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Evaluation of a Positive Version of the Good Behavior Game Utilizing ClassDojo Technology in Secondary Classrooms

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EVALUATION OF A POSITIVE VERSION OF THE GOOD BEHAVIOR GAME

UTILIZING CLASSDOJO TECHNOLOGY IN SECONDARY CLASSROOMS

by

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ABSTRACT

EVALUATION OF A POSITIVE VERSION OF THE GOOD BEHAVIOR GAME UTILIZING CLASSDOJO TECHNOLOGY IN SECONDARY CLASSROOMS

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Appropriate and effective classroom management skills are critical in supporting students' academic, social, and behavior development in schools; however, teachers often cite needing help with classroom management as their greatest need. Given this concern, school psychologists need effective and efficient strategies to offer to teachers and school staff dealing with classwide behavioral difficulties. The Good Behavior Game (GBG) is an empirically supported interdependent group contingency intervention providing explicit classroom management techniques aimed at improving student behavior. The purpose of this study was to assess the effects of a positive version of the GBG utilizing ClassDojo technology on classwide academically engaged and disruptive behavior. Measures of teacher perception of social validity and student perception of acceptability were also obtained. Overall, results indicated the intervention procedures were effective at improving student behavior across four middle-school classrooms, were considered socially valid by both participating teachers, and were acceptable to middle-school students.

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DEDICATION

This project is dedicated to my family for all of their love, inspiration, and support. Thank you all. I want to specially thank my wife, Maliegh Ford, for her unwavering love, support, and assistance; and for moving with me to Mississippi and Nebraska to help me pursue my dreams. I also want to thank my parents, Holli Ford and Brent Davis, for their continued guidance and steadfast love and support.

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CHAPTER I - INTRODUCTION

Effective classroom management skills are a critical component for student social and academic success. Furthermore, previous research has demonstrated that a teacher's classroom management strategies are strongly related to levels of disruptive behaviors in academic settings (Reinke, Herman, & Stormont, 2013). Despite this relationship, teachers report that they receive too little training in procedures to manage their classroom and disruptive behaviors and express a need to receive training and new strategies (Maag, 2002; Reinke et al., 2013). Additionally, teachers express that additional supports with regard to classroom management and instructional skills represent a great need (Kratochwill, 2009).

Elevated levels of disruptive and problem behavior are negatively associated with a variety of student outcomes, including academic achievement and skill acquisition (McIntosh, Flannery, Sugai, Braun, & Cochrane, 2008). Common disruptive behaviors (e.g., non-compliance, disrespect, and talking out) are common predictors of office discipline referrals and suspensions (Skiba, Peterson, & Williams, 1997). Scott and Barrett (2004) reported that the average discipline referral results in a distraction for the teacher, 20 minutes of lost instruction time for the student, and at least 10 minutes of administrator time to process the referral. Further, they noted that administrators take an average of 45 minutes to process a suspension, and that suspensions range on average 1-5 days. Clearly, disruptive behavior is a serious threat to student academic progress. Disruptive behavior not only impacts individual student outcomes, but also affects the learning process of the class as a whole and interferes with the teacher's ability to instruct the class (Higgins, Williams, & McLaughlin, 2001). The loss of instruction time stems

from the teacher having to cease instruction to address behavior problems, resulting in adverse academic outcomes for the class (Luiselli, Putnam, & Sunderland, 2002). Logically, elevated levels of problem behaviors exhibited by multiple students would exacerbate such difficulties for teachers. As such, it is not surprising that disruptive classroom behavior contributes significantly to teachers' levels of stress and discontent with their job (Clunies-Ross, Little, & Kienhuis, 2008; Hawe, Tuck, Manthei, Adiar, & Moore, 2000).

In addition to contributing to elevated teacher stress, frequent disruptive behavior and classroom management concerns are strongly and negatively related to teacher retention, as it has been reported that problem behaviors are the primary cause of new teachers leaving the field (Ingersoll, 2002). Also, a recent survey indicates that new teachers report notable concerns with disruptive behavior in their classrooms (Scholastic & the Bill and Melinda Gates Foundation, 2014). Equally troubling, the Southern Poverty Law Center (2008) reported that 76% of secondary level teachers report levels of disruptive behaviors significant enough to interfere with academic instruction. Furthermore, they reported that 44% of teachers and 39% of highly qualified teachers who recently left the field attributed their departure to disruptive behaviors.

Despite a variety of empirically supported behavioral interventions utilizing reinforcement strategies to reduce disruptive behavior in the schools (Wilson & Lipsey, 2007), punishment procedures are the most widely used management strategies utilized by school personnel (Maag, 2002). As described previously, such strategies (e.g., office discipline referrals, suspensions, and conferences) result in notable losses of instructional time for students and teachers, as well as cost administrators time that could be better

spent improving the school. Winbinger, Katsiyannis, and Archwamenty (2000) report that although behavior problems are more prevalent in secondary school settings, staff and administrators are more likely to endorse and utilize punitive punishment strategies in secondary level schools relative to elementary schools. Equally important, recent findings indicate a strong relationship between high school academic achievement and level of disruptive behavior during both middle school and high school – indicating that disruptive behavior in secondary school can have lasting effects on academic outcomes (McIntosh et al., 2008). Furthermore, teachers in secondary settings offer less praise to their students, despite research suggesting increasing the level of teacher praise (public and private) results in improvements in high school students' behavior (Blaze, Olmi, Mercer, Dufrene, & Tingstrom, 2014).

Punishment procedures typically utilized with secondary students can also have paradoxical reinforcing effects for both students and teachers, simultaneously resulting in increased problem behavior and increased use of such strategies amongst school personnel (Maag, 2002). Specifically, the teacher is negatively reinforced due to the momentary cessation of disruptive behavior while the student is afforded attention and/or is allowed to escape from ongoing task demands or school entirely in the case of a suspension. By punishing the student because the obnoxious behavior stops, and the student is rewarded with attention and/or escape from task requirements/school. Rather than utilizing strategies that perpetuate problem behavior, school personnel would benefit from procedures that reduce problem behavior while promoting and reinforcing appropriate behavior.

Given that disruptive behaviors clearly result in notable and various adverse effects to the learning process, it is critical that teachers be provided with effective, research based classroom management strategies to promote a safe learning environment for their students. The provision of feasible behavior supports in conjunction with effective academic supports allows for the promotion of successful teaching and learning (Lane, Oakes, Menzies, Oyer, & Jenkins, 2013). Unfortunately, although there are a variety of empirically based behavioral strategies available to teachers, it is evident that such interventions are under-utilized in school settings (Walker, 2004). Given this understanding, it is critical that practitioners continue to develop, promote, and implement successful behavioral interventions across a variety of academic settings, grade levels, and student populations.

School Wide Positive Behavior Interventions and Supports

As schools transition to tiered systems of behavior support, the School Wide Positive Behavior Interventions and Supports (SW-PBIS) framework continues to grow in both support and usage across the nation (Dunlop, 2013, Horner & Sugai, 2016). Horner and Sugai (2016) further reported that 21,278 schools across the United States were implementing SW-PBIS as of August, 2015. SW-PBIS offers system wide supports for teachers and administrators in promoting and reinforcing appropriate behavior and provides school personnel with a consistent framework for addressing challenging behavior. The universal (Tier I) supports include procedures to promote consistent classroom and school-wide management techniques and include teaching behavior expectations to students, using praise and reinforcement to acknowledge appropriate behavior, and referring to or re-teaching the expectations when using reprimands or

redirects (Reinke et al., 2013). Tier II supports typically utilize simple, high efficiency interventions to address behavior problems among individual or a group of students prior to referring a student for more intensive behavioral supports. Tier III interventions are specified, tailored interventions targeting specific problems not improved by Tier I and Tier II interventions. Often, these interventions are based on results from an individual assessment and may also include a special education referral and assessment.

If students fail to respond to Tier I supports, they become eligible for additional services on Tier II. Although teachers may refer individual students to receive more specialized interventions, often times, teachers experience classwide problems due to issues with classroom management. These problems may stem from a lack of integrity with Tier I supports (e.g., not teaching behavior expectations or acknowledging appropriate behavior) or with other aspects of classroom management. Fortunately, there are several empirically based interventions that target classwide levels of problem behavior (Reinke et al., 2013). One such set of intervention strategies is group contingencies, which utilize universal expectations to target classwide levels of problem behaviors through a variety of reinforcement schedules and strategies. Group contingency interventions can be utilized as universal Tier I interventions to strengthen the integrity of Tier I throughout the school or as Tier II interventions in individual classrooms or school settings to support teachers and staff struggling with classwide problem behavior.

Classwide Group Contingency Interventions

Classwide group contingency interventions are commonly implemented to improve teachers' classroom management strategies and improve classwide problem behaviors. These interventions utilize empirically supported behavioral techniques to

control levels of disruptive behavior. These interventions are considered a better fit for improving classroom management skills because they utilize the teacher's time to address a variety of problem behaviors efficiently (Litow & Pumroy, 1975). There are three forms of group contingencies (i.e., independent, dependent, and interdependent), each of which require teacher adherence to effective management strategies to promote changes in student behavior. Additionally, two forms (dependent and interdependent) utilize peer attention to support behavior change. To that point, classwide group contingency interventions have been found to promote positive interactions between students and teachers (Conroy, Sutherland, Snyder, & Marsh 2008).

Tingstrom, Sterling-Turner, and Wilczynski (2006) offer a comprehensive description of the three forms of group contingencies. In independent group contingencies, rules and criteria for reinforcement are the same for each of the students, but reinforcement is delivered on an individual basis (e.g., any student earning an A on an exam being allowed access to a pizza party). Dependent group contingencies also apply the same rules and criteria to the group, but access to reinforcement is contingent upon a specific subset of the group reaching the criterion (e.g., allowing an entire class access to extra recess contingent upon Johnny and Susie completing their work quietly). Interdependent group strategies also apply uniform rules and criteria to the group, but reinforcement is contingent upon the entire group reaching the criterion (e.g., a class being given extra free time contingent upon the class average on a quiz being at least 80%). Group contingency interventions have extensive empirical support for their use in improving student behavior in classroom settings (Maggin, Johnson, Chafouleas, Ruberto & Berggren, 2012). Recent meta-analyses analyzing group contingency research

determined the literature base is sufficient and rigorous enough to consider group contingencies as extremely effective at reducing disruptive behavior (Maggin et al., 2012). Additionally, Little, Akin-Little, and O'Neill (2015) reported an average effect size of *d*=3.41 across 50 studies utilizing group contingency interventions from 1980-2010, and indicated that teachers, school staff, and students often rated the procedures of GBG as socially valid/acceptable. Maggin and colleagues (2012) also reported that the results suggested that the intervention strategies should be considered evidence-based for improving both classwide and individual student behavior.

Group contingencies often promote effective classroom management techniques. To that point, three critical components of effective classroom management have been identified: effectively instructing students on classroom rules and procedures, monitoring compliance and providing feedback, and effectively communicating information to the class (Evertson & Emmer, 1982). Given the concerns discussed previously, providing teachers with strategies to promote these components should be considered a primary concern of school psychologists. Fortunately, researchers and practitioners have developed a variety of behavioral techniques that incorporate Evertson and Emmer's (1982) recommendations. One such intervention is the Good Behavior Game (GBG; Barrish, Saunders, & Wolf, 1969). The technique of this classic intervention give teachers the critical components of classroom management and consistently result in positive outcomes for students (e.g., reductions in disruptive behavior and/or improvements in positive behaviors).

The Good Behavior Game

The GBG was developed by Barrish and colleagues (1969) in an attempt to reduce excessive talking and out of seat behavior in a fourth-grade classroom. The classic study provides a framework for implementing an interdependent group contingency intervention that has since been investigated in many variations and across an array of student populations. The original intervention protocol consisted of the teacher first splitting the class into two teams. At the beginning of the game, the teacher explained to the class that they were going to play a game. Each day, the teacher reviewed classroom rules with the class and told them that a violation of the rule would result in a mark against the team of the violating student. Team names and marks were visible to the students on a board. When giving a mark, the teacher informed the class why a mark was given (i.e., which rule was broken) and provided an appropriate replacement behavior. At the end of the game, the teacher announced who won by determining the team with the fewest marks; however, both teams could win the game if they remained under a criterion of 5 marks during the game period. As such, each day, both teams had the opportunity to win, and it was always guaranteed that at least one team would win. The winning team(s) would get to wear victory tags, put a star by each of its members' names on the winner's chart, line up first for lunch if one team won or early if both teams won, and take part in an end of the day 30-min free time period during which the team(s) would have special projects, while the losing team would continue class work. Utilized in an A/B/A/B design with a multiple baseline component across math and reading instruction times, the intervention was successful at significantly reducing levels of disruptive behavior during multiple academic periods.

Since the initial study, several examinations of the GBG and variations of the procedure have been conducted. Bowman-Perrott, Burke, Zaini, Zhang, and Vannest (2015) analyzed 21 single case design studies that described 43 cases in which the GBG or a variation was implemented. Their meta-analysis determined the GBG has been shown efficacious in grades from pre-k to 12 and across numerous settings (e.g., general education classrooms, special education classrooms, physical education settings, cafeterias). Bowman-Perrott and colleagues (2015) suggested the GBG is very effective at improving student problem behavior and on-task behavior, reporting an average Tau-U effect size of 0.82, which is considered to be a large effect. The authors further reported the GBG has primarily been conducted with younger students; yet, the largest effect sizes have been observed with secondary students.

