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THE TOOTLING INTERVENTION WITH CLASSDOJO: EFFECTS  
ON CLASSWIDE DISRUPTIVE BEHAVIOR AND ACADEMICALLY  
ENGAGED BEHAVIOR IN AN UPPER ELEMENTARY SCHOOL SETTING

by

Melissa Bryanne McHugh Dillon

A Dissertation  
Submitted to the Graduate School  
and the Department of Psychology  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

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August 2016

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## ABSTRACT

### THE TOOTLING INTERVENTION WITH CLASSDOJO: EFFECTS ON CLASSWIDE DISRUPTIVE BEHAVIOR AND ACADEMICALLY ENGAGED BEHAVIOR IN AN UPPER ELEMENTARY SCHOOL SETTING

by Melissa Bryanne McHugh Dillon

August 2016

The current study was designed to replicate and extend the literature on the effectiveness of a classroom intervention known as Tootling (Skinner, Skinner, & Cashwell, 1998) to include an interactive technological component, ClassDojo, to decrease disruptive classroom behavior as well as increase academically engaged behavior. Tootling is a peer-monitoring intervention that encourages students to report instances of appropriate behaviors they have seen their peers perform. Thus far, studies utilizing direct observation data to measure disruptive behavior during Tootling (Cihak, Kirk, & Boon, 2009; Lambert, 2014; Lambert, Tingstrom, Sterling, Dufrene, Lynne, 2015; Lum, Tingstrom, Dufrene, Radley, & Lynne, 2015; McHugh, Tingstrom, Radley, Barry, & Walker, 2014) have shown reductions in disruptive behavior when Tootling is in place. To extend the research on Tootling, direct observation data of disruptive and academically engaged behaviors were collected on three classes of upper elementary school students (i.e., fifth grade) and instructors in two elementary schools in a Southeastern state. Tootling was recorded through the ClassDojo website and publically projected to the classroom, which differed from previous studies that employed note cards, hand-counted Tootles, and inconsistent behavioral feedback. Reinforcement for tootling could be achieved through a classroom-interdependent group contingency. An

ABAB withdrawal design was used in three classrooms, with a multiple baseline element across two classrooms, to determine the effectiveness of the intervention for decreasing classwide disruptive behavior and increasing academically engaged behaviors during intervention phases. Results indicated decreases in classwide disruptive behaviors and increases in academically engaged behaviors during intervention phases as compared to baseline and withdrawal phases across all three classrooms. Limitations of the present study and directions for future research are discussed.

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## CHAPTER I

### INTRODUCTION

In the classroom setting, it is imperative that teachers receive every minute of academic instruction they can access. High-stakes testing, and the shift from No Child Left Behind to new Common Core State Standards has intensified the pressure on teachers and administrators to achieve high levels of student performance (Watson, Johanson, Loder, & Dankiw, 2014). As a result, decreasing disruptive student behaviors in the classroom that can hinder learning by reducing instructional time is of the utmost importance; however, it is not sufficient to be satisfied with a reduction in disruptive behavior. Replacement behaviors must be taught as well. Ideally, teachers desire students to be academically engaged, and relate well to their peers. In fact, there is evidence that prosocial and on-task behavior is linked to higher academic achievement (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Hoge & Luce, 1979). In order to promote a positive learning environment and reduce undesirable behaviors, many school districts have implemented a behavioral support system called Positive Behavioral Interventions and Support (PBIS, Luiselli, Putnam, & Sunderland, 2002). PBIS is a system that encourages appropriate and prosocial student behaviors across school settings to foster a positive environment that is conducive to learning. PBIS is grounded in principles that encourage data-driven decisions, provide a continuum of support to students, aim to prevent misbehavior, and encourage preventative teaching of appropriate behaviors (Sugai & Horner, 2002).

When a PBIS system is in place, students experience positive outcomes from demonstrating appropriate behavior (e.g., teacher praise, a tangible item, a token to be exchanged for a reward later). Students demonstrating inappropriate behaviors receive no reinforcement.

Often, a three-tier system is utilized within a PBIS system to offer different levels of support ranging from school-wide, universal systems (Tier 1) to individualized interventions (Tier 3, Walker et al., 1996). Single interventions that target the entire classroom may be sufficient for students at the Tier 1 or Tier 2 level. Additionally, they may be easier to implement than multiple, individual student interventions.

