benefits and drawbacks to interdependent group contingencies; however, research has demonstrated that it is effective in improving classroom climate (e.g., Bear & Richards, 1980; Lee, Penrod, & Price, 2017).

In summary, the three types of group contingencies have significant implications for the success of a teacher-mediated strategy. As previously mentioned, independent, interdependent, and dependent group contingencies apply positive reinforcement, response cost, contingency management, and token economies in order to shape behavior in the classroom (Litow & Pumroy, 1975). The two types of contingencies are individual (e.g., target common problem behavior individually) and group (e.g., target problem behavior for groups of students). Group contingencies are efficient interventions, especially for older students because they allow teachers to focus intervention on whole groups opposed to individual interventions in a classroom of students (Litow & Pumroy, 1975). Most importantly, group contingencies are beneficial because they have the opportunity to change the environment in the class by reinforcing or punishing behavior.

**The Good Behavior Game**

Based on the amount and types of behavior problems in the schools, research in the area of interdependent group contingencies is growing. These interventions should be targeted in in research in order to decrease the specific problem behaviors in each classroom. Interdependent group contingencies address this goal and promote a cooperative learning style environment (Salend et al., 1989).
One commonly used interdependent group contingency intervention is the GBG. By description, the GBG is a teacher-mediated classroom management strategy. This intervention uses two teacher-mediated strategies (i.e., contingency management and positive reinforcement) and one peer-mediated strategy (i.e., cooperative learning) to change student behavior. Simply, the GBG requires a teacher to divide a class into two equal teams, identify problem and replacement behaviors, and award points for meeting identified criteria (Tingstrom et al., 2006). The primary goals of the GBG are to encourage teachers to identify, model, and deliver feedback.

Some procedural steps are critical to the success of the GBG. First, the GBG must be implemented within a certain time. Second, the problem behaviors should be clearly defined. Third, reinforcers must be selected and delivery of reinforcement must be decided (Barrish et al., 1969). Although some studies utilized a preference assessment (Kleinman & Saigh, 2011; Lannie & McCurdy, 2007; Saigh & Umar, 1983; Salend et al., 1989), many studies have not included a preference assessment and still achieved significant outcomes. Additionally, most studies used a tangible reward (Barrish et al., 1969; Bostow & Geiger, 1976; Darveaux, 1984; Kleinman & Saigh, 2011; Lannie & McCurdy, 2007; Medland & Stachnik, 1972; Salend et al., 1989; Tanol, Johnson, McComas, & Cote, 2010). Fourth, students must be explained the rules of the game. This step also includes the assignment to teams and identification of the maximum number of points. Lastly, teachers must be actively involved. They introduce the start of the game and must continuously monitor and note behavior while teaching their lesson. Overall, it is highly important that the GBG instructions are clearly defined, while behavior and rules are accurately and closely followed. Since the development and
implementation of the GBG, literature within the GBG has grown (Kleinman & Saigh, 2011; Lannie & McCurdy, 2007, Saigh & Umar, 1983; Salend et al., 1989)

**GBG within General Education Elementary School Level**

Several research studies have examined the GBG in the general education setting at the elementary level. One of the founding studies of the GBG evaluated out-of-seat and talking-out behavior of 24 fourth-grade students (Barrish et al., 1969). The students reportedly had received several discipline referrals. In order for a team to win, student members had to receive fewer than five marks which would provide victory tags (i.e., stars by team members’ names), the privilege to line up first for lunch, and the opportunity to take part in 30 minutes of special projects as reinforcers. The researchers identified the problem behaviors in collaboration with the teacher. The researchers used a multiple baseline reversal design to reduce out-of-seat and talking-out behavior. This implementation of the GBG was the first of its kind to clearly show that peer competition and positive consequences for appropriate behavior led to an effective reduction of inappropriate behavior. Although this groundbreaking intervention indicated its usefulness and ability to change behavior, there were limitations (i.e., multiple components within the game). Specifically, teacher had to monitor behavior of a number of students with high amounts of problem behavior on one team. The authors mentioned several areas of needed improvement: (a) a lack of a signaling system, (b) awareness of target behavior, and (c) identification of the key aspects of the GBG that make it effective.
To address the last consideration above, a component analysis of the original GBG study in a follow up study was conducted by Medland and Stachnik (1972). The researchers used a reversal experimental design and conducted a component analysis. Specifically, the researchers’ goal was to determine the impact of components such as the statement of rules being repeated daily and the use of a light system to show how teams were doing. The intervention targeted out-of-seat, talking-out, and disruptive behavior, and attempted to increase asking for permission in a group of general education students across 55 sessions. The conducted by Medland and Stachnik (1972) expanded on the literature by examining how the components such as the statement of rules would affect behavior and the importance of contingent rewards. The analysis identified that rules, light indicators were effective in reducing behavior, and reinforcers such as extra time, recess, and free time were useful. Since this study, there have been more studies that have evaluated classroom behavior (i.e., Bostow & Geiger, 1976; Darch & Thorpe, 1977; Robertshaw & Hiebert, 1973; Saigh & Umar, 1983).

In addition to classroom behavior, the GBG has also been evaluated on dental hygiene in first- and second-grade students (Swain, Allard, & Holborn, 1982). In this study, teeth cleanliness was examined using a multiple baseline design across elementary classrooms in 45 students. The researchers identified the intervention as the Good Tooth Brushing Game because students received daily checks on the level of teeth cleanliness. Similar to other studies using the GBG procedures, the findings demonstrated that oral hygiene improved over time. Additionally, a follow up was conducted which also demonstrated that oral hygiene skills were maintained overtime. Another unique feature is the amount of time (less than 20 minutes) and inexpensive items (dental objects) used
throughout the study. Findings suggest that behavioral principles such as reinforcement and feedback of progress improved oral hygiene.

In summary, the GBG has been proven to have positive effects on reducing problem behavior at the elementary level in a general education setting. Research has shown that the GBG is effective in reducing out-of-seat behavior, talking-out (Barrish et al., 1969), disruptive behavior (Medland & Stanchnik, 1982), and poor dental hygiene (Swain et al., 1982).

**GBG within General Education High School Level**

As of 2016, the application of the GBG in a general education high school setting has received less attention than elementary level (Flower, McKenna, Muething, Bryant, & Bryant, 2014; Kleinman & Saigh, 2011; Mitchell et al., 2015; Salend, et al., 1989). Actually, most of the studies that examined high school children took place within the last 10 years.

For example, Kleinman and Saigh (2011) used 15 male students and 11 females in a reversal design to evaluate talk or verbal disruption, aggression, and out-of-seat behavior across 27 days. At the end of GBG implementation, a social validity measure was administered to students which produced positive results. All students reported they thought they learned more during the game phases, 89% of the students reported that they thought it was easier to learn during game phases, 89% of the students reported improvement, in classmate’s behavior, and 66% reported improvement in their personal behavior. Before the implementation of the GBG, teachers and principals had reported learning was often disrupted due to the high amount behavior. Significantly, the authors
noted that there were some changes to the GBG made for this older population (i.e.,
telling the participants that they would have an opportunity to participate instead of being
forced to participate and referring to the rules as expectations). The results of the study
showed immediate decreases in all disruptive behaviors.

More recently, there has been a study to evaluate the GBG in a high school
general education setting (Mitchell et al., 2015). Using an ABAB withdrawal design, the
GBG was implemented in three classrooms in a southeastern state. The students were in
the 9th, 10th, and 11th grade, and either in Algebra or Spanish II. Inappropriate
vocalizations, and off-task and out of seat behavior were target behaviors. The current
study contributed to the literature by implementing a social validity measure for both
teachers and students. Unlike previous articles, the researchers provided demographic
information about the teachers such as age, race/ethnicity, and number of years in
teaching. Teacher training was also provided, which was not common in other GBG
studies (Tingstrom et al., 2006). In fact, only seven studies as of 2014 that implemented
the GBG have used a teacher training (Darveaux, 1984; Lannie & McCurdy, 2007; Tanol
et al., 2010) that included a lecture, follow up, and feedback upon implementation. With
regard to the reduction of problem behavior, social validity, and slightly altered age
appropriate components of the GBG, the results of this study by Mitchell and colleagues
(2015) were parallel to those of previous research on the GBG (Kleinman & Saigh,
2011). Specifically, off-task and out of seat behavior, and vocalizations immediately
decreased in the high school classrooms.

In summary, although the GBG’s literature base has several years of support,
there is very little support in the general education high schools setting (Kleinman &
Saigh, 2011; Mitchell et al., 2015). However, two identified studies did evaluate disruptive and off-task behaviors. The similarities between the two studies included the use of a social validity measure to monitor feedback regarding the GBG.

**GBG within Special Education Setting**

Given that children with disabilities may display behavioral concerns, the literature base regarding this population warrants continued and expanding research. Hegerle, Kesecker, and Couch (1979) were the first to conduct the GBG in a self-contained classroom of elementary aged children who had problem behaviors such as talking-out and being out-of-seat. An AB design with a changing criterion component was used to reduce the problem behaviors. The game was played for 45 minutes daily with the intervention implemented four days of the weeks and on Fridays, students played the game and received reinforcement. It was found that both teams of students achieved their daily prize and both target behaviors were reduced overtime.

A few years later, Gresham and Gresham (1982) used children with disabilities to compare interdependent, dependent, and independent contingencies to monitor disruptive behavior in children with low cognitive abilities. Then, Phillips and Christie (1986) implemented the GBG using 32 middle school children with intellectual disabilities to reduce off-task behavior. Gresham and Gresham (1982) demonstrated the group contingencies were successful in decreasing disruptive behavior. Due to the design of the study the researchers were unable to find that carry over effects were not present. However, Gresham and Gresham (1982) indicated that the interdependent group contingency and the dependent group contingency were more effective than the
independent group contingency. Phillips and Christie (1986) also found that prosocial behaviors and appropriate classroom behaviors increased after the implementation of the GBG. Unlike Gresham and Gresham (1982) and Phillips and Christie (1986), Salend and colleagues (1989) conducted the first study using a reversal design with high school students with disabilities. Specifically, three classes of adolescents with emotional disturbance were targeted with goals to decrease touching, negative comments, cursing, and drumming. Teachers not only indicated satisfaction with the decrease in students’ inappropriate behavior, but also indicated positive ratings on a social validity measure. Davies and White (2000) contributed to the GBG literature base by combining GBG principles with a self-management strategy to reduce inappropriate vocalizations in third grade students with Attention-Deficit/Hyperactivity Disorder. This study was unique because there children with Attention-Deficit/Hyperactivity Disorder were studied, a combination of the GBG and a self-management strategy and a new target behavior, inappropriate vocalizations, was included.

Flower, McKenna, Muething et al., (2014) implemented the GBG in two high school algebra special education resource rooms. Students were receiving services based on a variety of eligibility criteria (i.e., learning disability, other health impairments-attention deficit/hyperactivity disorder, and intellectual disability). A single subject ABAB reversal and follow up design was conducted and an interdependent group contingency was added to the GBG. The target behavior included class-wide off-task behavior. The interdependent group contingency resulted in a decrease in class wide off-task behavior. Unlike other previous studies that implemented the GBG, a published a social validity measure, Intervention Rating Profile (Witt & Elliott, 1983), was used to
evaluate social validity. Results from this study indicated a significant decrease in class-
wide behavior. However, during the baseline condition it was noted that there was an 
increasing trend of inappropriate behavior, which has implications for the need for 
teachers to implement appropriate interventions consistently. The researchers suggested 
that under GBG conditions, students received instruction that was more academic in 
nature because teachers did not have to reduce instructional time to manage behavior.
With regard to social validity, the respondents indicated positive reactions to the GBG.