The GBG protocol is composed of and compliments several of Evertson and Emmer's (1982) criteria for effective classroom management. By prescribing this intervention, practitioners and school administrators can target both improving teacher skills and reducing student problem behavior. Furthermore, the GBG fits well within the SW-PBIS system as it requires teachers to review classwide expectations and provide replacement behaviors to students contingent upon engaging in problem behaviors. Additionally, the GBG can be implemented in either Tier I or II with a school's SW-PBIS system. If implemented in conjunction with SW-PBIS as a preventative, classroom management procedure, it would be classified as a Tier I support. However, if the GBG is implemented as an intervention targeting reducing disruptive behavior or increasing academic behavior for specific students as well as the entire class, then it might be better conceptualized as a Tier II intervention.

Although the GBG in its original form provides an effective way to coach teachers on critical classroom management skills and fits well with SW-PBIS, it misses one of the key components of SW-PBIS: providing students with positive feedback contingent upon engaging in appropriate behavior. Given that the use of higher rates of positive statements are associated with better outcomes within the SW-PBIS framework (Reinke et al., 2013), implementing an intervention that targets this aspect of classroom behavior while also attempting to improve student outcomes should be considered when teachers experience difficulties with classroom management. Although the original version of the GBG has been replicated and altered across a variety of settings and populations, few studies have examined a positive variation of the original protocol. Further, even fewer studies have examined the effects of a positive variation with students in a secondary setting (e.g., Lynne, 2015). Given that disruptive behaviors are more prevalent in secondary school settings and that these settings impose more punitive discipline methods (Winbinger, Katsiyannis, & Archwamety, 2000), it is critical that empirically based behavioral interventions be examined and extended to use with these students. The following review will examine the effects of positive variations of the GBG across a variety of populations while also evaluating the use of the GBG and similar interdependent contingencies with students in secondary settings.

Positive Variations of the Good Behavior Game in Primary Schools

Robertshaw and Hiebert (1973) published the first study utilizing a positive variation of the GBG. The authors utilized an A/B design to assess the effects of what they called the Good Astronaut Game in a first-grade classroom. The students earned tokens for completing worksheets and following rules, which were displayed to the class

on the board. The team(s) that earned the most tokens by the end of the day were able to access rewards. Rewards were unknown to students until the end of the day and included getting to choose between several fun activities. Although the results are limited due to the A/B design, the intervention was successful in increasing on-task behavior and number of completed worksheets for both the target individual and the class.

In another positive variation of the GBG, Darch and Thorpe (1977) used what they titled the "Principle Game" to increase on-task behavior in 10 nominated fourth graders. The researchers utilized an A/B/A/C/A withdrawal design to compare two versions of their intervention. During the B phase, the class was divided into 5 teams, which could earn up to six points for being on task when a timer sounded (i.e., they had the opportunity to earn a point 6 times). Teams "won" by earning at least 5 points. Winning students earned special positive attention from the school principle at the end of the game period. During the C phase, researchers added an independent contingency to the intervention: consequences for problem behaviors that did not affect the group. Overall, the results indicated that the Principle Game without the independent component was the most successful at improving on-task behaviors.

In another examination of a positive variation to the GBG, Fishbein and Wasik (1981) sought to improve task relevant behavior while reducing off-task and disruptive behavior in fourth-grade students across both the classroom and library settings. The authors deviated from the classic protocol in several ways: by allowing student input in creating rules, stating the rules in a positive way (i.e., informing students of what to do rather than what not to do), and having teams earn points for team members engaging in appropriate behavior. The researchers evaluated the effects of the intervention with an

A/B/C/B design. In the B phase, winning teams were given a reward, while no reward was given during the C phase. The initial B phase resulted in improvements in on-task behavior and decreases in problem behaviors. Implementation of the C phase resulted in data trending toward baseline levels, resulting in the researchers returning to the original version of their intervention. The final B phase resulted in similar reductions in problem behaviors and improvements in positive behaviors.

In an interesting variation of the GBG, Swain, Allard, and Holbum (1982) utilized a positive version of the Game to improve oral hygiene amongst second- and third-grade classes. Baseline data entailed a dental wellness check resulting in a Simplified Oral Hygiene Index (SOHI) score (a measure of teeth cleanliness) for each child. The students were taught about oral hygiene, provided with a dental kit, and divided into teams. The students were told that they would play a game and that the team with the cleanest teeth would win. Each day, 4 children were randomly chosen from each team and assessed via the SOHI. The winning team members received stickers and had their names placed on the "winner's poster". The effects of the intervention were assessed with an A/B design with a follow up phase. Results indicated immediate and lasting improvements in oral hygiene that were maintained nine months following the conclusion of the study.

Darveaux (1984) examined the effects of a variation of the GBG that he termed the GBG plus Merit (GBG+M). The author added a merit component to the traditional version of the Game that gave teams the opportunity to have marks removed. Teams earned points against their team as in the classic version of the game, with the goal being to remain under the set criterion. Merits were awarded to students individually for completing an assignment with at least 75% accuracy. Teams had a point removed from

their team for every 5 merits earned. The effects of the intervention were evaluated with an A/B/A/B withdrawal design. Although data were not collected on classwide work completion or accuracy, the intervention was effective in reducing disruptive behavior and improving work productivity for two target students.

In one of the few studies examining the effects of the GBG in the pre-school setting, Swiezy, Matson, and Box (1992) utilized a positive variation of the GBG with four students split into two teams. The study utilized an A/B/C design in an analogue setting to evaluate the effects of the intervention. During the B phase, teams earned points for complying with instructions given by a puppet. The team that earned the most points was determined to be the winner. During the C phase, the teams were not in competition, with each team having the ability to earn a reward contingent upon reaching a criterion. Although the study was successful in increasing compliance in the analogue setting, student behavior was not measured in the classroom setting or after being instructed by a teacher.

Tanol, Johnson, McComas, and Cote (2010) published the first study comparing the effects of a positive version of the GBG with a response cost version of the Game. The authors compared the interventions with an A/B/A/C/B/C design counterbalanced across two kindergarten classrooms. Each teacher nominated three target students for engaging in disruptive behavior. In the positive version of the game, teams earned points (stars) for engaging in "rule following" behavior. Teams had to earn at least 3 stars during the 10-minute game period in order to earn access to a reward (a small prize). During the response cost phase, teams started with 4 stars which were removed contingent upon rule violations by a team member. Teams with at least one star at the end

of the game period were rewarded. Results indicated improvements in target student behavior across both versions of the intervention. Furthermore, both versions of the intervention resulted in an increase in level of teacher praise and a decrease in level of negative teacher statements. Although both interventions were considered effective, teachers indicated a preference for the positive version of the Game, anecdotally indicating that it created a more positive classroom environment.

Wright and McCurdy (2012) also compared the effects of a positive version of the GBG with the traditional version using an A/B/A/C design counterbalanced across a fourth-grade and kindergarten class. The positive version of the GBG was called the Caught Being Good Game (CBGG) and entailed having the teacher scan the class on a variable interval schedule to determine if students were on- or off-task. Teams were awarded a point if each member was on-task. Each version of the intervention was successful at improving levels of disruptive and on-task behavior. However, the GBG produced a higher level of on-task behavior in the kindergarten class (88% vs, 75%), whereas the CBGG resulted in a higher level of on-task behavior in the fourth-grade class (95% vs 87%). Each intervention resulted in similar reductions in disruptive behavior. Overall, both teachers rated each version of the Game as acceptable, with the kindergarten teacher rating the CGBG slightly higher and the fourth grade teacher rating the GBG slightly higher. Students also rated each version acceptable, without noting a clear preference for one version over the other.

Interdependent Group Contingencies in Secondary Schools

Although numerous studies have examined the effects of group contingencies (Maggin et al., 2012) and the GBG (Bowman-Perrott et al., 2015), few studies have been

conducted with secondary-level students. The following review will highlight studies that have demonstrated positive effects of group contingencies, such as the GBG, in secondary settings.

Christ and Christ (2006) implemented an interdependent group contingency intervention using an electronic feedback device (i.e., scoreboard) in three high school classes utilizing a multiple baseline design. Prior to beginning the intervention, the teacher reviewed the rules with the class. During the intervention, the scoreboard would count down in seconds from two minutes. If the entire class did not engage in disruptive behavior for two minutes, they were awarded a point, which was presented on the scoreboard; however, if any student engaged in a problem behavior, the clock was reset. Contingent upon earning at least 17 points, the class could earn access to a reward – free time at the end of the period. Although the authors did not consider this a variation of the GBG, several procedures overlap, such as the public posting of points, a point criterion, and the targeting of classwide disruptive behavior.

Schanding and Sterling-Turner (2010) also assessed the effects of an interdependent group contingency intervention that incorporated a mystery motivator within the secondary school setting with an A/B/A/B/A/B design. The class was not divided into teams, but rather received points as a class for violating classroom rules. If the class remained below a set criterion, they were eligible for earning a reward. Contingent upon remaining below the criterion, the teacher would pull a slip of paper from an envelope; the slips were marked with either the letter M or X. If the teacher pulled an M slip, the class earned a reward chosen by the teacher. If the teacher pulled an X, she would praise the students for remaining below the criterion and remind them they

would have another chance the next day. The intervention was successful in reducing problem behaviors for each of three target students as well as the classroom as a whole.

In 2011, Kleinman and Saigh published the first study utilizing the traditional version of the GBG (Barrish et al., 1969) in the secondary setting. The authors assessed the intervention with an A/B/A/B withdrawal design in a ninth-grade New York City classroom. The results of the study indicated significantly lower levels of disruptive behavior (e.g., talking out, aggression, and out of seat behavior) during the intervention phases. Despite these results, the study had several significant limitations: the use of only one classroom and the fact that phase changes occurred based on a temporal criterion rather than on visual interpretation of data, resulting in a phase change occurring despite an increasing trend in disruptive behavior during the intervention phase.

Flower, McKenna, Muething, Bryant, and Bryant (2014) examined the effects of the GBG with a mystery criterion on reducing levels of off-task behavior in two special education classrooms. Several variations were made to the original protocol including splitting the students into three teams and keeping the criterion a mystery until the end of the day. The winning team was the team with the lowest number of points below the criterion at the end of the day. Utilizing an A/B/A/B design, the authors determined the intervention resulted in significant decreases in off-task behavior in each classroom. Five weeks after the final intervention phase, the researchers conducted follow-up observations to determine the long-term effects of the intervention. Observations indicated that neither teacher had continued implementing the intervention. In Classroom 1, off-task behavior remained below baseline level, but was higher than levels observed

when the intervention was in place. In Classroom 2, level of off-task behavior was similar to the level found in baseline.

Mitchell, Tingstrom, Dufrene, Ford, and Sterling (2015) attempted to further expand the GBG into the secondary setting by addressing the primary limitations in the Kleinman and Saigh (2011) study. They assessed the effects of the traditional version of the GBG across three classes with an A/B/A/B design. The purpose of the study was to reduce levels of disruptive classroom behaviors such as inappropriate vocalizations, off-task behavior, and out-of-seat behavior. Overall, the results of the study indicated notable reductions in classwide disruptive behavior during the intervention phases; however, despite successful outcomes, one teacher withdrew from the study prior to the withdrawal and reimplementation phases. Although the intervention appeared to have positive results in the class, the primary author noted inconsistencies with the teacher's abilities to implement the intervention with integrity – noting he often had trouble issuing points fairly to teams resulting in large disparities between them. Given this concern, it was recommended that future research examine the effects of the GBG without teams in the secondary setting, thereby streamlining teachers' monitoring tasks during the GBG.

To address the aforementioned recommendation, Ford (2015) examined the effects of the GBG without teams in the secondary setting with an A/B/A/B design in three high school classrooms. The results of the study indicated that a streamlined, no-teams, version of the GBG was effective in reducing levels of classwide disruptive behavior and increasing levels of academic engagement across each class. Despite positive results, teachers struggled at times with delivering points immediately following the occurrence of the behavior due to being away from the board. They also had difficulty

providing behavior specific feedback upon giving a point. Therefore, it was suggested that future studies should consider identifying methods which allow for teachers to provide consistent feedback in a quick, easy fashion.

In a follow-up study with secondary students, Mitchell (2014) examined the effects of the GBG by incorporating a changing criterion element in the investigation. The changing criterion element was included to determine if a functional relationship existed between the criterion level and student behavior. The author utilized an A/B/A/B design to assess the effects at reducing levels of disruptive behavior and increasing levels of academically engaged behavior. During the initial intervention phase, the class participated in the traditional version of the Game; however, the criterion level systematically decreased throughout the phase, resulting in a decreasing trend in disruptive behavior and increase in academically engaged behavior. During the second intervention phase, the author implemented a mystery criterion "sub-phase", in which the daily criterion was not made available to the students. While these data were more variable, this phase resulted in a substantial reduction in problem behavior, indicating the students attempted to earn as few points as possible in case the criterion was set at a low level. These data indicate that students are able to adjust their level of problem and on-task behavior contingent upon required criteria.

Although the majority of GBG studies with secondary students have utilized the traditional version, Lynne (2015) examined the effects of a positive version of the GBG in the secondary setting. Lynne (2015) utilized an A/B/A/B multiple baseline design across three classrooms to assess the effects of the intervention on reducing students' levels of disruptive behaviors and increasing levels of appropriate student behavior.

During the intervention phases, the teacher divided the class into two teams and explained that they were going to be given an opportunity to earn a reward. The teacher reviewed the class rules and rewarded teams with points when the entire team was engaged in appropriate behavior. Rewards were given contingent upon one team earning more points than the other or each team reaching a set criterion. Results indicated that the positive version of the game was effective at improving students' level of academically engaged behavior while also reducing levels of disruptive behavior. Taken together, these studies support the use of group contingencies such as the GBG with secondary students. Despite this support, intervention techniques still need to be adjusted and adapted to meet teacher needs and assessed through rigorous examinations to determine their effectiveness and efficiency.