Using technology in the classroom may be one way to simplify behavior management, make interventions more feasible, and ease implementation. Between 1994 and 2002, the percentage of public schools with Internet access increased from 35% to 99%, and by the 2001- 2002 school year, 87% of these schools reported that professional training on integrating the Internet into the curriculum was offered to teachers (Kleiner & Lewis, 2003). Instructional technology tools are rapidly changing and improving, and the way students learn today reflects those changes. The integration of technology into students' daily lives has resulted in a type of student who is accustomed to interacting with friends and family using online tools and applications (Wall, 2013); however, teachers are often unprepared to integrate technology resources into their classrooms (Hicks, 2011). Currently, there is a discrepancy between the technologies available and the utilization of these technologies for classroom management purposes. For example, according to the Pew Research Center, 58% of teachers own a smartphone (Purcell, Heaps, Buchanan, & Friedrich, 2013). This type of technology could easily be used to

track student behavior without the teacher stopping to handwrite a note, thereby reducing the physical demand of documenting student behavior. Integrating new technology into existing classwide intervention strategies may make interventions more feasible for teachers by automating data collection and make them more exciting for students who are accustomed to online, interactive tools.

One such intervention that may benefit from technology to track student behaviors is called tootling. Tootling is the opposite of “tattling” whereby children report their peers’ inappropriate behavior to adults (Skinner, Cashwell, & Skinner, 2000). Instead, with tootling, students reinforce each other’s appropriate and prosocial behavior by engaging in positive peer-monitoring. This type of peer-monitoring intervention may reduce the demand on the teacher by not solely relying on the teacher’s perception of student behavior. Teachers may not be in a position to monitor all student behaviors simultaneously (Skinner, Neddenriep, Robinson, Ervin, & Jones, 2002) due to many competing stimuli (e.g., focusing on instruction or monitoring a large group). The following discussion reviews the empirical literature on tootling.

### Tootling

Tootling, first proposed by Skinner, Skinner, and Cashwell (1998), encourages students to monitor and privately record their peers’ prosocial behavior (i.e., tootles) on note cards, which are then collected, read aloud, and counted by the teacher. This closely resembles one of the ways in which PBIS encourages the display of appropriate behavior by praising and publically acknowledging the students (Sugai & Horner, 2002). Initially, tootling studies focused on increasing the number of tootles produced by students. Recently, there has been a shift in focus, and researchers are assessing positive changes in

behavior due to the implementation of tootling, not just increasing the number of tootles produced (Cihak et al., 2009; Lambert, 2014; Lambert et al., 2015; McHugh et al., 2014).

Historically, the way in which the criteria for reinforcement have been determined for tootling classes hinges on an interdependent group contingency with a public posting component. When an interdependent group contingency is employed, access to a reward or reinforcement is based on the performance of the group as a whole (Litlow & Pumroy, 1975). Students may encourage their peers' use of appropriate behavior in order to receive the reward because access to the reward depends on the behavior of everyone in the group (Skinner, Skinner, & Sterling-Turner, 2002), taking advantage of peers' social influence. This type of group contingency may be more feasible for teachers because the time it takes to track the group's behavior (i.e., the class) and administer one reinforcer is considerably less than monitoring individual student interventions and administering multiple reinforcers. In the tootling intervention, student reinforcement of prosocial behaviors is indirect; they need to exhibit good behavior to be "tootled" on, and reaching a certain amount of tootles leads to group (i.e., entire class) reinforcement (McHugh et al., 2014).

In the first published study of tootling, Skinner et al. (2000) used an ABAB withdrawal design in a general education fourth-grade class to determine the effectiveness of implementing an interdependent group contingency to increase the number of tootles produced. Prior to intervention, the students were taught how to record their tootles and were given examples of valid versus invalid tootles. During baseline sessions, students were given access to note cards and told to tootle throughout the day but were given no reinforcement for doing so. During the experimental phase, the group

contingency was put in place, and the teacher publically posted progress toward the goal (i.e., 100 tootles). The intervention was then withdrawn, and students were not reinforced for tootling. When the treatment phase was reinstated, the students' goal was increased to 150 tootles, and they were given praise for tootles and a class reward (i.e., extra recess). Results from Skinner et al. (2000) were variable. Overall, tootling increased during intervention phases but not consistently. This may be due, in part to the possible confound of the principal denying children access to recess for misbehavior unrelated to the intervention. Still, when the children were reassured that they could still earn the reward, tootling increased. Despite the limitations, this demonstrated that using an interdependent group contingency and publically-posted feedback could increase the number of tootles students produced.