**Summary**

Since 1969, some teachers have addressed behavior problems using the GBG as a 
classroom management strategy (Barrish et al., 1969). It is evident that the GBG has 
mostly been researched with elementary-aged, general education students (e.g., Gresham 
& Gresham, 1982; Salend et al., 1989). According to Mitchell et al., (2015), the focus on 
elementary-aged students is due to practitioners believing the behavioral strategies within 
the GBG are not developmentally appropriate for older students. However, other 
researchers have shown that multiple populations can benefit from behavioral strategies 
with the GBG applied in multiple settings, to address multiple behaviors, and conducted 
in a variety of classrooms.

There is clear support for the implementation of the GBG game as a classroom 
management strategy. Several researchers since its implementation have explored the 
GBG’s effectiveness in reducing disruptive behavior, off-task behavior, aggression, 
talking out, out of seat behavior, rule violations, antisocial behavior, inappropriate social 
interactions, and externalizing behavior (Flower, McKenna, Bunuan et al., 2014).
Primarily, these problem behaviors were reduced in students in general education elementary and middle school. Researchers have begun to show that the GBG is not age limited and similar results are being produced in general education high school students (Tingstrom et al., 2006). Although it is pleasing to know general education high students can benefit from the GBG, there is still a need to establish similar findings in students who have disabilities at any grade (Flower, McKenna, Muething et al., 2014; Hegerle et al., 1979, Salend et al., 1989). Due to the fact that older populations with disabilities may have behavioral concerns, it is necessary that teachers have the means and knowledge to confidently rely on an effective procedure to shape behavior. Although the GBG has been applied in multiple settings and with demonstrated effectiveness, more research is warranted with older populations using the GBG to positively improving classroom and school climate (Flower, McKenna, Muething et al., 2014; Tingstrom et al., 2006).

**Positive Variations of the GBG**

Based on the popularity of positive behavior supports in the school system, there has been a dramatic increase in interventions targeting appropriate behavior within the response to intervention model. By focusing on appropriate behavior of students, teachers are able to focus on the positive achievements of students rather than their inappropriate behavior with positive impact on the school climate. A number of variations of the GBG have been implemented. For example, studies on a positive variation of the GBG have focused on target behaviors such as in-seat instead of out-of-seat behavior. In these studies, a single subject design was used (Darch & Thorpe, 1977; Darveaux, 1984; Robertshaw & Hiebert, 1973; Swiezy, Matson, & Box, 1992; Tanol et
35

al., 2010; Wright & McCurdy, 2011) and demonstrated effectiveness. Again, by teachers focusing on appropriate behavior, they were able to help students learn what behavior to display and classroom expectations.

The first study in which researchers used positive components within the GBG procedures was published by Robertshaw and Hiebert (1973). First-grade general education students were instructed to be “good astronauts” (i.e., good manners, working on assignments, waiting patiently, and performing tasks quietly). Six teams of students were informed that they had to be good astronauts in order to receive teacher-administered tokens. The students were also informed that the teams that had the most points would receive an unknown prize. The monitored behavior for the target student was inattentive behavior. Class-wide, the number of seatwork papers completed was also monitored. Inattentive behavior averaged 4% across the intervention phase for the target student. The class also increased their average of weekly papers completed from 18 to 36 papers.

In another example, instead of focusing on target students, Darch and Thorpe (1977) awarded points to teams whose entire membership displayed on-task behavior. Using an ABAC design, researchers sought to compare this version of the GBG to an independent group contingency in fourth-grade general education students. The results indicated that both interventions were effective, but on-task behavior reached higher levels under the interdependent group contingency condition.

By adding an academic component, an ABAB withdrawal design was utilized by Darveaux (1984) to address academic task completion in two second-grade classrooms and to decrease disruptive behavior. The researchers sought to examine the impact of the
GBG and the addition of a merit component. Specifically, the traditional GBG was implemented (i.e., recording of inappropriate behavior per team and the reinforcement of the team who met criteria) and the students received a merit when an assignment was completed at 75% accuracy. Meaning, the student teams would get a mark removed for the previous display of inappropriate behavior for every five merits earned. During the treatment phases, task completion increased from 40% to 75% and there was a reduction in disruptive behavior.

Later on, Swiezy, Matson, and Box (1992) rewarded the positive behaviors of preschool children using a variation of the GBG and completely removed the negative reinforcement used by Darveaux (1984). This study essentially used a token economy with no response cost system with four children grouped into two dyads. The intervention was implemented in the school kitchen or in the resource room and behavior during free play was observed randomly to determine generalization of the intervention effects. The teachers were trained to ignore inappropriate behavior and the students received attention and tangible reinforcers if they met the criteria. Compliance was observed to increase in both dyads; specifically, compliance increased from 11.7% and 27.3% during baseline to 74.7% and 76.5% during treatment. Swiezy and colleagues (1992) also reported that generalization across therapists was observed, but not across settings.

Then, Tanol and colleagues (2010) compared GBG response cost system and the GBG reinforcement system in one class of six kindergarten students in general education who difficulty with emotional behavior. The target behaviors were rule following and rule violating behavior. In order to compare two versions of the GBG, the researchers
used an ABACBC withdrawal design for 10 minutes for a total of 8 weeks. Under the reinforcement condition, a team was awarded a star for appropriate behavior. Under the response cost condition, each team started with the same number of stars but would lose a star for rule violating behavior. Teams had to meet a pre-determined number of stars as criteria to receive a prize. Both versions resulted in a decrease in rule violating behavior; however, the reinforcement system showed lower levels of rule violating behavior. Tanol and colleagues (2010) also noted that verbal attention increased (e.g., praise) in the reinforcement system. Further, the teachers indicated that the GBG created a more positive environment.

As the most recent positive variation of the GBG, Wright and McCurdy (2011) coined the term ‘Caught Being Good Game’ (CBGG). The researchers sought to examine the effectiveness of the GBG and the CBGG and to analyze the teacher and student acceptability. The participants included two general education elementary classrooms which had previously implemented school wide positive behavior supports. One class consisted of an even amount of 10 female and male fourth-grade students. The other class consisted of eight female and nine male kindergarten students.

One of the dependent variables in the study was disruptive behavior, which included verbal and physical infractions. The second dependent variable was on-task behavior. On-task behavior included attending to the teacher, physically completing assignments, and participating in class. Teachers were trained to scan the room on a variable ratio schedule during the CBGG condition for the display of appropriate behavior. The GBG was implemented in its traditional manner. Using an ABAC withdrawal design, Wright and McCurdy (2011) found that both CBGG and GBG
achieved desirable results and that there was no difference in the effectiveness between the interventions. Specifically, during the implementation phase, similar to the kindergarten class, on-task behavior increased, and disruptive behavior decreased. However, during the CBGG the percent of observed intervals was not as significant in changing behavior. Further, in the kindergarten classroom, disruptive behavior decreased during the reimplementation phase of both the GBG and CBGG phases. On-task behavior decreased to lower levels under the CBGG condition than under the GBG condition. In the fourth grade classroom, relative to the kindergarten room, students showed more on-task behavior and the same amount of disruptive behavior.

Additionally, both teachers and students reported that the CBGG and the GBG were an acceptable intervention based on rating on the Children’s Intervention Rating Profile (CIRP; Turco & Elliot, 1986) and Intervention Rating Profile (IRP-15; Martens, Witt, Elliot, & Darveaux, 1985).

Overall, school personnel are trying to move towards a more positive school climate that aligns SWPBS (Sugai & Horner, 2002). Positive variations of the GBG are one intervention that may facilitate this type of environment. Compared to the number of studies that have implemented the GBG in its traditional manner, there are a significantly fewer studies that have implemented the GBG using response cost principles or awarded points for following the expected behavior (Darveaux, 1984; Swiezy et al., 1992).

Although positive variations of the GBG have been proven to be effective in reducing problem behaviors in the general education setting at the pre-school and elementary levels, to-date the research as yet to include a positive variation at the high school level in general education and special education settings.
Summary

Failure to address problem behaviors in the school settings tends to lead to negative outcomes for all stakeholders. In recent years, there has been a push toward promote a positive school climate and early identification of at-risk students using response-to-intervention and SWPBS. Both have a foci of improving classroom management through the use of behavioral principles, which may include child-directed, peer-mediated and teacher-mediated strategies. Of these strategies, teacher-mediated strategies are an effective tool for decreasing disruptive behavior and increasing appropriately engaged behavior. Some teacher-mediated strategies (e.g., group contingencies, positive reinforcement) combined may include the formation of packaged interventions that are easy for teachers to implement and use behavioral principles to shape behavior.

As previously mentioned, the three main types of group contingencies include dependent variables, independent variables, and interdependent variables. There has been some literature to suggest which type of contingency is more effective and which contingency is best used for specific populations. There are still some questions that should be addressed in future studies on the GBG. Although Wright and McCurdy’s (2011) research study is the first intervention that emphasized ‘catching the student being good’, Maag (2001) demonstrated that catching students being good was the most effective for students with behavioral problems. However, Maag (2001) originally also stated that this concept was not as popular as other interventions because teachers believed that showing appropriate behavior should be typical (Maag, 2001). With this perspective in mind, there are implications for how teachers will appropriately implement
the CBGG. The growing amount of literature on positive variations of the GBG indicates that this version is just as effective as the intervention in its traditional method.

The GBG has been used throughout many settings to address academic, behavior, and social concerns. Since the late 1960s, many variations have been used to decrease inappropriate behavior and more recently increase appropriate behavior. The GBG is a relatively easy intervention to use to change behavior without using many monetary school resources and teacher time. Teachers have indicated using social validity measures that the GBG is useful and can change behavior in brief amount of time.

In the early 2000s, school systems increased their desire to prevent and promote appropriate behavior. The GBG’s founding principles promote this idea by allowing teachers to shape behaviors before they occur. The CBGG’s principles also support the idea of a positive and preventative intervention strategy because it specifically focuses on appropriate behavior. This may even be an ideal way of intervening on behavior for older students since students at this age are able to understand teacher expectations and possibly apply displaying appropriate behavior in other settings.
CHAPTER III

METHODOLOGY

The purpose of this study is to examine the effects of the CBGG on problem behaviors (e.g., on-task and off-task behavior) of students in a high school special education classroom. This chapter provides a detailed description of the methodology used to examine the effects of the CBGG on students’ behavior. The following sections discussed in this chapter include: (a) settings, (b) participants, (c) materials, (d) instruments, (e) dependent variable, (f) independent variable, (g) design and data analysis, (h) intervention procedures, and (i) overall general procedures.