ClassDojo

As technological advances, the integration of technology into classroom and school interventions grows as well. Fortunately, technological advances have the potential to make a meaningful impact on improving student behavior in efficient, effective ways. Given that nearly all classrooms in the nation are equipped with computer and internet access, that the majority of classroom teachers have smart phones (Purcell, Heaps, Buchanan, & Friedrich, 2013), and devices such as SMART Boards™ are becoming more prevalent, school psychologists need to adapt and utilize these devices to our advantage. To that point, researchers and practitioners should consider ways to update classic, effective interventions with technology to offer simple, easy to implement, efficient, and effective interventions to teachers in need of support.

ClassDojo (www.classdojo.com, 2016) is an internet application that has the potential to be an effective intervention component. The program developers define the system as a classroom management tool that allows teachers to offer consistent, real-time feedback to students to aid teachers in improving classroom behavior. The program is adaptable and can be utilized in any level of education and classroom type, contingent upon the class having access to the internet and an electronic display unit.

The program is teacher friendly in that it is simple to set-up and implement. Teachers are able to create a free account and can individualize their account to meet their class' needs. The teacher inputs his or her students' names on the digital roster and determines a list of praise statements (e.g., Great job being on-task) and rule violation feedback statements (e.g., Talking without permission). During class, the teacher can award points to students contingent upon appropriate behavior and subtract points contingent upon disruptive behavior. When giving or removing points, teachers select reinforcing or redirecting statements, allowing the students to receive immediate, specific feedback from the program as to why the action (point addition or reduction) occurred. Furthermore, the program offers a mobile phone application, allowing teachers to award and subtract points from any position in the classroom.

The program is gaining support for use as a classroom management tool as it offers teachers an interactive way to provide students with efficient, consistent feedback, and public feedback, which may provide greater incentives for students to engage in appropriate behavior (Walberg & Twyman, 2013). Furthermore, the program generates an abundance of data, including classroom levels of behavior and individual student behavior. The program allows the teacher to track specific use of positive and negative

statements when providing points to allow teachers to determine how many positive and negative statements they offer during the class period. Also, the program allows teachers to generate reports and easily share data with other teachers, administrators, and parents. Given these significant advantages, ClassDojo offers practitioners a potential intervention component to consider when issues with classwide problem behaviors or issues with classroom management are of concern.

Despite the practicality of ClassDojo, there is not an extensive literature base examining the effectiveness of the program on improving levels of student behavior (e.g., Dadakhodjaeva, 2017; Dillon, 2016; Johnson, 2012; Lynne, 2016; Maclean-Blevins & Muilenburg, 2013). Although these initial studies offer encouragement for the use of ClassDojo to improve student behavior, there are notable methodological limitations that must be addressed, such as lacking treatment integrity and interobserver agreement (e.g., Johnson, 2012; Maclean-Blevins & Muilenburg, 2013) or are in need of further research (e.g., Dillon, 2016; Lynne, 2016) before the program should be considered an effective management tool.

Johnson (2012) implemented ClassDojo in a self-contained classroom with five special education students in conjunction with a new academic procedure. Utilizing an A/B/A/B design, the researcher assessed the effects of the intervention on reducing off-task behavior during language and mathematics. The intervention included adding two new technologies to the academic settings: ClassDojo and "clickers." During class, each student was given a clicker with which they could answer multiple choice questions posed by the teacher and receive visual feedback on an interactive projection board. The "clickers" were not used during the baseline or withdrawal phases. During all phases

(baseline, intervention, and withdrawal), the teacher tracked on- and off-task behavior with ClassDojo program; however, it is unclear if the students were given feedback or were aware their behavior was being tracked.

The overall results of the intervention were mixed. Although the use of clickers resulted in increases in academically engaged behavior and decreases in off-task behavior in the language class, the data in the math class were less clear. Although the initial intervention phase resulted in improvements in student behavior, the intervention did not appear to be successful in the reimplementation phase, as indicated by lower rates of on-task behavior than were seen in the initial baseline phase.

Although the researchers noted that ClassDojo was used by the teacher to collect student data for on- and off-task behavior, it is unclear if it was utilized as an intervention component, given that the use of the "clickers" was the only protocol component manipulated between the baseline/withdrawal and intervention phases. Beyond this limitation, the author also failed to indicate if the students were aware of ClassDojo. Furthermore, a lack of interobserver agreement and treatment integrity data result in noteworthy limitations to the internal validity of the study, as it is difficult to determine if the intervention was conducted as described and if results were due to actual changes in behavior rather than observer drift.

Maclean-Blevins and Muilenburg (2013) assessed the effectiveness of improving on task behavior and reducing levels of negative learning behaviors in a third-grade class. During an independent work period, the teacher awarded points to students on ClassDojo for a variety of on-task or appropriate behaviors. Simultaneously, independent observers recorded frequency of occurrences of the following appropriate and inappropriate student

behaviors: “raising one’s hand to ask a question, interacting with directions, working quietly, focusing on work, using classroom resources, double-checking work, talking to another student, disruptive behavior, not focusing on work, and standing up and approaching the teacher with a question without permission” (Maclean-Blevins & Muilenburg, 2013, p. 8).

The effects of the intervention on the frequency of the 10 dependent variables were assessed with an A/B design. The implementation of the intervention resulted in notable increases in occurrences of appropriate behavior and decreases in problem behaviors. Also of note, the majority of the students indicated that they enjoyed the intervention. Despite the positive outcomes, the results of this study should be interpreted with caution. The use of a simple A/B design in one classroom in conjunction with a lack of operational definitions of target behavior, the abundance of behaviors being coded at once for a variety of students, a lack of interobserver agreement, a lack of treatment integrity, and inconsistencies with implementation all hinder the internal validity of the study.

Dillon (2016) examined the effects of the tootling intervention with ClassDojo on reducing classwide disruptive behavior and increasing academically engaged behavior with upper elementary students in three classrooms. McHugh incorporated ClassDojo into the traditional tootling protocol to streamline the student tootle process and simplify teacher requirements (e.g., counting and graphing total number of tootles). The intervention required students to note positive behaviors exhibited by their peers during a 20-minute independent work time and “tootle” on them using ClassDojo. A tootle would be awarded for following classroom rules and is considered to be the opposite of tattling.

Results indicated strong reductions in disruptive behavior across each classroom and moderate to strong improvements in academically engaged behavior across each classroom. Furthermore, post-study rating scale data indicated that the teachers found the intervention procedures to be acceptable. Although McHugh demonstrated significant results utilizing ClassDojo in conjunction with an established intervention, it should be noted that students were responsible for using ClassDojo interface to reward points and praise rather than teachers.

Dart, Radley, McHugh, Furlow, and Whipple (2014) tested the effects of implementing a variation of the GBG utilizing ClassDojo program in a pilot study. To determine the effects of the intervention, the researchers utilized an A/B/A/B design to improve levels of on task behavior and reduce levels of off task behavior in target students as well as the class as a whole. During the intervention phase, teachers utilized ClassDojo with the entire class roster listed. Throughout the game period, teachers were to provide points to students contingent upon rule violations (consistent with the traditional version of the Game; Barrish et al., 1969). At the end of the phase, student points were added for each team and a winner was determined by a team having fewer points or each team remaining below the criterion. Results suggested that ClassDojo format offers an effective format for the GBG, as improvements in on-task behavior and reductions in problem behaviors were observed.

Lynne (2016) examined the effects of a positive version of the GBG implemented with ClassDojo in three elementary-aged classrooms. The classes were split into 3-4 teams and points were awarded on ClassDojo for on-task behavior. The Game was played over 20 minutes during a 45-minute academic period. The results indicated improvement

in academically engaged behavior and reductions in disruptive behavior during the intervention, characterized by moderate to strong effects across each class. Despite her positive results, Lynne's (2016) study contained some notable limitations. First, Lynne conducted the study during 20 minute periods, but noted future studies should examine the effects of the intervention across the entire academic period. Next, Lynne did not cue teachers to scan for on-task behavior amongst team members. As such, schedule of reinforcement or point marking may have been inconsistent from day-to-day or moment-to-moment. As such, one classroom teacher had difficulties attending to monitoring for classwide on task behavior and required re-training. As a result of poor integrity, academically engaged behavior deteriorated during intervention, resulting in a phase change despite a downward trend in desirable behavior. Future studies could incorporate a variable interval cueing system to aid the teachers in scanning consistently and to provide consistent schedules of classroom scanning and aid in assessing teacher integrity of classroom scanning. Lastly, although Lynne (2016) obtained ratings of teacher social validity, she did not attempt to assess perceptions of student acceptability of the intervention procedures.

Dadakhodjaeva (2017) examined the effects of a positive version of the GBG using ClassDojo in three middle-school classrooms. Using a multiple baseline design across two classrooms and a third classroom nonconcurrently, each with a GBG phase and two subsequent maintenance phases, Dadakhodjaeva (2017) demonstrated that the intervention procedures resulted in large to very large increases in classwide academically engaged behavior across intervention and maintenance phases and moderate to large reductions in disruptive and passive off-task behavior. Improvements in

target behaviors were generally maintained from intervention to the two maintenance phases. Although Dadakhodjaeva (2017) demonstrated positive results of a positive version of the GBG using ClassDojo, some notable limitations exist. As noted with Lynne (2016), teachers only conducted the intervention during a 20-minute game period and were not cued to scan the class. Also, although the use of a multiple baseline design allows for 3 attempts to demonstrate the effects of the intervention across the 3 classrooms (Kratochwill et al., 2010), a study using a withdrawal design (e.g., A/B/A/B) replicated across at least 3 classrooms would strengthen confidence in the intervention results as the withdrawal and re-implementation would provide 2 additional demonstrations of experimental control per class.

Purpose of the Present Study

The Good Behavior Game has been proven effective across several populations, settings, target behaviors, and with various modifications (Tingstrom et al., 2006). Although the original version of the GBG has demonstrated positive results across numerous studies (Bowman-Perrott et al., 2015), its reliance on differential reinforcement of low rates of problem behavior increases negative teacher statements rather than focusing on encouraging teachers to notice and reinforce appropriate student behavior, a procedure more consistent with current trends in schools including SW-PBIS. Fortunately, previous research has demonstrated that a positive version of the GBG results in desirable student behavior change (e.g., Darch & Thorpe, 1977; Robertshaw & Hiebert, 1973; Tanol et al., 2010; Wright & McCurdy, 2012). Despite the advantages this positive variation offers, its effects in the secondary setting have not been extensively examined thus far. Given that secondary schools report higher levels of disruptive

behaviors and endorse the use of more punitive measures (Winbinger et al., 2000), it is apparent that these teachers would benefit from a classroom management procedure that focuses on improving levels of student behavior while also providing them with a framework for reinforcing appropriate behavior.

Given the benefits that ClassDojo provides to the GBG protocol, a natural progression to the GBG literature would be to continue to examine the effectiveness of incorporating it or other technological advances into the intervention protocol. Few studies have examined the effects of incorporating ClassDojo into the GBG protocol (e.g., Dadakhodjaeva, 2017; Dart et al., 2014; Lynne, 2016). Dart and colleagues (2014) found initial evidence of the effectiveness of including the program in the GBG protocol utilizing the traditional method of rewarding points (i.e., for rule violations). In follow-up studies, Dadakhodjaeva (2017) and Lynne (2016) provided support for a positive version of the GBG implemented with ClassDojo. Although their results are promising, the procedures should continue to be examined across different settings and populations. Given the aforementioned limitations in the GBG and ClassDojo literature, the primary purpose of the present study was to assess the effectiveness of a positive variation of the GBG presented via ClassDojo on increasing levels of academically engaged behaviors and decreasing levels of disruptive behaviors. Furthermore, effective results would extend the GBG literature by assessing the effects of a positive version that fits well within the framework of SW-PBIS by promoting classroom management skills, including reinforcing academic engagement and appropriate behavior, while also providing teachers with technology that helps track, monitor, and record student behavior. The following research questions were addressed:

1. Will a positive version of the GBG implemented with ClassDojo increase classwide academic engagement in secondary school classrooms?
2. Will a positive version of the GBG implemented with ClassDojo reduce classwide disruptive behavior in secondary school classrooms?
3. Do secondary classroom teachers rate the GBG implemented with ClassDojo as socially valid?
4. Do secondary school-aged students rate the GBG implemented with ClassDojo as acceptable?

CHAPTER II - METHOD

Participants and Setting

Participants included two teachers and four middle school classrooms referred for off-task and disruptive behavior to the primary researcher by school administrators at a middle school in a medium-sized city in a southeastern state. The school was comprised of 94% African American students, 4% Caucasian students and 2% Hispanic students. The school had SW-PBIS expectations posted throughout the school and teachers and administrators were observed providing students with SW-PBIS tickets, which students could trade for special privileges (e.g., "jeans day") or attendance to special activities (e.g., popcorn party). In the preceding year (Spring 2015), the school's SW-PBIS program was independently assessed with the School-Wide Evaluation Tool (SET, Todd, Lewis-Palmer, Horner, Sugai, Sampson, & Phillips, 2012). The school received a score of 92, indicating that the school is implementing SW-PBIS adequately. School administrators had introduced the teaching staff to ClassDojo at the beginning of the school year, but it was not considered part of the school's SW-PBIS program nor required to be used by teachers. Teacher consent and demographic information was obtained prior to collecting data (see Appendices A and B). All procedures were approved by the University's Institutional Review Board (IRB, see Appendix C) prior to the recruitment of participants and data collection.