Cashwell, Skinner, and Smith, (2001) replicated the Skinner et al. (2000) study with a second-grade classroom. As with the Skinner et al. (2000) study, students were instructed on how to tootle prior to baseline. During baseline and withdrawal phases, cards were available for the students to tootle, but no feedback was posted and no reward was given. During intervention phases, the group criterion was set at 100 tootles initially and later raised to 200 tootles, for the students to earn the opportunity to have extra recess time and watch a movie. Overall, results indicated that when the intervention was in place, student tootling was more frequent, despite some variability in the data. However, in both Cashwell et al. (2001) and Skinner et al. (2000), there was no indication that tootling increased academically engaged or prosocial behavior or decreased disruptive and undesirable behavior as these were not monitored or measured.

To assess behavioral change in students as a result of tootling, Cihak et al. (2009) implemented a tootling intervention using an ABAB withdrawal design and an interdependent group contingency to reduce disruptive behavior among to reduce disruptive behavior among third-grade students with and without disabilities. During baseline the teacher marked a paper bracelet when students exhibited disruptive behavior. Students were then taught how to tootle, and the intervention was implemented in the same manner as Cashwell et al. (2001) and Skinner et al. (2000). At the end of the day, the teacher totaled and read the tootles aloud to the class. Class progress toward the criterion of 75 tootles was also displayed. The withdrawal of tootling and subsequent reimplementation were dependent upon reductions and increases, respectively, in class disruptive behavior. Thus, unlike previous studies (e.g., Cashwell et al., 2001; Skinner et al., 2000), the dependent variable was the number of disruptive behaviors the students displayed throughout the day rather than the number of tootles. Results from this study clearly demonstrated that tootling was effective at reducing disruptive behaviors. Disruptive behaviors decreased from a mean frequency of 23.3 instances of disruptive behavior during a six-hour day in baseline, to 8.4 during the initial tootling phase, then increased to a mean of 16 during withdrawal, and decreased to a mean of 3.4 during reimplementation (Cihak et al., 2009).

Lambert et al. (2015) further extended the research on tootling by examining its effects on classwide appropriate as well as inappropriate behavior using direct observations of student behavior collected by an independent observer. An ABAB withdrawal design was used with a multiple baseline element across two classrooms (i.e., one fourth-grade and one fifth-grade classroom) to assess the effectiveness of tootling

within different classrooms. As in previous studies, the students were taught how to appropriately tootle before intervention began. During intervention, students were given note cards and told to place their tootles in a plastic container, and the total number of tootles was written on a dry erase board to represent their progress toward the goal. Once the goals were reached, the students were provided with reinforcement. During the withdrawal phase, all tootling materials and procedures were removed. After the final re-implementation experimental phase, the teachers were told that they could continue the intervention if they desired. Follow-up observations were conducted after two weeks. During the duration of the study, classwide occurrences of disruptive and appropriate behavior were recorded for 20 minutes, at least three times per week using a 10-second momentary time sampling procedure. Results from Lambert et al. (2015) indicated that classwide disruptive behavior decreased in both classrooms when the intervention was in place and increased when it was withdrawn. Additionally, classwide appropriate behaviors increased when tootling was in place and decreased when it was withdrawn. In both classrooms, there was an immediate change in the level of classwide disruptive and appropriate behavior when tootling was implemented and subsequently withdrawn, and these results were maintained during follow up.

As a follow up to Lambert et al. (2015), Lambert (2014) included older students (i.e., sixth and seventh grades) using an ABAB withdrawal design to determine the effect of tootling on individual student behavior (as well as collective classroom behavior) by monitoring a target student in each classroom with higher levels of disruptive behavior than his or her peers. The entire classroom received the same tootling intervention as described in Lambert et al. (2015). However, in Lambert (2014), target student data were



collected separately from classroom data, which were collapsed across students. Results demonstrated that tootling successfully decreased classwide disruptive behaviors in all three classrooms and for two of the three target students. Additionally, tootling produced increases in classwide appropriate behavior in all three classrooms as well as for all three target students when tootling phases were compared to baseline and withdrawal phases. These results demonstrated that tootling has utility as a classroom intervention for older middle school students as well as younger students. The slightly mixed results across the target students indicated that more demonstrations are needed to determine the effectiveness of tootling for specific students.