Settings

The study was conducted in two rural high school settings located in the southeastern region of the United States. Each school district’s approval was obtained prior to implementation of in the study and IRB approval was obtained (see Appendix A). There were approximately 2000 students enrolled in District A and 95.1% were African-American students, 3.0% Caucasian, and 1.4% Multi-Racial. According to the posted accreditation status on the district website, schools within the district received ratings from the state ranging from B to D for the 2016-2017 school year. There were approximately 3200 students enrolled in District B with approximately 11.38% of the students having an individualized education program (IEP). Approximately 80.44% of
the students were African-American, 18.16% Caucasian, 1.16% Hispanic, and .24% Asian. According to the posted accreditation status, four schools within the district received a C by this accountability label for 2014-2015.

Two special education classrooms were chosen to participate in the study based on administrator nomination. For both classrooms, students spent a total of 50 minutes in the classroom. Based on the results of this pre-assessment, the classrooms were deemed appropriate for this study.

**Participants**

Two teachers providing instruction at the high school level in a special education setting participated in the study. These teachers were recommended by the administrators to participate in the study. There was one teacher serving as an interventionist on each classroom.

Mr. Samuels was an African American male over the age of 50 with a college degree operating as an interventionist. Mr. Samuels indicated that he was a licensed educator by the state department of education, but did not have a degree in education. He reported having a total of 8 years of teaching experience at the high school level. Mr. Samuels had six African American students in his classroom. Five of the six students were between the ages of 15 and 17 years and one student was between 17 and 21 years. Mr. Samuels indicated there were five females and one male in his classroom. All of the students were endorsed as having a special education ruling of Intellectual Disability.

Ms. Johnson, the other interventionist, was an African American female between the age of 40 and 50 years. She indicated that she had three years of teaching experience
with two of those at the high school level. Ms. Johnson also reported she was a licensed educator by the state department of education with a degree in education at the master’s level. Ms. Johnson indicated that she had a total of seven students between the ages of 15 to 17 years in her classroom. Of the seven students, six were male and one was female. Ms. Johnson also indicated that six students were African-American and one was Caucasian. The special education rulings of the students were Emotional Disability, Other Health Impairment, Specific Learning Disability, and Speech/Language Impairment.

There were a total of eight doctoral and educational specialist graduate students used as research assistants to aid in the collection of data. Each graduate student attended the same large public university in the southeastern portion of the United States. The eight graduate students were trained to observe and code data by the primary researcher (see the section on training below).

**Materials and Instruments**

Several materials and instruments were used in the study by the primary researcher. These materials and instruments were used during the screening, training, intervention, and data collection phases. In addition, teachers were asked to complete a demographic questionnaire and a social validity measure. Students were asked to complete a preference assessment. Observers were asked to use the observation sheet to collect data on behavior.
Screening and Training Materials

This section describes materials used in the pre-assessment to screen classrooms for the study. Several materials were used to train teachers and observers about the CBGG intervention procedures. The primary researcher used a guide to assist with training.

**CBGG training guide.** The CBGG Training Guide was used by the primary researcher to facilitate training for the teachers and observers on implementation of the procedures (see Appendix A). The CBGG Training Guide was developed by the researcher using procedural models from previous studies (Mitchel et al., 2015; Wright & McCurdy, 2011). The guide consisted of four major components divided into individual sessions: Consultation, implementation, teacher training, and observer training, respectively. The teacher and observer training sessions were specific to these roles in the study. In addition, scripts were used to outline and explain the CBGG components and model example behavior that were monitored during the consultation and implementation sessions (Mitchell, Tingstrom, Dufrene, Ford, & Sterling, 2015). Scripts helped teachers explain classroom expectations, implementation procedures, and review reinforcer administration by providing the teachers with phrases to use in the classroom.

Each major session (i.e., consultation, implementation, teacher training, and observer training) of the training guide had steps with specific details for the teachers and/or observers to follow. First, the observer training had four steps: (a) Review of consultation and implementation steps, (b) review momentary time sampling procedures,
(c) evaluation of observations, and (d) question and answer session. The observer training results served as the pre-assessment. The steps for consultation included the identification of target behaviors, development of ground rules, and establishment of teams. Implementation steps consisted of the introduction of game to the classroom, calculation of points, and delivery of reinforcement. Lastly, the teacher training session steps included a review of consultation and implementation steps, practice implementation, evaluation of teacher implementation, and question and answer session.

**Teacher training form.** The teacher training form was used to help teachers practice identifying and defining target behaviors, establishing ground rules for target behaviors, identifying appropriate replacement behaviors and establishing positive behavioral expectations (see Appendix A). Using this form, the teachers were required to provide this information for three target behaviors of their choice. This form was used during each training session.

During Mr. Samuels’ training session, he identified the main problem behavior to be playing on the phone (i.e., “stop playing on the phone”). The replacement behavior for this problem behavior was “pay attention to the teacher”.

Ms. Johnson identified tardiness, not bring materials to class, and being talkative during instruction as her problem behaviors. The rules identified for the inappropriate behaviors were “arrive to class on time”, “bring all materials to class”, and “be quiet during instructional time”. Unlike within Mr. Samuels’ classroom, each rule was stated in a positive manner. On-task was named as the replacement behavior and operationally defined to include the teacher identified problem behaviors.
**Teacher training evaluation form.** The teacher training evaluation form was used to assess the teachers’ use of intervention procedures (see Appendix A). This evaluation form was designed to be completed by the primary researcher and it consisted of answering seven close-ended questions regarding the intervention procedures by indicating “yes” or “no”. The content covered by these questions included providing the date, stating rules, posting rules, announcing to the start of the intervention, randomly assigning students, tallying points, and making the prize box available to students. Furthermore, the teacher training evaluation form had a section to include the percentage of steps completed by the teachers during the training.

Both Ms. Johnson and Mr. Samuels successfully completed seven out of seven of the total steps; therefore, no retraining of teachers was needed.

**Observation sheet.** The observation sheet was used to collect on-task and off-task behavior. The observation sheet included a data sheet that indicated 20 minutes of 15-second intervals (see Appendix A). The behaviors and their definitions were provided on the observation sheet. The sheet included a comment box for teachers to state information that they would like for the researcher to know about the day’s intervention.

**Observer training observation form.** In the training, the graduate students watched the same 4-minute video of a classroom that displayed on-task and off-task behavior. The graduate students were all asked to complete the observer training observation form while watching the video. Out of the eight observers, seven had an interrater agreement score above 80%. The observer who did not pass the initial training was retrained once until the goal of more than 80% agreement was achieved.
**Observation training evaluation form.** The Observer Training Evaluation Form was used to assess the observer’s use of the observation techniques and procedures (see Appendix A). This evaluation form was designed to be completed by the primary researcher and it consisted of six close-ended question regarding the data collection techniques. Similar to the Teacher Training Evaluation Form, this form required the primary researcher to indicate mastery by circling “yes” or “no” and provide a percentage for completion of steps. The content of the questions consisted of providing a name, recording the date of observation, listing the classroom number, providing the purpose of observation, recording the time of observation and recording the type of behavior.

Each observer received a 100% in their evaluation. They were observed to write their name, indicate the date of the observation, indicate the classroom number, indicate if the data being collected was for interobserver agreement, indicate the time of the observation, and identify a behavior observed in each interval.

**Intervention**

During intervention, there were several steps and accompanying materials used to implement the CBGG. Teachers were asked to complete a demographics questionnaire. Students were asked to identify their reinforcers. The observers collected data using the observation sheet. Students and teachers were asked to complete a social validity form. Additionally, observers monitored treatment integrity. Measures associated with these steps are described below.

**Demographics questionnaire.** A demographics questionnaire for teachers reported demographic information about the teachers and about their students (see
Appendix B). The information about the teachers that were asked included age of teacher, years teaching at current school, years teaching at current grade level, total years teaching, race/ethnicity of teacher, biological sex of teacher, obtainment of licensure, degree in education, and highest level of education completed. The second portion of the demographic form provided the researcher with information about the classroom. The information that were asked by the researcher about the classroom included the total number of students in the classroom, age of students in the classroom, biological sex of students in the classroom, race/ethnicity group of students, and the type of special education rulings in the classroom.

**Preference assessment.** The preference assessment sheet included a list of reinforcing items for students to rank from one to three with one being their most preferred item (see Appendix C). The items that were used as a reinforcer are study buddy, computer time, break time during class, bag of chips, piece of candy, bottle of soda or juice, opportunity to listen to music, school supplies, extra credit, teacher helper, select homework, select location to complete the assignment, and a hall pass.

**Observation sheet.** Similar to the observation sheet described in the screening and training section of materials section, this observation sheet was used to collect on-task and off-task behavior (see Appendix D). The operational definitions were listed on the observation sheet. The observation sheet included a data sheet that indicates 20 minutes of 15-second intervals. The observers had an opportunity to provide comments to the primary researcher about the day of data collection.
Social Validity

One social validity measure was used to monitor teacher acceptability of the intervention (see Appendix E). This section discusses each measure and provides a brief description of the purpose, scores, and psychometric properties.

**Intervention Rating Profile-15 (IRP-15).** Teachers completed the Intervention Rating Profile-15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985) to assess acceptability of the intervention. The IRP-15 had 15 items regarding acceptability of school based interventions (e.g., the child’s problem behavior was severe enough to warrant use of this intervention, the intervention was consistent with those I have used in the past, or the intervention would be appropriate for a variety of children). The IRP-15 consisted of a 6-point Likert scale and teachers were asked to rate the degree to which they “strongly agree” or “strongly disagree” with each item. High total scores on the overall measure indicated a higher acceptability of the intervention. The total scores could range from 15 to 90. According to Von Brock and Elliott (1987), a score above 52.50 was considered acceptable. The IRP-15 had strong and consistent psychometric properties with internal consistency of .98 (Von Brock & Elliott (1987).

Treatment Fidelity

Two types of treatment fidelity measurement took place during the intervention. The purpose of the treatment fidelity materials was to ensure that the intervention was being implemented with accuracy.

**Observer fidelity checklist.** The observer fidelity checklists were used to monitor observer adherence to the data collection procedures (see Appendix G). The
observers completed a seven item questionnaire. The observer fidelity checklists consisted of the following items: the observer’s name, date of intervention, classroom number, purpose of observation (i.e., interobserver agreement data or intervention data collection); time of observation; type of behavior observed (i.e., on-task or off-task behavior; and rating in each interval. The steps were listed on the checklist and a spot was provided to mark if the behavior occurred, the behavior did not occur, or the behavior occurred but was out of order. The checklist also indicated a place for the observer to total the number of steps that were completed correct. Then, the checklist indicated a place for a total percentage of steps completed correct.

**Treatment integrity.** The treatment integrity checklists were used to monitor teacher adherence to the intervention procedures of at least 80% (Flower, McKenna, Muething et al., 2014). The treatment integrity checklists consisted of seven close-ended statements (see Appendix H). The treatment fidelity checklists included the following items: writing the date of the intervention, stating ground rules, posting ground rules, announcing to the start of the intervention, randomly assigning students, tallying points, and making the prize box available to students. The steps were listed in the previous order and a place to mark if the behavior occurred did not occur, or the behavior occurred but was out of order. The treatment integrity checklists instructed the observer to total the number of steps that were completed. Then, the treatment integrity checklists instructed the observer to calculate the percentage of steps completed.