Teacher 1 was a Caucasian male in his first year of teaching with a Bachelor's Degree in education. He taught Classrooms 1 and 2, two eighth-grade English classes. He described his classes as off-task, disruptive, and extremely disrespectful. Classroom 1 consisted of 19 African American students (10 females). Three of the students in the class

had a special education ruling of SLD. Classroom 2 consisted of 14 African American students (7 females); one student had a special education ruling of SLD. Teacher 1 had not had previous exposure to the GBG, nor had he attempted to use any interventions with the students in either classroom prior to the study. Direct observation during baseline confirmed that no interventions were in place.

Teacher 2 was a Caucasian female in her first year of teaching. She had a Master's Degree in education. She taught Classrooms 3 and 4, two seventh-grade English classes. She considered her students to be off-task and disruptive during class. Classroom 3 consisted of 17 African American students (9 females). Classroom 4 consisted of 16 students (9 females); 13 were African American (6 females) and 3 were Hispanic (3 females). None of the students in Classrooms 3 or 4 had a special education ruling or individualized education plan (IEP). Teacher 2 had not had previous exposure to the GBG, nor had she attempted to use any interventions with the students in either classroom prior to the study. Direct observation during baseline confirmed that no interventions were in place.

Materials

The materials utilized in the study included a computer with internet access, smart phones, a projector, a white board, a rules poster, a teacher script and protocol, a notification device, and rewards. A script and protocol were provided to each teacher (see Appendix D). Use of the script and protocol, in conjunction with the treatment integrity checklist (see Appendix E), aided in ensuring consistent implementation across each class. A rules poster was also developed for each classroom. Rules were based on SW-PBIS expectations and developed with each teacher to specifically target the problem

behaviors in each classroom. The rules poster was clearly visible to the class while the intervention was in place. A computer and projector were utilized to run and project ClassDojo program to the class, which was used to award the teams' points and provide feedback. ClassDojo program (including team names, avatars, points, and feedback) were projected on the whiteboard which was clearly visible to the class. Although teachers were informed that they could award points on both their computer or smart phone, neither teacher awarded points on a phone at any point throughout the study. A notification device (e.g., a Motivaider for Teacher 2 and the Motivaider app for a smart phone for Teacher 1) was utilized to cue the teachers to scan the classroom as part of the intervention protocol (described in detail later). Rewards were of little to no cost and any purchased items were provided by the primary investigator. Rewards were nominated and agreed upon by the primary researcher and each teacher and included items such as snacks (e.g., chips, cookies, crackers), candy, a free "100% attendance grade" (i.e., each student received a free grade of 100), SW-PBIS tickets, and pencils.

Dependent Variables

The primary dependent variable was classwide academically engaged behavior (AEB), defined as orienting one's head and eyes towards the ongoing academic task (e.g., attending to lecture), actively attending to the ongoing academic task (e.g., raising one's hand during lecture, working on an assigned worksheet), or following teacher instructions (e.g., sitting quietly or reading a book upon completing a task).

Classwide level of disruptive behavior (DB) was also measured as a secondary dependent variable. Each teacher agreed upon the three most problematic behaviors in their classrooms: students talking without permission, playing with objects, and being out

of seat. Talking without permission was defined as students verbalizing to other students or the teacher without permission, shouting out, talking back, singing, or making noises not related to an ongoing task demand. Playing with objects was defined as manipulating objects not associated with ongoing task demands (e.g., combing hair, slamming books, scribbling/coloring, digging in book bag, using a phone). Out of seat behavior was defined as the student leaving his or her desk for 3 or more seconds without permission. These behaviors were collapsed to constitute disruptive behavior (see observation procedures described below). The definitions for AEB and DB were based on definitions described by Ford (2015).

Social Validity

At the conclusion of the final intervention phase, each teacher completed a modified version of the Behavior Intervention Rating Scale (BIRS; Elliot & Von Brock Treuting, 1991; see Appendix F) to assess their perceptions of social validity of the intervention procedures. Modifications included using past tense wording and describing classwide behavior. The BIRS is a questionnaire containing 24, 6-point Likert scale items assessing three factors of teacher perceptions of the intervention procedures: effectiveness, acceptability, and time of effectiveness. The Acceptability factor items are represented by the items on the IRP-15 (Martens, Witt, Elliott, & Darveaux, 1985). The effectiveness factor includes 7 items assessing perceptions of the efficacy of the procedures in improving student behavior. The efficiency factor includes 2 items assessing how quickly the procedures produced behavior change. Likert items range from s*trongly disagree* (1) to *strongly agree* (6). Factor scores are determined by averaging the included items, with higher scores indicating a higher level of agreement. The BIRS has

been confirmed to be an internally consistent indicator of social validity, as Elliot and Von Brock Treuting (1991) reported an overall Cronbach's Alpha score of .97 and coefficient alpha scores of .97, .92, and .87 for the acceptability, effectiveness, and efficiency factors respectively.

Acceptability

Following the final intervention phase in each class, ratings of student acceptability of the intervention were obtained via a modified version of the Children's Intervention Rating Profile (CIRP; Witt & Elliott, 1985; Appendix G). During the final intervention phase, a note was sent home with all students requesting parental consent to complete the survey (see Appendix H). Students were informed that those who returned a completed form would receive candy. Students were given the prize regardless of parental consent decision. Following the final day of intervention in each class, all students with parental consent completed the survey while the remaining students worked on other school-related activities. Students were instructed to not provide any identifying information on the survey to ensure anonymity. The CIRP included six Likert-type questions regarding student acceptance of the intervention procedures. Item ratings of 4.0 or higher indicated acceptance of the procedures. The CIRP has been reported as an internally valid measure of student acceptability, as Witt and Elliot (1985) reported a Cronbach's alpha score of .89.

Observation Procedures and Data Collection

The behavior of each student in the classroom was assessed during the observation period. Observations occurred between two and four days per week. Similar to procedures described by Briesch, Chafouleas, and Riley-Tillman (2010), the

observer(s) began with one child and moved to a different child at the end of each interval, ensuring that each child was observed multiple times throughout the observation in a systematic fashion. To avoid student reactivity, observers entered the classroom at least 5 minutes prior to beginning data collection and did not interact with students while in the classroom. Although the intervention was run throughout the entire class period (approximately 50 minutes) observations were 20 minutes in length. Observation start times were distributed between the beginning, middle, and end of class, and start times were randomly determined to ensure that each portion of class was observed equally. Behaviors were observed via a momentary time sampling procedure for each dependent variable (see Observation Sheet; Appendix I). This method allows for percentage of intervals of occurrence to be calculated in order to easily compare phases. Intervals were 10 seconds in length. Observers used an mp3 recording to signify the beginning of each interval. At the beginning of each interval the observer(s) determined if the child was academically engaged or exhibiting a disruptive behavior via the definitions above by quickly glancing at the student. Observations were conducted by the primary researcher and trained graduate students. At the end of the observation, the total classwide percentage of intervals of academically engaged behavior and disruptive behavior were calculated and graphed.

Procedures

Screening

Teachers were referred to the study to the primary investigator by school administrators for having problems with classroom management resulting in low levels of academically engaged behavior, high levels of disruptive behavior, and/or elevated levels

of office discipline referrals and/or academic deficits. Once consent and classroom demographic information were obtained, a screening observation was conducted to verify the referral concern and determine if the intervention was suitable for the classroom. During the screening observation, teachers were instructed to continue to manage their classroom in a normal manner, utilizing typical reinforcement and consequent procedures. In order for a classroom to screen into the study, AEB had to occur in 70% or fewer intervals. Observation procedures were the same as those during all other phases of the study. All classrooms initially qualified based on the above criterion, as AEB occurred in less than 50% of intervals during each screening observation.

Baseline

Baseline data were collected to determine each classrooms' current levels of academically engaged behavior and disruptive behavior and to determine the starting criterion score for use during the intervention phases. As in the screening observation, teachers were instructed to continue to manage their classroom in a normal manner, utilizing typical reinforcement and consequent procedures during baseline; however, in conjunction with teaching, the teachers were required to wear a notification device to cue them to scan the class. The teachers were notified every two minutes and were instructed to scan the class 0-30 seconds following the notification to develop a variable interval schedule of scanning. The teacher scanned the entire class to determine if the all of the students were on-task, and if so, the teacher marked a tally on a sheet of paper, unbeknownst to the students in the class. This information was used when determining the criterion for the intervention phases (described later). Observers collected data at this time to determine the percentage of intervals in which problem behaviors and academic

engagement occurred in order to assess the effectiveness of the interventions relative to baseline. The screening observation counted as the first baseline datum point upon screening into the study. The baseline phase ended when AEB data were stable or reflected a decreasing trend.

Teacher Training

Prior to starting the intervention phase, both teachers were trained on the procedures of the intervention during a single teacher training session with the primary investigator and a trained graduate student. A script and checklist for treatment integrity (see Appendices D and E) were provided to the teacher. The training began with the experimenter explaining the rules and procedures of the Game. Next, the primary investigator demonstrated how to display ClassDojo on the board, use the script to begin the game, turn on the notification device (i.e., Motivaider and Motivaider app), award points appropriately on ClassDojo, and end the game. During this time, students were not present; rather, the two teachers and trained graduate students acted as students. Each teacher then practiced each step of the intervention with the primary investigator providing feedback until each teacher demonstrated 100% integrity with the treatment procedures. The primary researcher continued to assess teacher integrity and was available for questions throughout the study. Performance feedback for missed steps and/or praise for high integrity were given at the end of each observation. Teacher retraining occurred if integrity fell below 75%.

Criterion Levels and Reward Determination

The criterion level for each class was determined via the baseline marks given by the teacher. To account for the team component, the mean number of marks were divided

in half when determining the criterion. The criterion values were then set approximately10% to 20% above the determined number. The number of points for Classrooms 1 and 2 was 5, 7 for Classroom 3, and 8 for Classroom 4.

As described in Ford (2015), prior to beginning the intervention phase of the study, the names of all of the teacher approved rewards were written on cards. Each day the intervention was in place, the teacher randomly drew two cards at the beginning of class, read the potential awards allowed to the class, and wrote the name of each item on the board. At the end of the period, the winning team voted on which reward they wanted to receive. If each team reached the criterion, the team with the highest number of points voted on which reward all students received.

Intervention Procedures

Prior to beginning the intervention, the teacher informed the class that they would be split into teams for a competition they would begin in the coming days. The students were allowed to nominate and vote on teacher approved team names (e.g., the Red Crusaders vs the Flawless Bobcats, the LSU Tigers vs the Oregon Ducks, the Tigers vs the NR Credibles, and the Migos vs the Futures). Pictures related to each team name were found via an internet search by the primary investigator and assigned as an avatar for each team on ClassDojo. These avatars and team names were displayed during the intervention phases.

The teacher introduced the game to the class by telling the students that they were going to have a team competition. The teacher split the class into the two pre-determined teams and displayed the team names on ClassDojo via the projector. The teacher told the students that the point of the competition was for each team to compete to earn as many

points as possible. The teacher informed the class that teams would earn points if their entire team remained on task during class. Then, the teacher reviewed the rules with the class to inform the students of what on-task behavior entailed (e.g., sitting in your seat, working on the assignment, and staying quiet). The teacher then told the students that the team with the most points at the end of the period would win a prize, but that both teams could earn a prize if they exceeded the announced criterion. The teacher would then draw two possible reward cards and inform the class that the team with the most points at the end of the period would get to vote on which reward the winning team(s) would receive.

During the intervention phase, the teacher turned on the notification device and began class. The teacher scanned each class 0-30 seconds following a cue to determine if each of the team members were academically engaged without engaging in disruptive behavior. Cues occurred every two minutes. Contingent upon 100% academic engagement of the team, the teacher awarded a point to the team with ClassDojo. The teacher was provided with multiple positive statement choices to inform the students why they are receiving the point (e.g., "Working quietly", "Attending to teacher instruction"). At the end of the period, the teacher allowed the team with the most points to vote on which prize they or each team (contingent upon each team exceeding the criterion) would receive.

During the withdrawal phase in Classrooms 3 and 4, Teacher 2's projector broke and school administrators indicated it would be several weeks before it would be replaced. Rather than extend the withdrawal phase, it was determined that Teacher 2 would implement the intervention without ClassDojo and instead mark team points on the white board (i.e., in the traditional fashion). During a second withdrawal, the Teacher's

projector was replaced and another phase of GBG with ClassDojo (i.e., as described previously) was re-implemented.

Design

The intervention was assessed with an A/B/A/B withdrawal design in Classrooms 1 and 2 and with an A/B/A/C/A/B withdrawal design in Classrooms 3 and 4. Phase A represents the baseline phase/withdrawal phase and phase B is the intervention phase implemented with ClassDojo. The C phase represents the GBG implemented in Classrooms 3 and 4 without ClassDojo. Phase changes occurred based on the trend, level, and stability of the primary dependent variable: percentage of intervals with academically engaged behavior. The A/B/A/B withdrawal design met What Works Clearinghouse standards for demonstrating effects as it allows for 3 demonstrations of the intervention effects (Kratochwill et. al, 2010). Additionally, standards were met by ensuring each phase consisted of a minimum of 5 data points and that interobserver agreement was obtained during a minimum of 20% of observations per phase. Upon the completion of the final intervention phase, ratings of social validity and acceptability were obtained from the teachers (BIRS, Elliot & Von Brock Treuting, 1991) and students (CIRP, Witt & Elliott, 1985) regarding the intervention procedures. Teacher 2 and the students in Classrooms 3 and 4 were also asked to indicate their preference for each version of the intervention.

Observer Training

Trained graduate students in a school psychology doctoral program or an applied behavior analysis master's program served as direct observers. Potential observers were trained on the operational definitions and observation procedures prior to conducting

observations. Trainees were given a copy of the operational definitions to review and given an opportunity to ask questions prior to their initial observation. Observers obtained a minimum of 90% reliability with the primary investigator in a practice classroom observation prior to being cleared to collect data for the project.