Using the treatment integrity checklist, treatment integrity were collected in 20% of the baseline and intervention sessions. Treatment integrity was also collected in 33% of the withdrawal sessions. The percentage of implementation fidelity were determined
by dividing the total number of steps followed by the total number of steps possible. Ms. Johnson’s overall treatment integrity was 100% (28 out of the 28 total steps observed). Mr. Samuels’ treatment integrity was 96.43% (27 out of the 28 total steps observed). Mr. Samuels’ had one “occurrences of reminding the students of the expected behaviors, definitions, criteria, and team members”, as reported by him. No re-trainings took place due to a high treatment integrity score.

**Design**

A single subject design was chosen for this study as the majority of the studies examining the effectiveness of the GBG in its original form utilized this design (Flower, McKenna, Muething et al., 2014). Specifically, an ABAB withdrawal design was used in each classroom, which has been used in a majority of previous research designs (Tingstrom et al., 2006). This type of design was also selected because the effect of the intervention were provided twice and teacher were provided with an intervention that the teacher could use after the research study was completed (i.e., ethical problems are avoided; Fraenkel & Wallen, 2003). Baseline (i.e., Phase A) consisted of the teachers’ use of their current classroom procedures for decreasing problem behavior. According to Kratochwill et al. (2012), a minimum of five data points for Phase A was necessary for a phase change because five data points met the most rigorous standards. If there was not a stable or decreasing trend in data after five data points, the researcher moved to Phase B, the intervention condition. The intervention condition (i.e., Phase B) consisted of the implementation of the intervention using CBGG procedures for a minimum of five data points. If there was an unchanging trend, level, and variability after five data points, the
researcher moved to the withdrawal phase. The withdrawal phase had a minimum of three data points with a maximum of five data points (Wright & McCurdy, 2011). While three standard data points is lower than the most rigorous standards, three data points in a phase still meets standards with reservations (Kratochwill et al., 2012). After the withdrawal phase, the intervention condition was repeated for a minimum of five data points. If there was an unchanging trend, level, and variability after five data points, the researcher would have discontinued the study (Kratochwill et al., 2012).

**Dependent Variables**

In order to evaluate the effect of the intervention, the proposed study collected data on two dependent variables, on-task behavior, and off-task behavior. Although the dependent variables were defined below using the literature, the original GBG study by Barrish and colleagues (1969) used the help of the principal and teacher to define the target behavior therefore, the teacher input were considered when developing the final descriptions of dependent variables.

**On-task behavior.** On-task behavior were defined as looking at the teacher or assignment, and communicating with teachers or students verbally after receiving teacher consent (Wright & McCurdy, 2011). These on-task and off-task definitions were verified by the teacher to ensure they fit the characteristics of the classroom.

**Off-task behavior.** Off-task behavior was described as a student disengaging from tasks that are assigned. This may include verbal movements (e.g., talking to other students in the classroom) or the student physically attending to tasks not related to assignments (e.g., moving out of seat, refusing to complete assignments, playing with...
other objects, and putting body parts on other objects or students in the classroom that do not promote completing a task; Wright & McCurdy, 2011).

**Independent Variable**

The independent variable in this study was the CBGG, a class-wide intervention that utilizes both teacher and peer mediated strategies. CBGG, a positive variation of the GBG, was used to increase the number of appropriate behaviors during an instructional period in the classroom (Wright & McCurdy, 2011). Procedures will be discussed later in this chapter.

**Data Analysis**

A single subject design allowed the researcher to make decisions about data using visual analysis (Kazdin, 1982). The data of on-task behavior were recorded and graphed daily and analyzed based on trend, level, and variability. Each classroom had individual graphs to depict the intervention. Each graph depicted the percentage of intervals of total on-task and off-task behavior for the class. Although there is a large debate in the most reliable effect size calculations, to be consistent with previous researchers on interdependent group contingencies (e.g., Mitchell et al., 2015) and the heavy support for Nonoverlap of All Pairs (NAP) in single subject design research NAP calculations were used to monitor on-task behavior. Effect sizes were calculated to demonstrate the improvement in the amount of the disruptive behavior for each classroom by NAP using procedures described by Parker and Vannest (2009). This were used to make decisions across phase changes to show the magnitude of changes across
phases and the rate of changes in behavior (Kazdin, 1982). Calculations were done by this website http://www.singlecaseresearch.org/calculators/nap. Scores between .93 and 1.00 are considered to be strong, scores between .66 and .92 were considered medium, and scores between 0 to .65 are considered weak (Parker & Vannest, 2009). Data analysis was considered with caution when there was no significant change in magnitude (Kratochwill, 1985).

**General Procedures**

The researcher asked the teachers and administrators for permission to participate in the study by completing teacher and administrator consent forms (see Appendix G). Teachers and administrators provided their consent to participate in the study. There were four phases in this study.

**Observer Training**

The primary investigator served as an observer. Then, a total of seven additional observers were trained on the intervention procedures using the CBGG training guide, observation sheet, and observer fidelity checklist. Three of the additional observers were used to collect inter-observer agreement data. The remaining observer was the primary observer in the additional classroom. Each observer was assigned to each classroom where they collected data for the duration of the study. The training of these observers consisted of scoring on-task and off-task behavior for 20-minute observations using momentary time sampling procedures. These individuals will be referred to as researcher within this methodological section.
**Pre-screening and Baseline**

To be included in this study, the classroom needed to be referred by an administrator, volunteered by the teacher and have a maximum average of 30% of the observed intervals for on-task behavior during pre-screening. The researchers collected baseline data and verify classroom eligibility by evaluating the pre-assessment data. No intervention was implemented during this time and the teachers continued their typical classroom management routine. Pre-screening data served as baseline for the study in each classroom (Mitchell et al., 2015). Data were collected on on-task behavior and off-task behavior by two trained researchers using the observation sheet for approximately five school days. The students were not rewarded for the display of the appropriate behavior during this phase. Students were not informed about the purpose of the research study. The teachers completed the demographics form for their classroom.

The researchers continued to collect baseline in each classroom regarding on- and off-task behavior on a daily basis during the instructional period of each phase of the study (Wright & McCurdy, 2011) using the observation data sheet and a momentary time sampling procedure in 15-second intervals for 20-minute sessions throughout baseline and intervention phases (2011). Behavior occurrences were marked at each interval. When graphed, the data will be shown as a total count of disruptive behavior per observation (Lewis, Sugai, & Colvin, 1998). At each interval, the researchers scanned the room for students engaging in on-task or off-task behavior using momentary time sampling procedures.
Teacher Training

After the collection of baseline data, the teachers were trained to implement the CBGG procedures. These teacher trainings were conducted to minimize potential outcome differences (Domitrovich et al., 2015) and occurred during teacher-recommended periods in the respective classroom. The training consisted of a prescribed reading of the pre-developed script including an explanation of the CBGG components and modeling of the intervention steps. During the training session, the teacher practiced introducing the competition and practiced administrating marks on the flipchart. Using the Teacher Training Form, the teachers practiced describing target behaviors, rules using target behaviors, and positive behavioral expectations. Next, using the teacher training evaluation form, the teachers received feedback during an evaluation conducted by the primary researcher about any steps not completed correctly. If the teacher did not complete at least 80% of the steps (i.e., 6 out of 7 steps) correct during the first training, the teacher was re-trained one time (Mitchell et al., 2015). The steps missed during the initial training were re-emphasized during the retraining (Wahl, Hawkins, Haydon, Marsicano, & Morrison, 2016). If the teacher did not meet the 80% or above criteria, then the teacher was not included in the study. All teachers initially identified for the study met inclusion criteria and completed the study. The primary researcher allowed a few minutes for a question and answer session after each training.

Preference Assessment

After the teacher training, the researchers conducted a preference assessment. The teachers were asked to identify the most feasible reinforcers in the classroom from the researcher-created list of available reinforcers. Then, students in the classroom were
asked to rank order their desired reinforcers. Similar to Mitchell and colleagues (2015) reinforcers did not have a large momentary value and the students had the opportunity to choose their rewards upon meeting the criteria each day.

**Caught Being Good Game Procedures**

As described by Wright and McCurdy (2011), teams must meet minimum criteria to win a reinforcer. Each team was provided a description of appropriate target behaviors (Wahl et al., 2016). First, teachers divided the class into two teams of approximately even size. Each student was randomly assigned to a team. Second, teachers explained the intervention to the class and recorded the start time. Third, teachers scanned the classroom at exact times using a timer that notified them of the scanning interval to observe any student who displayed appropriate behavior. The teacher awarded a point to the team to which the student belonged on a flip chart if an appropriate behavior had occurred during the observation. The behaviors and points per team were publicly posted in the classroom. Fourth, during the last five minutes of the class period, the team that met the minimum criteria earned a reinforcer. At the end of the period, the teachers recorded the end time of the intervention, totaled the amount of marks for each team, and provided the reward if criteria were met. The points were awarded daily and no points were carried over from a previous day. The data from the prescreening served as the baseline data in this study. Baseline data was collected for five school days in each classroom.

**CBGG I.** During the first intervention phase, teachers introduced the game on a daily basis with a common phrase, such as “Game On”. The teachers used the training guide to help implement the intervention using similar prompts. Phase one of the
intervention consisted of the implementation of the previously described CBGC procedures. These procedures were repeated for five school days.

**Withdrawal.** During the withdrawal phase, the teachers were asked to refrain from implementing the CBGG and to revert to their previous classroom management strategies. During this phase, students were not informed of the length of the withdrawal phase. The students did not receive prizes for the display of appropriate behavior. This was repeated for three days.

**CBGG II.** During second intervention phase, the teachers again implemented the intervention procedures using the previously described CBGG procedures. This was repeated for three school days.

**Interobserver Agreement (IOA)**

Interobserver agreement was collected for 40% of baseline and intervention sessions, each. It was also collected for 33% of the withdrawal sessions. This exceeded the single subject design minimum criteria of at least 20% (Kratochwill et al., 2012). It was recommended that IOA have an average value between .80 and .90 or at least .60 if measured using Cohen’s kappa (Hartmann, Barrios, & Wood, 2004). Interobserver agreement was calculated by adding the total number of agreements for occurrence and nonoccurrence of the behavior between two researchers, dividing by the total number of intervals, and multiplying by 100 (Mitchell et al., 2015). The data for IOA were collected using the observation sheet.

Similar to treatment integrity, retraining of teachers did not take place during the intervention phases. Observer integrity was measured to be 100% for Ms. Johnson’s
class and 97.96% for Mr. Samuels’ class. Of note, one observer did not put a name on one of the observation sheets.

School psychology doctoral and educational specialist level graduate students were trained observers (referred to as researchers). The researchers used the same data sheet to collect data as the researcher collecting intervention data, which indicated the operational definitions of on-task and off-task behavior. Interobserver agreement was collected using interval by interval procedures. Specifically, IOA was collected for two days within each intervention phase, two days within the baseline phase, and for one day in the withdrawal phase.

Using the observer training observation form, out of the eight researchers, seven researchers had an IOA score above 80%. One researcher had to be retrained and received a subsequent score above 80% during the observer training. For Mr. Samuels, classroom IOA averaged 98.21% (range = 90.00% to 100.00%) of the observed intervals. For Ms. Johnson’s classroom IOA average at 89.64% (range = 83.75% to 97.50%) of the observed intervals. No retraining of observers took place during the intervention phases.

**Social Validity**

Lastly, teachers were asked to complete the acceptability measure. The acceptability measure was evaluated by the primary researcher for completeness. Then, both teachers and students were thanked for their participation in the study.
CHAPTER IV

RESULTS

The purpose of this study was to examine the effects of the CBGG on behavior problems of students in a high school special education classroom. Specifically, the study examined the effect of on-task and off-task behavior. As part of the results, the following sections are discussed in the current chapter: (a) intervention results for Mr. Samuels’ classroom (b) intervention results for Ms. Johnson’s classroom, and (c) social validity measures.

**Intervention Results for Mr. Samuels’ Classroom**

The following section presents the intervention data for Mr. Samuels’ classroom. Results from the preference assessment, baseline, intervention Phase One, three days of withdrawal, and re-implementation of the intervention data are presented.

**Preference Assessment**

A preference assessment was conducted in Mr. Samuels’ classroom and the students identified one reinforcer as the most feasible item. Mr. Samuels identified candy as the reinforcer. The students in Mr. Samuels’ classroom identified Kit Kat bars, Snickers, and chocolate as types of candy they preferred to receive.
Baseline

The primary dependent variable was the percentage of on-task behavior during the 20-minute observation. During the baseline phase, Mr. Samuels’ classroom was observed across five school days. On average, Mr. Samuels’ classroom displayed on-task behavior during 13.50% \((range = 0.00\% - 20.00\%)\) of the observed intervals. Visual analysis displayed a stable trend between the first four data points and a decreasing trend with the addition of the last data point. There was little variability between the data points. Off-task behavior had a stable trend. Mr. Samuels’ classroom displayed off-task behavior an average 86.50% \((range = 80.00\% - 100.00\%)\) of the observed intervals (see Figure 1).

CBGG I

Mr. Samuels’ first intervention phase took place for a total of 5 days. On-task behavior was observed at an average of 84.25% \((range = 62.50\% - 94.00\%)\) of the observed intervals. There was increasing and stable trend in data across the five data points. Off-task behavior displayed an opposing trend with an average of 15.50% \((range = 6.00\% - 37.50\%)\) of the observed intervals (see Figure 1). Based on the results from the NAP calculations, there was positive change, \((NAP = 1.00)\) between baseline and intervention of on-task behavior, which is considered strong.

Withdrawal Phase

During the three-day withdrawal phase, on average, on-task behavior was observed during 46.67% of the observed intervals. The average of off-task behavior was 53.33% \((range = 18.25\% - 73.75\%)\) of the observed intervals. The data points ranged
between 26.25% and 81.25%. The visual analysis suggests there was a large amount of variability and a decreasing trend in on-task behavior (see Figure 1).

**CBGG II**

During the second intervention phase, a trend in data similar to that found in the first intervention phase was observed in this intervention phase. There was little variability observed and the data points were stable. The data for on-task behavior ranged from 77.50% to 92.50% with an average of 91.50% of the observed intervals. The average of off-task behavior ranged between 22.50% and 7.50%, which resulted in an average of 8.5% of the observed intervals (see Figure 1). There was also a strong NAP score (NAP = .933) between the withdrawal phase and second intervention phase.
Summary Analysis

Overall, the results indicate a downward or low trend in data in the baseline and withdrawal phases and an upward, high, or increasing trend in the intervention phases. However, there was some variability noticed between some of the beginning or ending data points within each phase.

**Intervention Results for Ms. Johnson**

The following section will present the intervention data for Ms. Johnson’s classroom. Ms. Johnson’s baseline, intervention phase one, three days of withdrawal, and intervention data were presented.
**Preference Assessment**

Ms. Johnson identified chips and candy as reinforcers; however, when the students were asked to select from these two reinforcers they only selected candy. Chocolate was selected as the most preferred reinforcer for Ms. Johnson’s classroom.

**Baseline**

Similar to Mr. Samuels’ classroom, the primary dependent variable was the percentage of on-task behavior during the 20-minute observation. During the baseline phase, Ms. Johnson’s classroom was observed across five school days. On average, Ms. Johnson’s classroom displayed on-task behavior during 27.75% (range = 23.75%-38.75%) of the observed intervals. Visual analysis displayed a stable trend of on-task behavior between the first four data points. There was little variability between the dependent variable data points. Across the baseline days, off-task behavior averaged at 72.25% (range = 76.25% - 61.25%) of the observed intervals (see Figure 2).

**CBGG I**

Ms. Johnson’s first intervention phase took place across a total of 5 days. On-task behavior was observed at an average of 37.50% (range = 12.50%-62.50%) of observed intervals. There was increasing trend in data across the five data points. There was a large amount of variability between the last data point and the first four data points. Off-task behavior was observed at an average of 62.50% (range = 87.50%- 37.50%) of the observed intervals (see Figure 2). Based on the results from the NAP calculations, there was weak effect (NAP = .58) between the baseline and intervention phases with regard to on-task behavior.
Withdrawal Phase

During the 3-day withdrawal phase, the data points ranged between 20.00% and 25.00% of observed intervals. The average of these data points was 23.33% of observed intervals. The data for off-task behavior ranged between 80.00% and 75.00% of the observed intervals. The average display of off-task behavior in this phase was 76.67% of the observed intervals. The visual analysis suggests there were no variability and a decreasing trend in on-task behavior (see Figure 2).

CBGG II

During the second intervention phase, a steady and increasing trend was observed. On-task behavior data points ranged between 40.00% to 75.00%, with an average of 65.50% of the observed intervals. Off-task behavior ranged between 60.00% to 25% with an average of 34.50% of the observed intervals (see Figure 2). However, there was a large effect (NAP = 1.00) between the withdrawal phase and second intervention phase for on-task behavior.
Summary Analysis

Overall, the results indicate a downward or low trend in desired behavior (i.e., on-task) during the baseline and withdrawal phases and an increasing trend in the intervention phases across both classrooms. However, there were some large increases between the ending and beginning data points of the intervention phases, which suggests there were some variability within these phases. In regards to effect sizes, Mr. Samuels’ had large effects across all treatment phases. Ms. Johnson had a weak effect during the first implementation of the CBGG, which later improved to a large effect during the
second implementation of the CBGG. Effect sizes for both teachers (Table 1) indicated large effects amongst both teachers in the second implementation of the CBGG.

Table 1

*Effect Sizes-On-task Behavior*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Baseline (mean)</th>
<th>CBGG I (NAP)</th>
<th>Effect Size</th>
<th>Withdrawal (mean)</th>
<th>CBGG II (NAP)</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Samuels</td>
<td>13.50</td>
<td>84.25</td>
<td>Large</td>
<td>46.67</td>
<td>91.50</td>
<td>Large</td>
</tr>
<tr>
<td>Ms. Johnson</td>
<td>27.75</td>
<td>37.50</td>
<td>Weak</td>
<td>23.33</td>
<td>65.50</td>
<td>Large</td>
</tr>
</tbody>
</table>

*Note.* Means are expressed in percentages.

**Social Validity**

Both teachers completed the Intervention Rating Profile (IRP-15) to determine the acceptability of the CBGG. Mr. Samuels averaged a 5.00 on the 1-6 Likert scale for each item. There were no other ratings endorsed other than the rating “agree” which was a 5. Ms. Johnson indicated an overall average of 5.73 on the same Likert scale. Ms. Johnson endorsed five items as “agree” and the remaining scores were endorsed as strongly agree (i.e., 4). This suggests that both teachers found the CBGG acceptable with total scores of 75 for Mr. Samuels and 86 for Ms. Johnson.
CHAPTER V

DISCUSSION

The purpose of the current study was to determine the impact of the CBGG on the amount of on-task behavior in a high school special education setting. The discussion is separated into sections regarding the reintroduction to problem, review of the integrity of the data and effect size of the current study, followed by discussions of each of the research questions’ findings, limitations, and ending with overall implications of the study.

Reintroduction to the Problem

Since the reauthorization of special education law, school personnel have often been given responsibility to use positive discipline practices. SWPBS allows school personnel to change the social culture by preventing problem behavior across multiple grades (Sugai & Horner, 2006). Interventions at Tier One consists of the majority of the student population. When concerns like disruptive behavior are prevented at this level, the use of more specific behavioral interventions at more intensive services (Fuchs & Fuchs, 2007) and punitive procedures are reduced (Luiselli et al., 2002). Thus, SWPBS has major implications for improving the classroom environment and shaping appropriate behavior, if school personnel incorporate appropriate and effective interventions that are intended to be implemented in systematic ways, such as those of the SWPBS model.
There is an increasing demand with increasing accountability for teachers to not only provide effective academic instruction for students, but also have a toolkit of classroom management strategies to minimize problem behavior (Eacute & Esteve, 2000). In fact, school personnel have greater responsibilities than they have had in previous years, which includes shaping appropriate social behavior for students with varying levels of behavioral needs, providing mental health services, and educating students with unique intellectual abilities (Eacute & Esteve, 2000). Addressing the behavioral needs of students is now considered just as important as academic instruction because it has been demonstrated that behavioral concerns can negatively impact student social relationships and academic achievement (Farmer & Farmer, 1999). Furthermore, teachers also experience their own mental health concerns when students’ problem behavior is constantly present in their classroom (Hastings & Bham, 2003). Teacher-mediated classroom management strategies have been empirically demonstrated to reduce disruptive behavior and allow more time for academic learning for all students (Hirn & Park, 2012). In order for teachers to be effective and equipped to fulfill the needs of students, teachers must be able to prevent problems that may occur in the classroom setting by using effective classroom management strategies (Hirn & Park, 2012).

As previously mentioned, interventions within the SWPBS vary from those that target specific individuals to those that are applied as a program universally implemented with all students. The interventions can also vary dependent upon the interventionist and the amount and type of students that can benefit from the tier interventions (Tingstrom et
Large-group universal programs allow teachers to focus more time on teaching students.

**Overview of Previous Research**

As previously mentioned, the CBGG is an up and coming large group-based intervention that can be used in Tier One. CBGG allows teachers to identify and teach appropriate behavior of students (Wright & McCurdy, 2011). Unfortunately, although there have been several positive variations of the GBG used to target interventions (Tanol et al., 2010), there is only one study that has utilized the CBGG in a classroom setting (Wright & McCurdy, 2011). The original research study compared the CBGG to the GBG to examine disruptive and on-task behavior of general education elementary students. Surprisingly, a difference between the two interventions was not demonstrated across the behaviors, but positive results were confirmed in each elementary classroom. There are numerous studies that have indicated that the GBG is effective across various age groups (Tingstrom et al., 2006). However, similar to the CBGG there is a significant lack of GBG studies using two groups of students: (a) high school populations and (b) children with disabilities. Previous research using high school populations with the GBG targeted off-task behavior, out of seat behavior, aggression, and inappropriate vocalizations (Kleinman & Saigh, 2011; Mitchell et al., 2015). Flower, McKenna, Muething et al (2014) is the only study to utilize the GBG with high school students with disabilities in a classroom setting. In each of these studies, the GBG was modified from a game into competition between teams of student as a means of adapting to the interests of high school students. In sum, few studies exist for support of the CBGG (Wright &
McCurdy, 2011). In fact, no studies have used the CBGG to intervene on high school students or students with disabilities at any level.