Interobserver Agreement

Interobserver agreement (IOA) was obtained during a minimum of 30% of observations in each classroom. As recommended by Kratochwill and colleagues (2010), IOA was obtained for a minimum of 20% of sessions across all phases. IOA was collected for each dependent variable as well as for treatment and procedural integrity by having two trained observers simultaneously and independently collect data. The minimum acceptable IOA level was 80%; if an IOA score fell below 80%, the observer was to be retrained via the methods described above. No observer required retraining during the duration of the study. Exact IOA (Cooper, Heron, & Heward, 2007) was calculated by adding the total number of agreements for occurrences of academically engaged behavior and disruptive behavior between the two observers and dividing that number by total number of agreements and disagreements of occurrence and multiplying by 100.

IOA was obtained during 33.33% of observations (20% - 40% per phase) in Classroom 1; the average percentage of agreement was 94.2% (90% - 96%). In Classroom 2, IOA was obtained during 30% of observations and averaged 95.83% (93% - 100%). IOA was obtained during 32.26% of observations in Classroom 3 and averaged 94.80% (88% - 100%). In Classroom 4, IOA averaged 94.67% (85%-100%) across 30% of observations.

In addition to collecting IOA, Kappa values were calculated using the formula provided by Uebersax (1982) for academically engaged behavior and disruptive behavior. The Kappa coefficient accounts for potential chance agreements and offers a conservative measure of inter-rater agreement (Watkins & Pacheco, 2000). Cicchetti (1994) determined that Kappa values less than .40 indicate *poor* agreement, values between .40 and .59 indicate *fair* agreement, values between .60 and .74 indicate *good* agreement, and values of .75 or greater indicate *excellent* agreement.

Agreement is characterized by excellent Kappa scores across each classroom. Observers obtained a Kappa score of 0.946 (95% CI = 0.926 – 0.967) in Classroom 1, 0.958 (95% CI = 0.939 – 0.976) in Classroom 2, 0.945 (95% CI = 0.928 – 0.962) in Classroom 3, and 0.934 (95% CI = 0.913 – 0.954) in Classroom 4.

Treatment Integrity

Treatment integrity was assessed by observers during all observation sessions via a treatment checklist adapted from the procedures of Ford (2015; Appendix E). The checklist assessed which aspects of the intervention the teacher implemented correctly, omitted, or weren't applicable. During the baseline and withdrawal phases, the checklist was used to ensure that the teacher did not utilize the intervention procedures. Feedback was provided to the teacher each day following data collection, and retraining was conducted if the teacher fell below 75% integrity. Each teacher typically implemented the intervention with a high degree of integrity (90-100%). However, on one occasion, Teacher 2's integrity fell to 78% when class ended (i.e., the bell rang) prior to her ending the game in Classroom 4. She apologized to the students as they exited the class and allowed the winning team to vote on and access their reward the following day.

Following the class, the primary experimenter briefly reviewed the end of the game procedures with the teacher.

Integrity observations occurred in conjunction with behavioral observations and teachers were instructed to complete the integrity checklist each day. This allowed for a measure of integrity across the entire implementation of each intervention day, as observers only obtained integrity during a 20-minute time period. This also provided them a prompt to aid in accurate treatment implementation. IOA for observer-recorded treatment integrity was collected during at least 30% of observations in each class and for a minimum of 20% of sessions across each phase (i.e., IOA for treatment integrity was obtained each time IOA was obtained for student behavior). IOA was calculated by dividing the number of agreements of step completion or incompletion by the total number of applicable steps.

Observers and Teacher 1 each indicated that he implemented the intervention with 100% integrity during each intervention phase in Classrooms 1 and 2. However, Teacher 1 failed to complete an integrity form during one of the treatment days. Observers and Teacher 1 determined that the procedures were not implemented (i.e., 0% integrity) during the baseline and withdrawal phases in both Classrooms 1 and 2.

In Classroom 3, Observers and Teacher 2 each indicated that she implemented the intervention with 100% integrity during each of the three intervention phases (all steps regarding ClassDojo were coded as "Not Applicable" during the C phase). Observers determined Teacher 2's integrity during the intervention phases averaged 97.87% (78% - 100%). Teacher 2 reported her integrity during the intervention phases in Classroom 4 as

97.93% (69% - 100%). Observers and Teacher 2 determined that she did not implement any of the procedures during the baseline or withdrawal phases in either of her classes.

Procedural Integrity

Procedural integrity was assessed by two observers during the teacher training session to ensure that the training procedures were consistent with the proposed study and appropriate. Procedural integrity was assessed via the procedural integrity checklist (see Appendix J), which includes the training steps described above. The teacher training was completed with 100% procedural integrity, as rated by each observer.

Data Analysis

Visual inspection was used to assess the level, trend, and variability of academically engaged behavior and disruptive behavior observation data, as well as overlap across baseline and intervention phases, immediacy of effects, and consistency across similar phases (Horner et al., 2005). Phase change decisions were determined via the stability and trend of the primary dependent variable: academically engaged behavior. The baseline and withdrawal phases ended when academically engaged behavior was stable or reflected a decreasing trend, whereas intervention phases ended when academic engagement data were stable or reflected an increasing trend.

In addition to visual inspection, effect sizes were calculated at the conclusion of the final intervention phase utilizing a nonoverlap measure of effect: Tau-U (Parker, Vannest, Davis, & Sauber, 2011). Tau-U is considered to be a more conservative measure of effect size relative to nonoverlap of all pairs (NAP; Parker & Vannest, 2009) as it controls for baseline trend. Other advantages of Tau-U include that it is well suited for small data sets, that it does not show artificial ceilings, and that the resulting scores

correlate well with other effect size measures (Vannest & Ninci, 2015). An overall weighted Tau-U score was calculated comparing each B phase to its preceding A phase (i.e., A1 vs. B1 and A2 vs. B2 in Classrooms 1 and 2 and A1 vs. B1 and A3 vs. B2 in Classrooms 3 and 4). A Tau-U score was also calculated to determine the effect size characterizing the version of the GBG implemented without ClassDojo in Classrooms 3 and 4 (i.e., A2 vs. C1). Vannest and Ninci (2015) suggest that Tau-U scores between 0 and 0.20 should be interpreted as small effects, scores from 0.20 to 0.60 as moderate effects, scores from .60 to .80 as large effects, and scores above 0.80 as large to very large effects.

CHAPTER III - RESULTS

Percentages of intervals of academically engaged behavior (AEB) and disruptive behavior (DB) are displayed in Figure 1 for Classrooms 1 and 2 and Figure 2 for Classrooms 3 and 4; weighted Tau-U effect size data across comparisons for Classrooms 1 and 2 (A1 vs. B1 and A2 vs. B2) and Classrooms 3 and 4 (A1 vs. B1 and A3 vs. B2) are presented in Table 1.

Academically Engaged Behavior

Classroom 1

AEB during baseline in Classroom 1 averaged 38.83% of intervals (range = 30.83 – 45.83%) and is characterized by a descending trend. Implementation of the intervention resulted in an immediate and substantial increase in AEB (M = 77.92% of intervals, range = 69.17 – 87.50%) that is characterized by a slight upward trend. Upon withdrawing the intervention, AEB immediately decreased to levels consistent with baseline (M = 44.00% of intervals; range = 40.00 – 47.50%). Reimplementation of the intervention once again resulted in an immediate increase in AEB (M = 66.16% of intervals; range = 60.83 – 73.33%) with an increasing trend near the end of the phase. Weighted Tau-U scores across comparisons indicated that the intervention resulted in very large increases in AEB (Tau-U = 1.000).

Classroom 2

AEB during baseline in Classroom 2 averaged 39.17% of intervals (range = 33.33 – 48.33%). Upon implementation of the intervention, the level of AEB increased immediately and trended upward throughout the phase (M = 78.17% of intervals; range = 68.33 – 84.17%). Withdrawal of the intervention resulted in an immediate decrease in

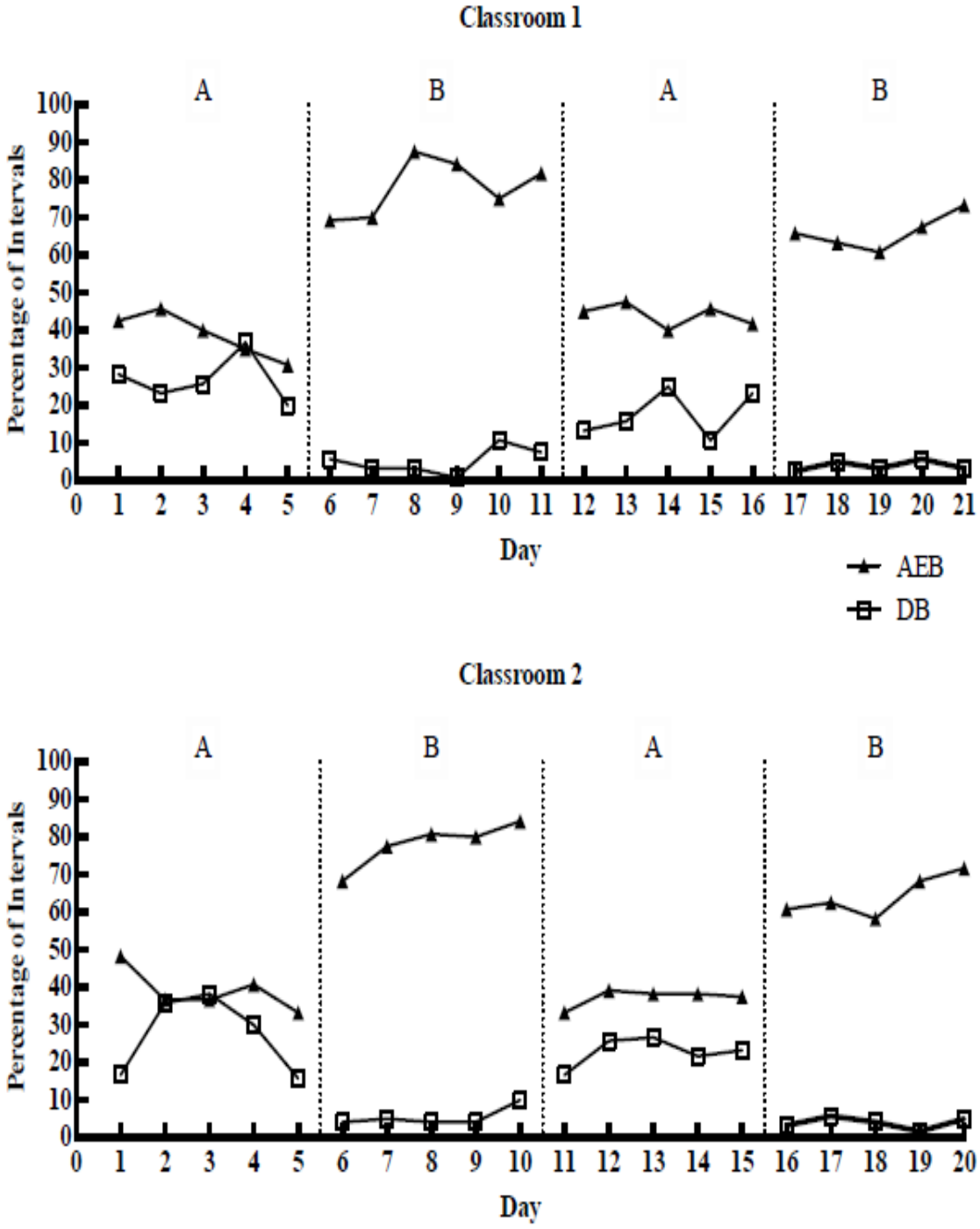

Figure 1. Percentage of intervals of classwide academically engaged behavior (AEB) and disruptive behavior (DB) in Classrooms 1 and 2 across phases.

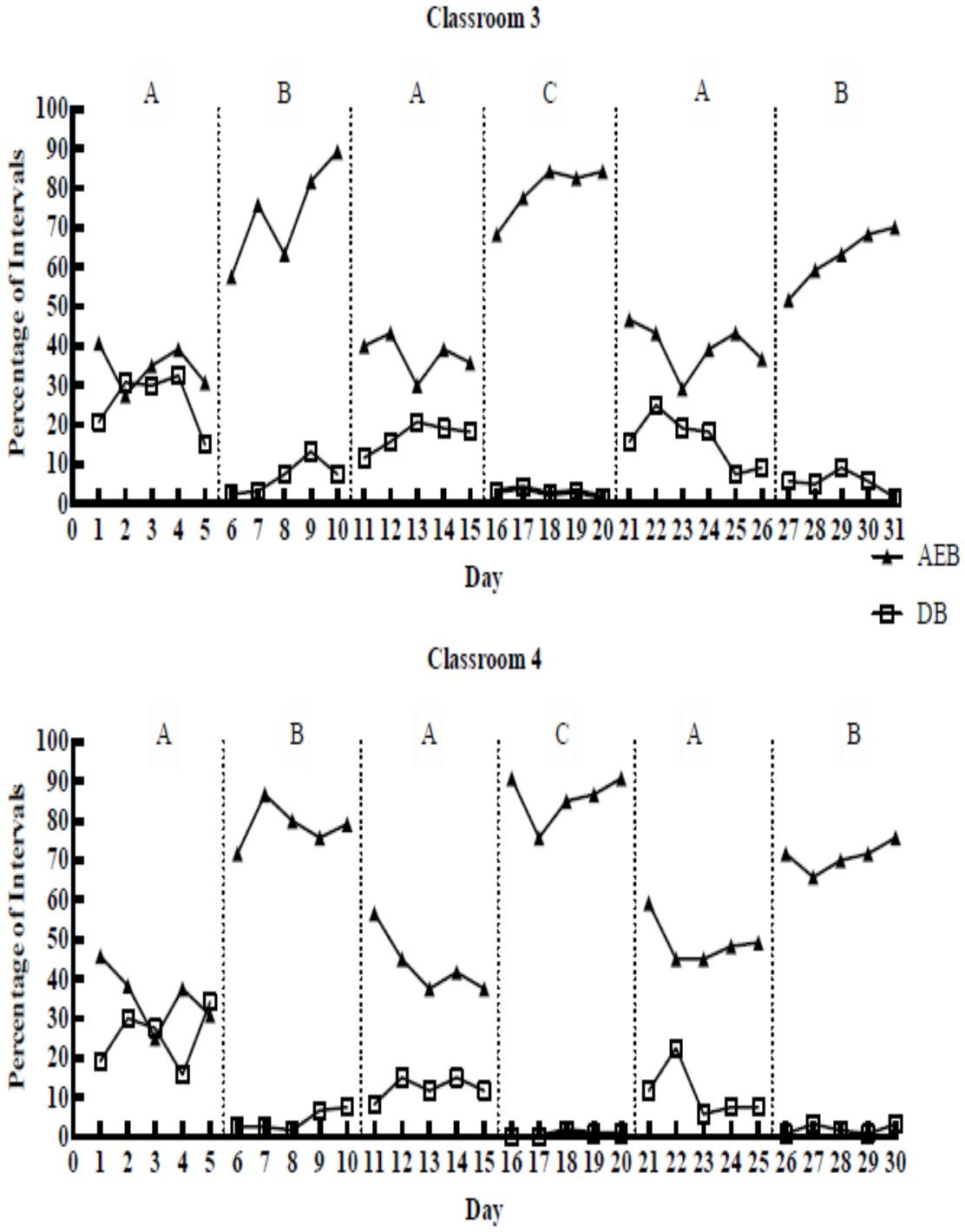

Figure 2. Percentage of intervals of classwide academically engaged behavior (AEB) and disruptive behavior (DB) in Classrooms 3 and 4 across phases.

Table 1

Academically Engaged and Disruptive Behavior Weighted Average Tau-U Effect Sizes

Classroom	AEB	DB
1	1.000	1.000
2	1.000	1.000
3	1.000	0.966
4	1.000	1.000

Note. Tau-U scores between 0 and 0.20 are considered small effects, scores between 0.20 and 0.60 are considered moderate, scores between 0.60 and 0.80 are considered large, and scores above 0.80 are considered large to very large (Vannest & Ninci, 2015).

AEB, which remained stable throughout the phase (AEB = 37.33% of intervals, range = 33.33 – 39.17%). Reimplementation of the intervention resulted in an immediate increase in AEB (M = 64.33% of intervals; range = 58.33 – 71.67%) that trended upward near the end of the phase. As in Classroom 1, weighted Tau-U scores across comparisons indicated that the intervention results are characterized by very large effects for both AEB (Tau-U = 1.000).

Classroom 3

During baseline, AEB in Classroom 3 was relatively stable with the exception of the second session and averaged 34.67% of intervals (range = 27.50 – 40.83%). The GBG played with ClassDojo resulted in an immediate, substantial increase in AEB that continued to increase throughout the phase (M = 73.50% of intervals; range = 57.50 – 89.17%). When the intervention was withdrawn, AEB decreased to near baseline levels (M = 37.67% of intervals; range = 30.00 – 43.33%) and continued to decrease throughout the phase. Implementation of the GBG without ClassDojo (i.e., points tracked on the whiteboard) resulted in an immediate and substantial increase in AEB similar to that of the first B phase (GBG with ClassDojo) and averaged 79.33% of intervals (range = 68.33

– 84.17%). Withdrawal of the intervention again resulted in an immediate reduction in AEB (M = 39.72% of intervals, range = 29.17 – 46.67%). Reimplementation of the GBG with ClassDojo resulted in an immediate increase in level with an increasing trend in AEB, averaging 62.50% of intervals (range = 51.67 – 70.00%). The GBG implemented with ClassDojo resulted in very large effects for AEB (Tau-U = 1.000) as indicated by weighted Tau-U scores across comparisons (A1 vs. B1 and A3 vs. B2). The GBG without ClassDojo also resulted in very large effects for the single comparison (A2 vs. C1) for AEB (Tau-U = 1.000).

Classroom 4

During baseline, AEB in Classroom 4 averaged 35.49% of intervals (range = 25.00 – 45.80%) with variability. Implementation of the GBG with ClassDojo resulted in an immediate, substantial increase in AEB (M = 78.67% of intervals; range = 71.67 – 86.67%) that stabilized at a high level. Upon withdrawing the intervention, AEB immediately decreased and trended downward during the phase (M = 43.66% of intervals; range = 37.50 – 56.65). Implementation of the GBG without ClassDojo resulted in an immediate, substantial increase of AEB (M = 85.83% of intervals; range = 75.83 – 90.83%) that remained high throughout the phase. As with Classroom 3, these results are similar to the improvement seen upon initially implementing the GBG with ClassDojo. The second withdrawal resulted in a considerable reduction in AEB (M = 49.33% of intervals; range = 45.00 – 59.17%). Reimplementation of the GBG with ClassDojo resulted in an immediate, clear increase in AEB (M = 71.00% of intervals; range = 65.83 – 75.83%) with an increasing trend. Similar to the other Classrooms, the GBG implemented with ClassDojo resulted in very large effects for both AEB (Tau-U = 1.000)

as indicated by weighted Tau-U scores across comparisons. As with Classroom 3, the GBG without ClassDojo also resulted in very large effects for the single comparison (A2 vs. C1) for AEB (Tau-U = 1.000).

Disruptive Behavior

Classroom 1

DB during baseline in Classroom 1 was slightly variable and averaged 26.83% of intervals (range = 20.00 – 36.67%). Implementation of the intervention resulted in an immediate reduction in DB with stability (M = 5.28% of intervals; range = 0.83 – 10.83%). Upon withdrawal of the intervention, level of DB increased and became more variable during withdrawal, but did not reach baseline levels (M = 17.66% of intervals; range = 10.83 – 25.00%). Reimplementation of the procedures resulted in an immediate decrease in DB that remained low and stable throughout the phase (M = 4.00% of intervals; range = 2.50 – 5.83%). Weighted Tau-U scores across comparisons indicated that the intervention results are characterized by very large effects for DB (Tau-U = 1.000).

Classroom 2

Similar to Classroom 1, DB during baseline was variable and averaged 27.33% of intervals (range = 15.83 – 38.33%). Following implementation of the intervention, DB decreased immediately and stabilized at a low level (M = 5.50% of intervals; range = 4.17 – 10.00%). Withdrawal of the intervention resulted in an immediate increase in DB, which remained stable throughout the phase (DB = 22.83% of intervals, range = 16.67 – 26.67%). Reimplementation of the procedures resulted in an immediate decrease in DB that remained low and stable (M = 4.00% of intervals; range = 1.67 – 5.83%). As in

Classroom 1, weighted Tau-U scores across comparisons indicated that the intervention results are characterized by very large effects for DB (Tau-U = 1.000).

Classroom 3

During baseline, DB in Classroom 3 averaged 25.83% of intervals (range = 15.00 – 32.50%) and decreased prior to implementation. The GBG played with ClassDojo resulted in an immediate decrease in DB that remained low and stable (M = 6.83% of intervals; range = 2.50 – 13.33%). When the intervention was withdrawn, DB increased and eventually stabilized with an average of 17.17% of intervals (range = 11.67 – 20.83%). Upon implementation of the GBG without ClassDojo, DB decreased immediately and stabilized at a low level (M = 3.00% of intervals; range = 1.67 – 4.17%). Withdrawal of the intervention again resulted in an immediate increase in DB with a decreasing trend (M = 15.83% of intervals; range = 7.50 – 25.00%). Upon reimplementation of the GBG with ClassDojo, DB remained low and averaged 5.50% of intervals (range = 1.67 – 9.17%). The GBG implemented with ClassDojo resulted in very large effects for DB (Tau-U = 0.966) as indicated by weighted Tau-U scores across comparisons (A1 vs. B1 and A3 vs. B2). The GBG without ClassDojo also resulted in very large effects for the single comparison (A2 vs. C1) for DB (Tau-U = 1.000).

Classroom 4

During baseline, DB in Classroom 4 was variable and averaged 25.33% of intervals (range = 15.83 – 34.17%). Implementation of the GBG with ClassDojo resulted in an immediate reduction and greater stability in DB (M = 4.17% of intervals; range = 1.70 – 7.50%). Upon withdrawing the intervention, DB increased slightly and averaged 12.33% of intervals (range = 8.30 – 15.00%). The GBG without ClassDojo resulted in

DB decreasing to near zero levels with stability throughout the phase (M = 0.67% of intervals; range = 0.00 – 1.67%). The second withdrawal resulted in a clear increase in both level and variability DB, which averaged 11.00% of intervals (range = 5.83 – 22.50%). Reimplementation of the GBG with ClassDojo resulted in another immediate reduction of DB to near zero levels that remained low and stable (M = 2.00% of intervals; range = 0.83 – 3.33%). As with all other classrooms, the GBG implemented with ClassDojo resulted in very large effects for DB (Tau-U = 1.000) as indicated by weighted Tau-U scores across comparisons. The GBG without ClassDojo also resulted in very large effects for the single comparison (A2 vs. C1) for DB (Tau-U = 1.000).

Social Validity

Each teacher completed the BIRS (Elliot & Von Brock Treuting, 1991) following the final intervention phase as an indication of their perceptions of social validity. Mean scores for each factor and teacher are presented in Table 2. Overall, each teacher indicated they perceived the intervention procedures to be acceptable and efficient, indicated by mean scores above 4.0 across each factor. Despite positive outcomes, each teacher rated their perception of the overall efficacy of the intervention effects as neutral (ratings of 3.86 for each teacher). The overall item mean was 4.83 for Teacher 1 and 4.61 for Teacher 2. Teacher 2 was also asked to indicate if she preferred either version of the intervention. She indicated that she liked implementing each version of the intervention, but noted a slight preference for the GBG with ClassDojo due to it being more "interesting and fun for the students." However, she further noted that at times it was difficult to project ClassDojo when she needed her projector or computer (e.g., displaying PowerPoint or videos to the class). She indicated her preference would be to use

ClassDojo when possible and collect points on the whiteboard on days her projector would be needed for other tasks.

Table 2

Behavior Intervention Rating Scale Results

Teacher	Effectiveness	Acceptability	Efficiency
1	3.86	5.27	5.00
2	3.86	5.07	4.00

Note. Mean scores for each factor are presented. A score of 6 indicates the teacher strongly agrees with the statement, 5 indicates agreement, 4 indicates slight agreement, 3 indicates slight disagreement, 2 indicates disagreement, and 1 indicates strong disagreement. Higher scores indicate higher levels of perceived effectiveness, acceptability, and efficiency. Scores near and above 4.0 are interpreted as the teacher indicating positive perceptions of the intervention

Acceptability

Student acceptability of the intervention procedures was measured with a modified version of the CIRP (Witt & Elliott, 1985) at the conclusion of the final intervention phase. Only students who obtained parental consent completed the CIRP. Three of 19 students in Classroom 1 returned parental consent. Average item ratings in Classroom 1 were 5.11 (out of 6). In Classroom 2, two of 14 students obtained parental consent. Their average item rating was 5.17. Four of 17 students returned parental consent in Classroom 3. The average item score for Classroom 3 was 5.50. Eight of 16 students returned consent forms in Classroom 4. Their average item score was 5.33. Overall, each student found the procedures to be acceptable, as no student's individual average item score was below the midpoint. The average item score across all 17 students from each classroom was 5.31. Students in Classrooms 3 and 4 were also asked to indicate if they preferred either version of the intervention. Of the 4 students who returned consent in Classroom 3, three of the students indicated no preference, whereas

the fourth student noted a preference for the GBG without ClassDojo, suggesting the program's noise was distracting. In Classroom 4, four of the eight students indicated no preference and the remaining four preferred the GBG with ClassDojo. Two students indicated it was "more fun" and "more easy" while the other students did not provide a reason for their preference.

CHAPTER IV – DISCUSSION

The purpose of the present study was to assess the effects of a positive version of the GBG implemented with ClassDojo in four secondary classrooms on classwide academically engaged and disruptive behavior. Teacher ratings of social validity and student ratings of acceptability were also obtained. Although the traditional version of the GBG has extensive empirical support (Bowman-Perrott et al., 2015), the positive version of the Game is more consistent with SW-PBIS, as it may increase the provision of behavior specific praise and reinforcement of appropriate behavior. As more schools continue to adopt SW-PBIS (Horner & Sugai, 2016), the need for classwide procedures that could be incorporated into SW-PBIS as Tier I and II interventions will continue to become more essential.

The results of the present study are consistent with previous research supporting the use of a positive version of the GBG (e.g., Darch & Thorpe, 1977; Robertshaw & Hiebert, 1973; Tanol et al., 2010; Wright & McCurdy, 2012) and further the literature demonstrating such procedures can be successful with older students (e.g., Dadakhodjaeva, 2017; Lynne, 2015; Lynne, 2016). The present study also furthers the support of using ClassDojo in conjunction with established classroom interventions such as the GBG and Tootling (e.g., Dadakhodjaeva, 2017; Dart et al., 2014; Dillon, 2016; Lynne, 2016).