Considering that behavioral problems are present with multiple groups and ages of students, the need to have a plethora of effective Tier One interventions that incorporates multiple classroom management strategies is high. It is also crucial that these Tier One interventions enhance the learning of more diverse groups of students. The literature is extensive for the GBG for reducing behavioral problems (Tingstrom et al., 2006). While there is support that the CBGG has worked to reinforce appropriate behavior in the one research study, this intervention has not yet been evaluated with high school students or in students with disabilities. Thus, the purpose of this study was to fill the gap in classroom management interventions by answering two research questions.

**Overall Findings**

Similar to the original research conducted by Wright and McCurdy (2011), the CBGG results indicated that there were positive and clear effects demonstrated in both special classrooms. There were steady and positive trends in desired behavior (i.e., on-task) data points within the intervention phase in each classroom. There were more significant effects in the students’ on-task behavior in Mr. Samuels’ class than in Ms. Johnson’s. Despite the differences, the investigation extended the literature in the CBGG. The learning curve of appropriate behavior effects were clearly slower in Ms. Johnson’s classroom than in Mr. Samuels’.

Further, the teachers’ background in education was significantly different. Mr. Samuels indicated that he did not have a degree in education, but had taught for many
years; whereas, Ms. Johnson indicated she had a master’s degree in education but only had a few years of experience. These findings suggest that years of experience may not be a critical component to implement the CBGG because both interventionists produced effective results. Despite the differences between the classroom teachers, the findings are similar to previous studies that examined high school special education classrooms (Flower, McKenna, Muething et al, 2014). These results suggests that the CBGG may be crucial tool for early career teachers.

**Research Question 1: On-task Behavior**

The first research question asked if the CBGG would increase the percentage of on-task behavior in a high school special education classroom. Specific to Mr. Samuels’ classroom there were dramatic increases in on-task behavior between baseline and the first intervention phase and between the withdrawal phase and second intervention phase. During the withdrawal phase an immediate decrease in on-task behavior was observed between the first three data points, which suggests that the presence of the intervention was necessary to maintain the same amount of on-task behavior. Mr. Samuels’ class average of on-task behavior demonstrated the highest average for this behavior during both intervention phases. All intervention phases displayed an increasing trend in on-task behavior.

In Ms. Johnson’s classroom, positive effects were also observed. In fact, during baseline of Ms. Johnson’s classroom, on-task behavior was steady; however, when the CBGG was implemented in the intervention phase there was a variable trend noted, with significant differences between the lowest amount of on-task behavior displayed and the highest amount of on-task behavior during this phase. The last three data points of the
CBGG suggested that the intervention was most effective towards the end of the phase because students were on-task for a high amount of intervals observed. Overall, both classrooms had favorable results in support of the CBGG increasing the occurrence of on-task behavior for students.

During the implementation of the CBGG, teachers typically used a cue on their electronic device in the classroom to signal when to observe the students’ behavior. In Mr. Samuels’ classroom, this announcement notified the entire class that he was attending to appropriate behavior. Ms. Johnson’s class did not have this same notification that appropriate behavior was about to be monitored. Although Mr. Samuels’ classroom had larger effect sizes, the results suggest that students may have portrayed appropriate behavior in order to receive reinforcement at the end of the recording period. Further, perhaps there were differences in the data because students were aware that Mr. Samuels was monitoring their on-task behavior.

**Research Question 2: Off-task Behavior**

Another question for this study was to determine the effect of off-task behavior on the CBGG. The off-task behavior for Mr. Samuels’ classroom occurred at very high rates during the baseline phase. When the CBGG was implemented, there was a significant and quick decrease in off-task behavior. The lowest amount of off-task behavior was displayed in the last 3 days of the CBGG intervention. Off-task behavior was the highest during the baseline phase, but never reached the same level during any other phase for Mr. Samuels.
Unlike Mr. Samuels’ data, Ms. Johnson’s classroom showed a decrease in inappropriate behavior overtime, as opposed to more significant decreases in trend for inappropriate behavior within a phase. Also, the overall amount of off-task behavior in Ms. Johnson’s classroom was lower than that in Mr. Samuels’ classroom. It could be that there were novelty effects present in Mr. Samuels’ classroom.

**Interobserver Agreement and Treatment Fidelity**

In regards to IOA, both teachers were able to accurately rate students’ on-task behavior in their classrooms. Both teacher’s IOA data were above 80.00%, which demonstrated both teachers were able to record the correct amount of on-task behavior in their classrooms. There were certain critical steps (e.g., step one or two) that were missed by both teachers, but overall both teachers were able to meet the threshold to prevent a retraining of the intervention. Similar to the findings of Medland and Stachnik (1972), the critical portions of the GBG included indicating when the game was being implemented and clearly identifying the rules. Although agreement was consistent across the interobservers and the teachers, the differences may explain why students were not always on-task.

There was high integrity between the teachers and observers during the data collection. However, in both classrooms there were noticeable differences between effects of these interventions. According to the demographic forms, the general make up of students between Mr. Samuels’ classroom and Ms. Johnson’s classroom was different. One classroom had a mixture of special education rulings; whereas, the other classroom was entirely composed of children who were identified as having an Intellectual
Disability. Although the impact of specific special education rulings has not been studied in the GBG or CBGG literature, some students with disabilities with greater cognitive and educational impacts may require more teacher attention to accommodate any behavioral differences (Ysseldyke, Thurlow, Christenson, & Weiss, 1987).

**Treatment Acceptability**

The acceptability of the CBGG was rated to fall in the acceptable range. Teachers endorsed that the CBGG intervention was beneficial, likeable, and usable. Similar to previous literature on interdependent group contingencies, teachers agreed with the feasibility of the intervention (Tingstrom et al., 2006; Wright & McCurdy, 2011). Intervention results such as the ratings endorsed by Mr. Samuels and Ms. Johnson are significant because previous studies rarely used a treatment acceptability measures (Tingstrom et al., 2006). Additionally, it should be noted that despite the differences in effect sizes, both teachers provided support for the CBGG as a classroom management strategy. This is important because it has implications for success in future studies.

**Limitations**

Although the CBGG was effective, several specific limitations should be discussed. First, the timing of implementation of CBGG during the school year and the length of time the intervention took during class may have affected its effect. Specifically, CBGG was used during the spring semester of the school year. The spring semester for high school students is a critical time in these specific rural high school districts due to state testing and the end of the school year social activities. It was
reported by both teachers that the size of the classroom had decreased from the beginning of the trimester due to suspensions or expulsions at the time the CBGG was implemented. Student behavior in each classroom may have been different if these peers had been in the classroom. Further, students may have been distracted due to important end-of-the-year projects and examinations that may have been their focus. It is unknown if the results would have been different if the intervention had been implemented earlier in the school year. Furthermore, CBGG was only implemented for 20 minutes daily in each classroom during intervention phases; however, the class period was approximately 50 minutes. Unfortunately, it is unknown how students or teachers may have responded to the CBGG if implementation had been extended across the entire class period. Similarly, the number of days spent in each phase may have affected the effect of CBGG. Specifically, longer phases or a follow up phase may have altered results.

Second, the impact CBGG may have been affected by student and teacher characteristics. For example, although the interventions were implement at different times for the two classrooms. Ms. Samuels’ classroom period was towards the end of the day; whereas, Ms. Johnson’s classroom period was the period before lunch. It is possible that the specific timing of the intervention may have affected its effective. Specifically, students in Ms. Johnson’s students may have been tired at the end of the day (Taras & Potts-Datema, 2005) and Mr. Samuels’ students may have performed differently because they were hungry (Taras, 2005). While a strength of this study was that it demonstrates that the CBGG is effective for students with disabilities, a limitation is that most of the students in each classroom were from a similar socioeconomic and racial background with a similar disability. This limits how the intervention may benefit individuals who
are not from similar statuses. Furthermore, this study used students who were identified as needing services under a special education ruling and had some impact their educational performance. In the current study, students had to understand their classroom tasks/assignments or they would be considered off-task because they could not ask for help from a peer. Finally, related to teacher characteristics, given that students had a history of displaying a large amount of problem behavior before the intervention of this study, the two teachers may have experienced frustration or ‘burn-out’ and were not performing to the best of their ability when implementing the intervention (Hastings & Bham, 2003).

A third limitation is related to the preference assessment. In the current study, the researchers first asked the teachers which items were most feasible before asking the students to identify their reinforcers. It is possible that students may have wanted other more desired items. Student-preferred reinforcers may have had a different impact on the display of on-task behavior because the reinforcers could be more potent.

The mechanism in which data was collected may have altered results. A momentary time sampling procedure was used to collect data. Momentary time sampling procedures likely lead to an underestimation of students’ behavior, which could have influenced the overall results of the intervention.

Lastly, it should be noted that the length of the withdrawal phase could have been increased. As previously mentioned, the withdrawal phase met current Standards with reservations of three data points in the phase (Kratochwill et al., 2012). However, in order to meet the highest standards of five data points in the withdrawal phase there should have been more school days.
Implications

As previously stated, the implementation of the CBGG in a high school special education setting was effective in both classrooms. There are some implications that can be drawn from these results. First, the CBGG appears to have similar initial results as the GBG in its research history. The CBGG can be an effective intervention for managing challenging behaviors, specifically disruptive and off-task behaviors. If the CBGG is implemented, teachers will be able to focus more time on their other responsibilities and less time disciplining students. This intervention provides promise for increasing instructional time.

The fact that the results of the CBGG and the extensive research of the GBG has shown positive results after three weeks of implementation is noteworthy. This is important to note because it demonstrates that the CBGG is not only effective, but the results suggest that students respond quickly to reinforcement procedures. It also suggests that teachers may be less likely to experience stress related to disruptive students and that students would learn how to behave in the classroom. This is a particularly important aspect of the CBGG because students need to be able to know how to act in the school setting and show high rates in behaving in such a manner; in contrast to implementation of the GBG in which students are reinforced for low rates of inappropriate behavior.

In regard to the interventionists, it should be noted that previously the CBGG was implemented using teachers with less than three years of experience but included a teacher training component (Wright and McCurdy, 2011). One of the teachers in the current had three years of experience and possessed a degree in Education; whereas, the
other teacher reported having eight years of experience and no degree in education. Previous studies using the GBG have demonstrated that school librarians, student teachers, and lunchtime staff can also implement an interdependent group contingency (Flower, McKenna, Bunuan et al., 2014). Actually, in the majority of these studies, teacher trainings were rarely implemented which suggests that the GBG and the CBGG are relatively easy whole class interventions that do not require training (2014). The CBGG intervention should be a considerable option when teachers are implementing whole class interventions.

Another implication to consider is the possibility of a variety of school personnel to use the CBGG. While teachers have historically been the interventionists in the GBG or the CBGG, previous research has demonstrated other professionals may benefit from the CBGG (Darch & Thorpe, 1977). Participants in this study showed that a degree in education was not necessary and neither was an interventionist’s years in teaching. Therefore, the CBGG may be a viable option for individuals who frequently interact with students in a school setting but by nature are community mental health counselors, school counselors, or even librarians.