The present study extends the literature base by demonstrating the effectiveness of a positive version of the GBG with ClassDojo throughout an entire class period rather than during a brief 20-minute period (e.g. Dadakhodjaeva, 2017; Lynne, 2016). Further, this study incorporated a variable interval cueing system to aid the teachers in scanning

consistently and to provide consistent schedules of classroom scanning rather than allowing teachers to decide when to scan the classroom (e.g., Dadakhodjaeva, 2017; Lynne, 2016). As such, teachers demonstrated excellent integrity with regard to regularly scanning the classroom and contingently rewarding students for engaging in appropriate classroom behavior. The present study also extended previous research by assessing the effects of the intervention with a withdrawal design across 4 separate classrooms, providing 12 demonstrations of effects of the GBG with ClassDojo (Kratochwill et al., 2010). Finally, despite a small return rate, the present study offers initial indications that a positive version of the GBG implemented with ClassDojo is acceptable to secondary-aged student.

Research Questions

Research Question 1

The results of the present study suggest the GBG implemented with ClassDojo was effective in improving classwide academically engaged behavior (AEB) in four classrooms. This is indicated by clear and immediate increases in AEB between baseline/withdrawal phases and subsequent intervention phases. Furthermore, there was no overlap between any data points when comparing baseline/withdrawal phases and subsequent intervention phases, resulting in very large effects (Tau-U = 1.000) for each comparison in each classroom. Due to technical difficulties, one phase of a positive version of the GBG without ClassDojo (i.e., points collected in a traditional way) was conducted in Classrooms 3 and 4. This phase also resulted in very large effects in improving AEB similar to that found in the GBG with ClassDojo phases, suggesting that

the GBG implemented with ClassDojo may be as equally effective as the GBG with points collected in the traditional manner at improving AEB.

Research Question 2

The GBG with ClassDojo was also effective in reducing classwide disruptive behavior (DB) in each of the four classrooms. Although baseline and withdrawal levels of DB were only slightly to moderately elevated, differences are marked by clear reductions in DB upon implementation of the GBG with ClassDojo, as characterized by little (Classroom 3) to no overlap (Classrooms 1, 2, 4) when comparing preceding baseline/withdrawal phases, resulting in very large effects on DB. Furthermore, across all observations, DB only occurred during more than 10% of intervals during 2 observations (Classroom 1, 10.83% of intervals; Classroom 3, 13.33% of intervals), indicating the intervention procedure was associated with very low rates of problem behavior. As was noted with AEB, Classrooms 3 and 4 also engaged in very low rates of DB when the Game was implemented without ClassDojo. These phases were also characterized by no overlap in DB data relative to preceding withdrawal phases. Taken together, it is clear that a positive version of the GBG was effective at improving both classwide AEB and DB, both when implemented with and without ClassDojo technology, in four classrooms at a middle-school implementing SW-PBIS.

Research Question 3

In addition to measuring student outcomes, post-intervention perceptions of teacher social validity were also assessed via the BIRS (Elliot & Von Brock Treuting, 1991). The BIRS measures rater's perception of intervention acceptability, effectiveness, and efficiency. Teacher 1 rated the intervention as highly acceptable (5.27) and efficient

(5.00), but indicated a lower rating regarding effectiveness (3.86). Although his overall effectiveness score fell below 4.00, his score was affected by outlying low scores on 2 items (2.00). His remaining scores on the scale (5 items) averaged 4.60. The two items rated low by Teacher 1 assessed perceptions of the intervention being effective when no longer in effect, and whether or not the intervention would be effective in changing behavior in other settings, such as at home. Given that withdrawal of the intervention reduced AEB to near baseline levels in each of his classrooms (Classrooms 1 and 2), it is understandable and expected that he would rate that item low. Furthermore, given that the intervention did not target behavior in other settings, his low rating should not be considered as an indictment against using the program in secondary classrooms. Teacher 2 also rated the intervention as acceptable (4.61) and efficient (4.00), while also giving a neutral rating with regards to effectiveness (3.86). Teacher 2 only rated 1 item below 4.00, and as with Teacher 1, this item is on the effectiveness factor. Teacher 2 slightly disagreed (3.00) with the item regarding the intervention improving behavior problems beyond the target behaviors. Regarding each version of the intervention, Teacher 2 suggested each intervention could/should be used interchangeably depending upon classroom resources and need. Overall, it is clear that each teacher approved of the intervention procedures.

Research Question 4

Ratings of student acceptability were also assessed post-intervention. All students returning parental consent following the final intervention session completed a modified version of the CIRP (Witt & Elliott, 1985). Although few students returned parental consent (return rate of 25.76%), average ratings across each class (5.31) suggests the

middle school students considered the procedures acceptable. In Classrooms 3 and 4, the majority of students (7 of 12) indicated no preference for the Dojo vs. no Dojo versions of the GBG. Four students preferred the version with ClassDojo and one student indicated a preference for the traditional method of recording points. Although this represents a small sample, it suggests that middle school students may find either version (Dojo or no Dojo) of the intervention acceptable.

Limitations

Although the present study demonstrated that a positive version of the GBG implemented with ClassDojo was clearly effective at increasing classwide AEB while concomitantly reducing classwide DB, the results must be considered in light of the following limitations. First, implementation of ClassDojo technology is reliant upon technology that is subject to failure (e.g., computer, projector, internet). In this study, Teacher 2's projector was inoperable, resulting in one phase of the intervention being implemented without Dojo in each of her classes (Classrooms 3 and 4). The results observed during these phases provide initial data to suggest the ClassDojo version is as equally effective at improving student behavior as the traditional technique for recording points, which is supported by numerous studies (Bowman-Perrott, et. al, 2015). However, the present results regarding the GBG without Dojo should be considered tentative as a replication of this version of the intervention was not conducted to provide more definitive evidence of experimental control.

On one occasion, Teacher 2 failed to end the game prior to the final bell, signaling the end of class. Given that students at the school only had 3 minutes to transition to their next class, the Teacher chose to reward the winning team on the following day.

Fortunately, despite not receiving reinforcement immediately following the intervention, student behavior did not appear to be impacted in subsequent observations and the Teacher correctly concluded the game in all other instances.

As with all studies conducted in a naturalistic setting (e.g., general education classrooms), some procedural deviations were beyond the control of the researcher. Such deviations included changes in schedule, student attendance, daily task demands, and school wide-testing or activities. Although these occurred occasionally, the GBG and obtained results were clearly robust to such naturally occurring events and circumstances.

Although several rewards offered during the course of the intervention were free to the teacher (e.g., SW-PBIS tickets, participation grades, free-time), other rewards (e.g., snacks, candy, pencils) were purchased by the researcher and provided to the teachers at no charge. Although the cost of items was low, it may not be feasible for teachers to provide such rewards to their classes on a daily basis. Additionally, other school districts or parents may restrict the use of snacks and candy as rewards due to potential health concerns. As such, this may affect the external validity of the present study as it is unclear how students would respond to the intervention if purchased items such as snacks and candy were not offered as potential rewards. However, to reduce the cost of implementation, teachers could continue to mix the provision of free and purchased rewards to the extent some financial support is available from the school.

In addition to providing the teachers with tangible rewards, the primary researcher provided each teacher with a significant amount of support throughout the course of the intervention in the form of daily observations and feedback. These procedures may have

increased the teachers' ability and likelihood of implementing the intervention beyond what would be expected if more typical levels of support were provided.

Although the results of the present study offer further support for the use of the GBG with ClassDojo with secondary-aged student, it was conducted in only 4 middle-school classrooms all located within 1 school. Additionally, the procedures were only implemented by 2 teachers. Therefore, the procedures should be replicated in additional studies and across unique populations before stronger conclusions regarding external validity can be made. Furthermore, the small sample-size obtained regarding ratings of student acceptability limit the confidence in the resulting ratings that indicated high acceptability.

Given that the data were presented on the class as a whole rather than individual students, conclusions regarding individual students' responses to the intervention procedures cannot be drawn. However, the large effects observed across each classroom suggest the majority of students likely benefited from the intervention to some extent.

Future Research

The results obtained in the present study further the evidence of the effectiveness of the GBG with older students and warrant continued research on the topic. First, although not a purpose of the present study, technical difficulties allowed for initial data collection comparing the GBG with and without ClassDojo. Although each version resulted in very large effects on improving classwide AEB and DB in two classrooms, only one phase was conducted without Dojo. Furthermore, order effects cannot be discounted as each class received the GBG with ClassDojo prior to playing the Game without the online points platform. As such, future research could determine the

differential effects of the intervention with and without ClassDojo in a more controlled, systematic manner. Such research could also provide further information regarding teacher and student preferences for each procedure.

In addition, although a positive version of the GBG is more consistent with SW-PBIS, the traditional version of the GBG using DRL has extensive empirical support. Only two known studies have directly compared the traditional version of the intervention to the positive version and both were conducted in an elementary school setting (Tanol et al., 2010; Wright & McCurdy, 2012). Future studies could expand this research to determine the comparative effects and preferences of the positive and traditional versions of the GBG with older students.

Although comparing each version of the intervention can provide insight on the relative effectiveness of each intervention, future research could also assess the effects of combining the rewarding and reprimanding procedures by assessing the effects of using the positive version with a response cost procedure. ClassDojo contains a response cost procedure that removes points contingent on rule violations and disruptive behavior that can be used in conjunction with the point system utilized in the present study. Although classwide levels of disruptive behavior reduced to near-zero levels in this study, support for a combination positive + response cost version of the GBG could potentially provide practitioners with another intervention technique to implement in classrooms if the low rates of AEB are concomitantly occurring with high rates of DB.

Additional research could also address the threats to external validity present in the current study by assessing the effects of the procedures across different populations, with different rewards, and on individual students rather than on the class as a whole.

Implications and Conclusions

The results of this study provide clear, consistent support for the use of a positive version of the GBG implemented with ClassDojo with middle-school students. The intervention procedures resulted in immediate, notable improvements in classwide AEB and reductions in DB to near-zero levels across each of the four Classrooms. The ClassDojo technology provided teachers a simple, consistent platform on which to record and display points and praise statements to the class that potentially eases implementation of the GBG for teachers. As such, each teacher demonstrated high levels of integrity with the intervention procedures and indicated the procedures were acceptable, effective, and efficient in improving student behavior. Lastly, while few students were polled, they found the GBG with ClassDojo to be acceptable. Overall, these data suggest the GBG implemented with ClassDojo can be a successful intervention technique in middle school classrooms as either as Tier I or II intervention within a SW-PBIS system and should be considered for practitioners when developing intervention plans targeting classwide behavior and teacher management problems.

APPENDIX A – Teacher Consent Form

University of Southern Mississippi

Consent Document for Research Participants

Dear Teacher,

Hello, my name is Blake Ford, and I am graduate student at University of Southern Mississippi in the School Psychology Doctoral Program. I am currently conducting my dissertaion, which will assess the effectiveness of a classroom based behavioral intervention. This study is being conducted under the supervision of Dr. Daniel Tingstrom.

Your classroom has been referred for inclusion in this study for low levels of on-task behavior and/or elevated levels of classwide disruptive behaviors. This intervention aims to improve academic engagement, reduce classwide disruptive behavior, and aid in classroom management procedures. Please consider the following when deciding if you will participate in this study:

Title of the Study:
Utilizing ClassDojo and the Good Behavior Game in Secondary School Settings

Purpose:
As previously stated, the purpose of the study is to assess the effectiveness of a classwide intervention aimed at increasing levels of academic engagement and reducing classroom disruptive behavior. The intervention, The Good Behavior Game, utilizes classroom management and reinforcement procedures to effect change in the classroom setting. At the end of the study, you were asked to rate various components and answer qualitative questions about the effectiveness of the intervention procedures.

Procedure:
If you agree to participate in the study, you were asked to perform several tasks aimed in improving classroom management. Prior to implementation of the interventions, you were required to complete separate consultation and training sessions with me. The consultation session will be conducted to determine that the problem behaviors occurring in your classroom are appropriate for this study. If they are not, more appropriate services were provided.

Following the consultation session, a series of screening observations will occur to further verify that your classroom is qualified for inclusion in the study. During this period, you were asked to continue to implement your normal classroom management procedures for dealing with problem behaviors. You will also be asked to “mark” or

"tally" times when your class is academically engaged. You were required to utilize a notification device to cue you on a randomized schedule to determine if your class is engaged throughout the class period. The device will be discreet and will not interrupt classroom activities or lecture. These marks were used to determine criterion level for the intervention.

If your classroom qualifies for participation in the study, you were required to attend a training session with me to explain and practice the steps of each intervention. Upon displaying 100% of the steps successfully and being able to accurately describe each step, the intervention phase will begin.

The Good Behavior Game is a teacher led classroom intervention. This study will assess the effects of a version of the intervention incorporated with a technology component. The intervention requires you to split the class into two teams, which will compete to earn points for engaging in appropriate behaviors during class. During the intervention, you were required to give points to the teams as a result of the team being academically engaged when you are cued with the notification device. The goal of the game is for the students to earn as many points as possible during the intervention, as the team with the most marks at the end of the period would win the game. It is also possible for each team to win the game if both teams reach a set criterion of points by the end of the period. At the end of the class, the winning team(s) would then earn access to a reward. Each day that the intervention is in place, you were required to state the rules of the game (a script were provided), award marks as appropriate, and hand out rewards (which were provided) to the winning team or teams. While the traditional version of the intervention requires teacher to manually award points on a board and provide verbal feedback, this intervention will assess the effectiveness of using an online feedback program: ClassDojo. As part of the intervention, you were required to use the Dojo program to award points to teams. The Dojo program will then provide visual feedback to the team awarded the point. I will assist you in setting up your free ClassDojo account prior to beginning the intervention.

Throughout the study, classroom observations were conducted multiple times a week by myself, another trained graduate student from the USM School Psychology program, or a trained undergraduate student from USM. The observers will not interfere with you or your class during this time. The observers were measuring levels of disruptive behavior, academically engaged behavior, and your integrity with the treatment protocol (you were provided with a checklist to aid you in implementation). At no time will identifying information be collected on individual students in your classroom. You were provided with feedback on the implementation as needed throughout the study.