Despite the potential for intervention agents to be counselors, librarians, or even cafeteria workers, it should be noted that there were some key components that must be implemented in order for the CBGG to be successful. Although there is no literature that has identified those key components of the CBGG, the GBG literature has demonstrated that the two key components of the GBG which were the identification of rules (i.e., inappropriate behaviors) and a counting system is necessary for the GBG to be the most effective.
It also may be important to note that the systematic application of the CBGG in this study was in its most basic format. That is to say, teachers were able to look at the classroom and identify if an appropriate behavior was occurring. In the current study, teachers did not have to determine if a behavior occurred several times in one interval nor did they have to engage in extra observational techniques to monitor behavior. Although there were several future directions, it is important to note that the procedures in this application of the CBGG may be an easier way for teachers to promote appropriate behavior in a classroom.

**Future Directions**

The CBGG is in its infancy when compared to the related GBG, or other previously used packaged interdependent group contingencies. In result, there are several areas of growth for the CBGG. First, this is one of only a few studies using the CBGG. This particular research incorporated older students with disabilities. However, there is a need for additional research of the effects of CBGG with general education elementary aged students, general education middle school students, and special education students at both levels.

Second, it may be important to examine the CBGG in comparison or in combination of other classroom management strategies such as self-management techniques. Traditionally, the CBGG employs teachers as the change agents but it may be critical to determine if a self-management strategy is more effective or if students prefer to monitor their own groups. Research has demonstrated that high school students benefit from autonomy because it increases responsibility (Allen, Hauser, Bell, &
O’Connor, 1994; Smith, Ito, Gruenewald, & Yeh, 2010). Allowing students to be more accountable and rate their own behavior may improve results at a more efficient or more effective rate.

Third, Witt and Elliott (1985) found there was a strong positive relationship between treatment effectiveness, treatment integrity, treatment use, and treatment acceptability. In the current study, both teacher ratings were in the acceptable range on the IRP-15. However, within the GBG literature and the CBGG literature base only few studies have used validated or social validity measures (Barrish et al., 1969; Darveaux, 1984; Davies & White, 2000; Saigh & Umar, 1983; Salend et al., 1989; Tingstrom, 1994). Because the CBGG literature is developing, the application of social validity measures in future studies is imperative. If the social validity measures of the CBGG continue to demonstrate high acceptability and support for the use of this interdependent group contingency, then other interventionists are more likely to use the intervention.

Fourth, future studies may also want to examine academic performance. Academic performance and student behavior have been identified as having a strong relationship (Finn et al., 1995). The current study did not examine how the students performed on their academic tasks during implementation, but it is believed that students may have improved their performance because more on-task behavior was being displayed. In summary, more research is warranted to determine the effectiveness and efficiency across behaviors, time, and unique characteristics within a classroom.

Lastly, although the researcher only sought to examine the impact of the CBGG in two classrooms, it is difficult to determine if similar results would have been displayed if other strong single subject research designs were used. An ABAB design is most
frequently used in the CBGG and GBG literature, however, it is difficult to determine if similar results would have been produced in a design such as multiple baseline. Ethically, given that the intervention was improving behavior in the current study, future studies should determine if a change in intervention is justified.

**Summary**

The CBGG was implemented to examine its impact on the engagement in on-task behavior in a high school special education classroom. Visual analysis suggested that the CBGG was effective in increasing on-task behavior and decreasing off-task behavior across phases within both classrooms. These results add to the current literature of the CBGG as an effective classroom management strategy. In addition, it provides an additional resource for teachers to use to improve their classroom management skills. This intervention should not only be used in school systems that are using the tier system, but also in classrooms where teachers want to implement teacher mediated strategies to manage a classroom. When implementing the CBGG in schools that are using the SWPBS, the CBGG is effective as a Tier I intervention. Clearly, the CBGG easily targets multiple students in a classroom, requires little to no additional instructional time, and is cost effective. CBGG also uses behavioral strategies such as positive reinforcement, contingency management, and peer modeling, which have all demonstrated to improve the behavior of students. CBGG is unique and could be a major driving force for the SWPBS because it emphasizes the positive school environment that this tier system utilizes.
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APPENDIX A

SUPPLEMENTARY MATERIALS
Caught Being Good Game Training Guide
Caught Being Good Game Training Guide

1. Consultation Steps for Caught Being Good Game Initial Procedures
   a. Objective: The purpose of this section is to introduce The Caught Being Good Game. In this section, you were provided with general operating procedures necessary for a successful intervention. You will learn how to identify target behaviors, develop ground rules and establish teams.

   b. Step One: Identification of Target Behaviors
      i. Make a list of the top three (3) inappropriate behaviors in the classroom
         1. Examples: hitting, tardiness, yelling
         2. Avoid using behavioral labels that are difficult to define, such as disrespectful behavior. Such labels may include a variety of behaviors, which have different meanings from person to person and across settings. Instead of using disrespectful, you may want to use talking back, rolling of eyes, walking away, profanity, etc.

      ii. Develop Rules including the three (3) inappropriate behaviors
         1. Examples: Hitting: Don’t touch other people
         2. Examples: Tardiness: Be on-time
         3. Examples: Yelling: Use inside voice

   c. Step Two: Development of Behavioral Expectations
      i. State ground rules in a positive and specific manner (what behaviors would you like to see in replacement of the inappropriate behaviors)
         1. Examples: Hitting: Keep Hands, feet, and objects to self
         2. Examples: Tardiness: Arrive to class before the second bell
         3. Examples: Yelling: Raising hand to speak to teacher or to classmate

         *Remember behaviors should be observable. Also, be sure to define what they mean without using the word in the definition*

      ii. Teach rules to the class
         1. Teaching the rules is a critical stage in the first session. Everyone wants to know what it means to be good. Be sure to explain to the student clear ways and behaviors you are looking for. Remember The Caught Being Good Game allows teacher to monitor appropriate behavior. Explain what appropriate behavior looks like. Have students demonstrate.

      iii. Post rules in the classroom
         1. The rules should be posted in the classroom for everyone to see. Ideally, they should be posted on the flipchart that is
d. *Step Three: Establishment of Teams*
   i. Split the class in two groups by randomly assigning A or B to each student
   ii. Rearrange desks to new groups of A and B
   iii. State rules in the classroom
   iv. Allow students to ask questions

2. **Implementation of Caught Being Good Game**
   a. **Objective:** The purpose of this section is to learn how to collect data. In this section, you will use a flipchart, timer, and a writing utensil. You will learn what to say during certain parts of the intervention, when to monitor team, and how to score teams.
   b. **Step One: Introduction of Game to Classroom**
      i. Post flipchart with rules and team at the beginning of the class period
      ii. Announce to the class that their behavior is being monitored.
         1. Example: Say “Game On. Your time starts now”
         *Be sure to start timer*
      iii. Remind students of the minimum criteria.
         1. Example: Say, “Class, each team has to have 15 marks to get a prize.”
      iv. Mark the team that shows appropriate behaviors when you are notified with the timer
         1. Example: When you are cued, look up, and say what appropriate behaviors are displayed, say “Team A is doing a good job being on –task”
      v. At the end of the game when there are 5 minutes left in the class, stop data collection
         1. Say “Game off”
   c. **Step Two: Calculation of Points**
      i. Count the number of points for each team
         *Write total points on the flip chart*
         1. Say “Team 2 you earned a prize. Teams we were playing this game again on the next school day. Let’s try to be above the minimum criteria next time.”
   d. **Step Three: Delivery of Reinforcement**
      i. Allow winning team to select reinforcer from prize box
         1. Place prize box in front of the class
         2. Congratulate winning team or teams
         3. Allow winning teams to choose reinforcer

3. **Teacher Training Procedures**
   a. **Objective:** The purpose of this section is to provide steps necessary for a teacher training. This section were used during the beginning of the intervention. It will help teachers be in agreement with how to implement
the intervention.
b. *Step One: Review Parts 1 & 2 of manual: Introduction and Data Collection*

c. *Step Two: Practice Implementation of CBGG*
   i. State rules and start timer  
   ii. Announce to class  
   iii. Score behavior  
   iv. Tally Points  
   v. Deliver Prizes

d. *Step Three: Evaluation of Teacher Implementation*
   i. Score practice sessions using treatment integrity form  
   ii. Write the total number of steps appropriately followed.  
   iii. Calculate percentage of integrity  
   iv. If percentage is below 80%, provide feedback, then repeat steps one through three until minimal criteria is met.

e. *Step Four: Question and Answer Session*

4. Observer Training Procedures

a. Objective: The purpose of this section is to allow observers to have formal training on momentary time sampling data collection. This portion is important because it allows observers to practice recording data for interobserver agreement.
b. *Step One: Review Parts one and two of guide:*

c. *Step Two: Review momentary time sampling procedures*
   i. Overview of Definitions  
   ii. Watch video of Momentary Time Sampling
      https://www.youtube.com/watch?v=TXNE3I3jWTY  
   iii. Practice collecting data using momentary time sampling

d. *Step Three: Evaluation of Observations*
   i. Score practice sessions of observer fidelity treatment checklist and interobserver agreement  
   ii. Write the total number of steps appropriately followed. If it is below 80%, than repeat steps one through three until minimal criteria is met*  
   iii. Write the number value of interobserver agreement. If it is below 80%, provide feedback, than repeat steps one through three until minimal criteria is met*

e. *Step Four: Question and Answer Session*
Teacher Training Form

I. Target Behaviors: Please identify three inappropriate behaviors you may see in your classroom.

1.______________________________________________________________________
2.______________________________________________________________________
3.______________________________________________________________________

II. Ground Rules using Target Behaviors: Please identify three ground rules using inappropriate behaviors.

1.______________________________________________________________________
2.______________________________________________________________________
3.______________________________________________________________________

III. Positive Behavioral Expectations: Please identify three replacement behaviors and three positively stated ground rules:

1.______________________________________________________________________
2.______________________________________________________________________
3.______________________________________________________________________
Teacher Training Evaluation Form

Evaluator:__________ Date of Evaluation:_________ Observer Trainer

Name:__________

1. Did the teacher put the date on the practice flipchart?
   Yes              No

2. Did the teacher state the ground rules to the class?
   Yes              No

3. Did the teacher announce to the class the beginning of the game?
   Yes              No

4. Did the teacher post the classroom rules?
   Yes              No

5. Did the teacher randomly assign the students to a team?
   Yes              No

6. Did the teacher tally the number of points of each team with the researcher provided example?
   Yes              No

7. Did the teacher place the prize box on the table?
   Yes              No

Total percentage of steps completed= _____/7
Observer Training Observation Form

<table>
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<tr>
<th>Observer Name:</th>
<th>Date of Observation:</th>
<th>Classroom Number:</th>
<th>IOA?</th>
<th>Time of Observation:</th>
</tr>
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</table>

**Off-task Behavior (OFF):** The teacher or other students will define off-task behavior as a student disengaging from tasks that are assigned. This may include verbal movements (e.g., talking to other students in the classroom) or the student physically attending to tasks not related to assignments (e.g., moving out of seat, refusing to complete assignments, playing with other objects, and putting body parts on other objects or students in the classroom that do not promote completing a task; Wright and McCurdy, 2011).