The study will take place in multiple phases, beginning with the screening phase. After a period of time implementing the intervention, it will be withdrawn for a brief period of time to allow for demonstration of experimental control. Following this period, you will re-implement the intervention again. Following this phase, your acceptability for the intervention or interventions utilized were assessed.

Benefits:
Agreeing to participate in this study may offer several benefits for you and your students. By participating in this study you were trained on the implementation of a new intervention technique that can be used with other students. An additional benefit is the expected decrease in inappropriate behaviors and the increased appropriate behaviors by your students.

Risks:
There appear to be very few risks for either you or your students participating in this study. The greatest discomfort for you may be related to implementing a new procedure in the classroom. To reduce discomfort, I and/or other trained graduate students will provide training, materials, and were available to answer any questions you may have. Your students should not experience any discomfort from the implementation of the recommended intervention and identifying information will not be collected on any students in your classroom.

Confidentiality:
All interviews, observations, and other information obtained during this study were kept strictly confidential. Your name, students' names, and other identifying information will not be disclosed to any person not connected with this study. Results from this research project may be shared at professional conferences or published in scholarly journals; however, all identifying information were removed from publications and/or presentations.

Consent:
Your participation in this study is entirely voluntarily. In addition, you may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Further services, if needed, may be provided outside the scope of this study. Whereas no assurance can be made concerning results that may be obtained (as results from investigational studies cannot be predicted) the researcher will take every precaution consistent with the best scientific practice.

If you agree to participate, please read, sign, and return the following page. Please keep this letter for your records. If you have any questions about this study, please contact Blake Ford (xxx-xxx-xxxx; xxxx.xxxx@eagles.usm.edu) or Dr. Daniel Tingstrom (xxx-

xxx-xxxx; xxxx.xxxx@usm.edu). This project and this consent form have been reviewed by the Human Subjects Protection Review Committee at USM, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820.

Sincerely,

_____

W. Blake Ford
School Psychologist in Training
The University of Southern Mississippi

Please Read, Sign, and Return the Following:

I have read the above documentation and consent to participate in this project. I have had the purpose and procedures of this study explained to me and have had the opportunity to ask questions. I am voluntarily signing this form to participate under the conditions stated. I have also received a copy of this consent. I understand that I were asked to implement a classroom-based intervention called the Good Behavior Game, and observations were conducted in the classroom on the students' behavior. In order to take part in this study, I will be required to complete a consultation session, to implement the interventions, and to complete a structured questionnaire to assess my satisfaction with the intervention. In addition, I will be trained on all of the intervention procedures by the primary experimenter or another graduate student. I further understand that all data collected in this study were confidential and that my name and the students' names will not be associated with any data collected. I understand that I may withdraw my consent for participation at any time without penalty, prejudice, or loss of privilege.

_____ _____

Signature of Teacher *Date*

_____ _____

Signature of Witness *Date*

APPENDIX B – Teacher Demographic Form

Teacher Demographics:

Name _____

Gender _____

Race/Ethnicity _____

Highest Degree attained _____

Number of years teaching _____

Number of years teaching at this school _____

General Classroom Demographics:

How many students are in your class? _____

How many males? _____ How many females? _____

Number of: African-American _____ Caucasian _____Hispanic _____ Asian _____

SPED Student Demographics:

Only complete this section if you have inclusion students in your classroom

How many SPED students are in your classroom? _____

Please list all the disability categories students receive services under (do NOT include names or any other identifying information):

_____

_____

_____

Taken and adapted from Dillon (2016).

APPENDIX C – IRB Letter of Approval

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15082602
PROJECT TITLE: Evaluation of a Positive Version of the Good Behavior Game Utilizing Class Dojo Technology in Secondary Classrooms
PROJECT TYPE: New Project
RESEARCHER(S): William Blake Ford
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 09/10/2015 to 09/09/2016
Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX D – Teacher Script for the Good Behavior Game with ClassDojo

Introduce the Intervention:

Today we are going to have a competition. I have split the class into two teams [announce which students are on each team and show them the team names on the ClassDojo projection]. The teams will compete to determine which students will win one of these rewards [draw the name of two rewards from the bag]. At the end of the end of the class, the team with the most points will win and get to vote on which prize they want. To earn points, each member of the team must be on-task and not breaking any of these rules when I decide I am ready to give out points [read and explain the classroom rules]. I will use the computer to award points at random times throughout the class. It is also possible for both teams to win the game. If both teams earn more than [state criterion] points, everyone will get a reward; however, the team with the most points will get to vote on which reward everyone will receive.

Notes to help with each intervention:

- As the class begins to understand the intervention, you can simplify the introduction. However, you must remind the class of the rules and how to win EVERY DAY!
- Immediately following the introduction of the game, turn on your notification device
- When notified, scan the class and determine if each of the members of both, one, or neither team are academically engaged and reward a point to the appropriate team or teams.
- When you deliver a mark, choose appropriate positive statement that indicates what the team was doing to earn the point (e.g., “working quietly”, “paying attention to the teacher”). This statement will be displayed to the class as the team/teams are awarded a point.
- At the end of the period, allow the team with the most points to choose which prize the winning team or teams receive. If both teams are above the criterion, both teams earn a reward. If not, only the team with the highest number of points wins.

APPENDIX E – Intervention Integrity Checklist

Treatment Integrity Steps	
Teacher announces the start of the game	✓ X N/A
Teacher splits the class into two teams and displays the teams on ClassDojo	✓ X N/A
Intervention class room rules poster is posted	✓ X N/A
Teacher reviews rules with the class	✓ X N/A
Teacher draws two possible rewards	✓ X N/A
Criterion level is told to the students and displayed on the board	✓ X N/A
Teacher reminds students of how to win the game	✓ X N/A
Teacher scans the class when notified at least 80% of the time	✓ X N/A
Teacher gives points contingent upon academic engagement after scanning at least 80% of the time	✓ X N/A
Teacher announces when the game has ended	✓ X N/A
Teacher correctly determines which team(s) won	✓ X N/A
Teacher allows team with the most points to vote on a reward	✓ X N/A
Teacher allows winning team(s) to access the reward	✓ X N/A
Which team met the goal? Team 1 Team 2 Neither Team	
Reward Chosen: _____ Was the reward given? Yes No	
Steps completed	/
Percentage of Steps completed	

a. Circle the appropriate mark for each step: ✓ for step completion, X for step omission, or N/A for not applicable.

Taken and adapted from Ford (2015).

APPENDIX F – Behavior Intervention Rating Scale

Behavior Intervention Rating Scale (BIRS; Elliot and Von Brock Treuting, 1991)

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

This was an acceptable intervention for the students' problem behavior(s).

1 2 3 4 5 6

Most teachers would find this intervention appropriate for behavior problems in addition to the one(s) described.

1 2 3 4 5 6

The intervention proved effective in changing the students' problem behavior(s).

1 2 3 4 5 6

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

1 2 3 4 5 6

The students' behavior problem(s) were severe enough to warrant use of this intervention.

1 2 3 4 5 6

Most teachers would find this intervention suitable for the behavior problem(s) described.

1 2 3 4 5 6

I would be willing to use this in the classroom setting again.

1 2 3 4 5 6

The intervention would *not* result in negative side-effects for students.

1 2 3 4 5 6

The intervention would be appropriate intervention for a variety of students.

1 2 3 4 5 6

The intervention is consistent with those I have used I have used in classroom settings.

1 2 3 4 5 6

The intervention was a fair way to handle the students' problem behavior(s).

1 2 3 4 5 6

The intervention is reasonable for the behavior problem(s) described.

1 2 3 4 5 6

I like the procedures used in the intervention.

1 2 3 4 5 6

The intervention was a good way to handle these students' behavior problem(s).

1 2 3 4 5 6

Overall, the intervention was beneficial for the students.

1 2 3 4 5 6

The intervention quickly improved the students' behavior.

1 2 3 4 5 6

The intervention will produce a lasting improvement in the students' behavior.

1 2 3 4 5 6

The intervention improved the students' behavior to the point that it is not noticeably deviate from other students' behavior.

1 2 3 4 5 6

Soon after using the intervention, the teacher noticed a positive change in the problem behavior.

1 2 3 4 5 6

The students' behavior will remain at an improved level even after the intervention is discontinued.

1 2 3 4 5 6

Using the intervention should not only improve the students' behavior in the classroom, but also in other settings (e.g., other classrooms, home).

1 2 3 4 5 6

When comparing these students with well-behaved peers before and after the use of the intervention, the students' and the peer's behaviors are more alike after using the intervention.

1 2 3 4 5 6

The intervention produced enough improvement in the students' behavior so the behavior no longer is a problem in the classroom.

1 2 3 4 5 6

Other behaviors related to the problem behavior(s) were also improved by the intervention.

1 2 3 4 5 6

APPENDIX G – Children's Intervention Rating Profile

DO NOT WRITE YOUR NAME ON THIS PAPER

Tell Us What You Think!

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

1. I liked participating in the Competition used in my class.	1	2	3	4	5	6
2. I think other students in my class liked the Competition.	1	2	3	4	5	6
3. I like the rewards I received during the Competition.	1	2	3	4	5	6
4. The Competition helped me to do better in class.	1	2	3	4	5	6
5. The Competition was fair.	1	2	3	4	5	6
6. The Competition did NOT cause me problems in class.	1	2	3	4	5	6

APPENDIX H – Parental Consent Form

Parental Permission Requested

Overview
Your child's teacher has been implementing a new classroom management strategy over the past several weeks as part of a local research project. Your child is being asked to complete a brief survey about the intervention to determine if he/she liked the intervention. The survey will take 1-2 minutes to complete and should not cause any discomfort to your child. If you elect for your child not to complete the survey, they will be asked to complete other school work while his/her classmates complete the questionnaire. Your child's academic standing will not be affected by completing or non-completion of the survey. No identifying information, including your child's name, will be collected.

Background Information
This survey will be used by researchers at The University of Southern Mississippi to evaluate the acceptability and effectiveness of a classroom management intervention. The intervention was utilized by your child's teacher over the past several weeks to determine its effects on academic engagement and disruptive behavior. This research is intended to improve the services we can give children in public schools and in no way is associated with agencies other than The University of Southern Mississippi and your child's school district.

Additional Information
A copy of the survey will be made available to you upon request. Students returning a signed copy of this form will be provided with a small reward. Rewards will be provided for any child returning the form regardless of parental decision of consent.

If you have questions or concerns, please contact Blake Ford by phone or e-mail.

Blake Ford
xxx-xxx-xxxx
xxxx.xxxx@eagles.usm.edu

Consent
By signing below, I acknowledge that I have read the information in this form. **I agree to allow** my child to take part in this brief survey.

_____
Child's Name

_____ _____
Parent/Guardian's Name Parent/Guardian's Signature

_____ _____
Relationship to Child Date

By signing this portion of the consent form, I acknowledge that I have read the information in this form. **I will not allow** my child to take part in this survey.

_____
Child's Name

_____ _____
Parent/Guardian's Name Parent/Guardian's Signature

_____ _____
Relationship to Child Date

APPENDIX I – Behavioral Observation Sheet

Teacher Initials:_____ Date:_____ Observer:_____ IOA:_____

Interval	AEB	DB	Interval	AEB	DB	Interval	AEB	DB
1.1			7.5			14.3		
1.2			7.6			14.4		
1.3			8.1			14.5		
1.4			8.2			14.6		
1.5			8.3			15.1		
1.6			8.4			15.2		
2.1			8.5			15.3		
2.2			8.6			15.4		
2.3			9.1			15.5		
2.4			9.2			15.6		
2.5			9.3			16.1		
2.6			9.4			16.2		
3.1			9.5			16.3		
3.2			9.6			16.4		
3.3			10.1			16.5		
3.4			10.2			16.6		
3.5			10.3			17.1		
3.6			10.4			17.2		
4.1			10.5			17.3		
4.2			10.6			17.4		
4.3			11.1			17.5		
4.4			11.2			17.6		
4.5			11.3			18.1		
4.6			11.4			18.2		
5.1			11.5			18.3		
5.2			11.6			18.4		
5.3			12.1			18.5		
5.4			12.2			18.6		
5.5			12.3			19.1		
5.6			12.4			19.2		
6.1			12.5			19.3		
6.2			12.6			19.4		
6.3			13.1			19.5		
6.4			13.2			19.6		
6.5			13.3			20.1		
6.6			13.4			20.2		
7.1			13.5			20.3		
7.2			13.6			20.4		
7.3			14.1			20.5		
7.4			14.2			20.6		

Academically Engaged Behavior: ____/120 = ____%

Disruptive Behavior: ____/120 = ____%

APPENDIX J – Procedural Integrity for Teacher Training Checklist

Procedural Integrity Steps	
The trainer explains the rules and procedures of the intervention to the teacher	✓ X N/A
The trainer reviews the teacher script with the teacher	✓ X N/A
The trainer helps the teacher develop and set up a ClassDojo account	✓ X N/A
The trainer role-plays the intervention with the teacher, allowing the teacher to act as a student in the classroom.	✓ X N/A
The trainer role-plays the intervention with the teacher, allowing the teacher to practice implementing the steps of the game.	✓ X N/A
The trainer provides appropriate feedback contingent upon teacher mistakes during the role-play implementation session	✓ X N/A
The trainer insures the teacher has a full understanding of the intervention components	✓ X N/A
Steps completed	/
Percentage of Steps completed	

a. Circle the appropriate mark for each step: ✓ for step completion, X for step omission, or N/A for not applicable.

Taken and adapted from Ford (2015).

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