**On-task Behavior (ON):** On-task behavior will be defined as looking at the teacher or assignment, and communicating with teachers or students verbally after receiving teacher consent (Wright and McCurdy, 2011).

**Directions:** Circle ON or OFF if the behavior occurred during the 20-minute observation period.

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Observer Training Evaluation Form

Evaluator: _____ Date of Evaluation: _____ Observer Trainer Name: _________

1. Did the observer write their name on the observation sheet?
   Yes       No

2. Did the observer indicate the date of the observation?
   Yes       No

3. Did the observer indicate the classroom number on the observation sheet?
   Yes       No

4. Did the observer indicate if the observation was to collect IOA?
   Yes       No

5. Did the observer indicate the time of the observation?
   Yes       No

6. Did the observer indicate that on-task or off-task behavior was recorded for each interval?
   Yes       No

Total percentage of compliance and integrity= _____/6
APPENDIX B

DEMOGRAPHICS QUESTIONNAIRE
Tell us about yourself

Teacher’s Name: __________________________________________________

Age Range:

☐ 20-30
☐ 30-30
☐ 40-50
☐ 50 and above

Years teaching at current school:____________________________

Years teaching at grade level:_____________________________________

Total years teaching:______________________________________________

1. Check the option that best describes your race/ethnicity.
   ☐ African American
   ☐ Asian American
   ☐ Caucasian
   ☐ Hispanic
   ☐ Native American
   ☐ Other

2. Check the option that best describes your biological sex.
   ☐ Male
   ☐ Female

3. Are you a licensed educator by the state educational agency in which you work?
   ☐ Yes
   ☐ No

4. Do you have a degree in education (i.e., elementary, secondary, special education, educational leadership, etc.)?
   ☐ Yes
   ☐ No

5. Please indicate your highest level of education completed in Education
   ☐ High school/ GED
   ☐ College
   ☐ Masters
   ☐ Educational Specialist
   ☐ Doctoral
Tell Us About Your Classroom

6. Indicate the total number of students in the classroom of interest:

__________________

7. Please indicate the number of the students represented in the age groups listed below.
   - ☐ 12-14_____
   - ☐ 15-17_____  
   - ☐ 17-21_____  
   - ☐ over 21_____

8. Please indicate the number of students represented in each biological sex group.
   - ☐ Male_____
   - ☐ Female_____  

9. Please indicate the number of students represented in each racial/ethnic group.
   - ☐ African American_____
   - ☐ Asian American_____
   - ☐ Caucasian_____
   - ☐ Hispanic_____  
   - ☐ Native American_____  
   - ☐ Other_____  

10. Check the appropriate box (es) below to indicate all special education rulings present in the classroom of interest
    - ☐ Autism
    - ☐ Deaf/Blindness
    - ☐ Deafness
    - ☐ Emotional Disability (EmD)
    - ☐ Intellectual Disability
    - ☐ Multiple Disabilities
    - ☐ Other Health Impairment (OHI)
    - ☐ Orthopedic Impairment
    - ☐ Specific Learning Disorder (SLD)
    - ☐ Speech/Language Impairment
    - ☐ Traumatic Brain Injury (TBI)
    - ☐ Visual Impairment
    - ☐ Hearing Impairment
    - ☐ None
Preference Assessment

Below is a list of different items that students frequently enjoy receiving as prizes. Please rank these items to indicate your three most preferred items on this list (i.e., a “1” should be placed by the item that you would prefer to have the most out of all the items on this list).

1. Select a friend as a study buddy to work with on an in class assignment
2. Earn 5 minutes of computer time
3. Eat lunch with a preferred adult
4. Earn a 5-minute break from class (at a time agreed upon from teacher)
5. Earn 1 bag of chips (indicate brand and flavor)
6. Earn 1 piece of candy (indicate type)
7. Earn 1 drink pass (indicate type and flavor)
8. Listen to music using headphones while completing one assignment
9. Earn 1 school supply/item
10. Earn 5 points extra credit on 1 assignment
11. Be the teacher’s helper for the class period
12. Select the homework assignment for the class (teacher will provide options)
13. Choose a list of supervised school locations to complete an independent assignment
APPENDIX D

OBSERVATION SHEET
### Off-task Behavior (OFF):
The teacher or other students will define off-task behavior as a student disengaging from tasks that are assigned. This may include verbal movements (e.g., talking to other students in the classroom) or the student physically attending to tasks not related to assignments (e.g., moving out of seat, refusing to complete assignments, playing with other objects, and putting body parts on other objects or students in the classroom that do not promote completing a task; Wright and McCurdy, 2011).

### On-task Behavior (ON):
On-task behavior will be defined as looking at the teacher or assignment, and communicating with teachers or students verbally after receiving teacher consent (Wright and McCurdy, 2011).

### Directions:
Circle ON or OFF if the behavior occurred during the 20-minute observation period.

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APPENDIX E

SOCIAL VALIDITY MEASURE
Intervention Rating Profile-15

Intervention Rating Profile (IRP-15)

The purpose of this questionnaire is to obtain information that will aid in the evaluation of the intervention for _______. Please circle the number which best describes your agreement or disagreement with each statement.

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<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
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1. This was an acceptable intervention for the child's problem behavior.

2. Most teachers would find this intervention appropriate for problem behaviors.

3. This intervention was effective in changing the child's problem behavior.

4. I would suggest the use of this intervention to other teachers.

5. The child's problem behavior was severe enough to warrant use of this intervention.

6. Most teachers would find this intervention suitable for dealing with the child's problem behaviors.

7. I would be willing to use this intervention again.

8. This intervention did NOT result in any negative side-effects for the child.
9. This intervention would be appropriate for a variety of children.

10. This intervention was consistent with those I have used in the past.

11. This intervention was a fair way to deal with the child's problem behavior.

12. This was reasonable for the child's problem behavior.

13. I liked the intervention.

14. This intervention was beneficial in understanding this child's problem behavior.

15. Overall, this intervention was beneficial for the child.

APPENDIX F

IRB APPROVAL
NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: April 24, 2017
TO: Reece Martin, M.S., Counsel Ed Psych & Foundation
FROM: Jodi Roberts, HRPP Officer, MSU HRPP
PROTOCOL TITLE: An Examination of the Caught Being Good Game in a High School Special Education Setting
PROTOCOL NUMBER: IRB-17-176
Approval Date: April 24, 2017 Expiration Date: April 28, 2018

This letter is your record of the Human Research Protection Program (HRPP) approval of this study as exempt.

On April 24, 2017, the Mississippi State University Human Research Protection Program approved this study as exempt from federal regulations pertaining to the protection of human research participants. The application qualified for exempt review under CFR 46.101(b)(2).

Exempt studies are subject to the ethical principles articulated in the Belmont Report, found at www.hhs.gov/ohrp/regulations-and-policy/belmont-report.

If you propose to modify your study, you must receive approval from the HRPP prior to implementing any changes. The HRPP may review the exempt status at that time and request an amendment to your application as non-exempt research.

In order to protect the confidentiality of research participants, we encourage you to destroy private information which can be linked to the identities of individuals as soon as it is reasonable to do so.

The MSU IRB approval for this project will expire on April 28, 2018. If you expect your project to continue beyond this date, you must submit an application for renewal of this HRPP approval. HRPP approval must be maintained for the entire term of your project. Please notify the HRPP when your study is complete. Upon notification, we will close our files pertaining to your study.

If you have any questions relating to the protection of human research participants, please contact the HRPP by phone at 662.325.8394 or email irb@research.msstate.edu. We wish you success in carrying out your research project.

Jodi Roberts

Review Type: EXEMPT
IRB Number: IORE0000467
NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: April 28, 2017
TO: Reeve Morton, M.S., Counsel Ed Psych & Foundation
FROM: Josh Roberts, HRPP Officer, MSU HRPP
PROTOCOL TITLE: An Examination of the Caught Being Good Game in a High School Special Education Setting
PROTOCOL NUMBER: IRB-17-176
Approval Date: April 28, 2017
Expiration Date: April 28, 2018

Your amendment request for the protocol listed above have been approved. The proposed change(s), as described in the amendment, have been approved. You are approved to proceed with your research as modified. If necessary, a stamped copy has been uploaded in the Attachment section. Please use this letter and the stamped copy as verification of the approval.

This approval is issued under Mississippi State University's Federal Wide Assurance 00000647 with the Office for Human Research Protection (OHRP).

Please direct any questions about the IRB's actions on this project to the HRPP at 325.3294 or info@research.msstate.edu.

Josh Roberts
APPENDIX G

OBSERVER FIDELITY CHECKLIST
Observer Fidelity Checklist

Name and Date:

Condition: Baseline  Intervention1  Withdrawal  Intervention2

Person Conducting Probe:

Classroom Number:

Time of Observation:

Directions: Put an “X” in the underline space is the step occurred and the procedures
were followed accurately. Put an “O” if the procedures were not followed accurately. Put
a “S” if the behavior was followed but out of order. You may write comments in the
comment box if you noticed anything significant happened during the session.

<table>
<thead>
<tr>
<th>Put X, O, or S in the space below</th>
<th>Caught Being Good Game Daily Steps</th>
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<tr>
<td></td>
<td>1. Did the observer write their full name on the observation sheet?</td>
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<td>2. Did the observer indicate the date of the observation?</td>
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<td>3. Did the observer indicate the classroom number on the observation sheet?</td>
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<td>4. Did the observer indicate if the observation was to collect IOA?</td>
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<td>5. Did the observer indicate the time of the observation?</td>
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<td>6. Did the observer indicate that on-task or off-task behavior was recorded for each interval?</td>
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<td>7. Did they complete the observation form for the entire 20 minutes?</td>
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</table>

Total Steps Completed

Observer Comments
Treatment Integrity Checklist

Date:

Condition: Baseline  Intervention1  Withdrawal  Intervention2

Name of Observer Collecting Data:

Classroom Number:

Game Start Time:

Number of Marks for Team A:

Number of Marks for Team B:

Directions: Put an “X” in the underline space is the step occurred and the procedures were followed accurately. You may write comments in the comment box if you noticed anything significant happened during the session.

<table>
<thead>
<tr>
<th>Put X in the space below</th>
<th>Caught Being Good Game Daily Steps</th>
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<tr>
<td></td>
<td>1. Post flipchart with rules and team at the beginning of the class period.</td>
</tr>
<tr>
<td></td>
<td>2. Announce to the class that their behavior is being monitored.</td>
</tr>
<tr>
<td></td>
<td>3. Record Start Time and Start Timer.</td>
</tr>
<tr>
<td></td>
<td>4. Remind students of the expected behaviors, definitions, criterion, and team members.</td>
</tr>
<tr>
<td></td>
<td>5. Mark the team that shows appropriate behaviors when you are notified with the timer.</td>
</tr>
<tr>
<td></td>
<td>6. Tally points of each team at the end of the period.</td>
</tr>
<tr>
<td></td>
<td>7. Deliver reinforcers from prize box to the winning team (s).</td>
</tr>
</tbody>
</table>

Total Steps Completed with X: /7

Teacher Comments