McHugh et al. (2014) replicated and extended Lambert (2014) to also examine the effectiveness of the tootling intervention on both target student behavior and classwide behavior using a daily attainable goal instead of a goal that would take the students longer to reach. In other investigations, some of the criteria for student reinforcement took over a week to reach, as in Skinner et al. (2000), possibly limiting the intervention's effectiveness. McHugh et al. (2014) implemented tootling using an ABAB withdrawal design in three lower-elementary classrooms, with a multiple baseline element across two of the classrooms. Similar to previous studies, an interdependent group contingency with publically-posted feedback was used to encourage the production of tootles. However, a smaller goal that could reasonably be attained daily was used (i.e., 25-30 tootles per day). The primary and secondary dependent variables were disruptive and academically engaged student behaviors, respectively. Similar to the methods in Lambert (2014), a target student with higher levels of disruptive behavior than their peers was nominated by

the teacher and monitored independently, although the student was included in the same classwide tootling intervention as the class.

Results demonstrated that for two of the classrooms, implementation of tootling led to less variability in classwide disruptive behavior, as well as a lower level and decreasing trend during the initial tootling and reimplementation phases and had a moderate effect size. For one classroom, during tootling phases, there were dramatic reductions in level of disruptive behavior, as well decreased variability during the initial tootling phase, with a large effect size. Furthermore, tootling promoted classwide academically engaged behavior as indicated by increases in levels and trend of appropriate behavior during all of the tootling phases across all three classrooms, except during the initial tootling phase in one classroom, which had a slight decreasing trend. Effect sizes for academically engaged class behavior ranged from moderate to large. Overall, for target students, implementation of the intervention decreased disruptive behavior in level and trend and stabilized disruptive behavior, as indicated by visual analysis and moderate to large effect sizes. Additionally, target student appropriate behavior was at much higher levels during tootling phases than during baseline and withdrawal phases. Although using a daily goal in McHugh et al. (2014) did not appear to be substantially superior to goals taking longer to reach (e.g., Cihak et al., 2009; Lambert et al. 2015; Lambert, 2014), students were able to access reinforcement more frequently and more immediately.

Lum et al., (2015) further extended the tootling literature to examine the intervention's effects on classwide disruptive and academically engaged behavior in three general-education high school classrooms. Similar to previous studies, an ABAB

withdrawal design was used, and students were taught how to tootle using examples given by the teacher and feedback after the students produced practice tootles. To make the intervention more applicable to older students, each class voted to call tootling by a new name (i.e., To Be Honests, Shout Outs, To Be Realz). The intervention employed the same fundamental principles as in previous tootling studies, such as an interdependent group contingency, producing a specific number of acknowledgements, public posting of a number of tootles and public praise for earning them. Additionally, a follow-up phase was conducted 1-2 weeks after the final intervention session in each classroom.

Results demonstrated clinically meaningful decreases in classwide disruptive behavior and increases in academically engaged behavior in all three classrooms. Additionally, NAP and Tau-U effect sizes ranged from moderate to strong for classwide disruptive behavior and weak to moderate for academically engaged behavior. All three teachers rated the intervention as socially valid on the *Behavior Intervention Rating Scale (BIRS)*, Elliott, & Treuting, 1991); however, none of the teachers continued to use the intervention during the follow up. Nonetheless, this study demonstrates the utility of tootling with high school students and feasible adaptations of positive peer monitoring interventions in a population with a substantially smaller research base.

Although traditional tootling resulted in reductions in classroom disruptive behavior (Cihak et al., 2009; Lambert, 2014; Lambert et al., 2015; Lum et al., 2015; McHugh et al., 2014) and increases in appropriate or academically engaged behavior (Lambert et al., 2015; Lambert, 2014; Lum et al., 2015; McHugh et al., 2014), there are drawbacks. On each day the intervention is in place, the teacher has to distribute note cards to students and prompt them to tootle and return the completed cards to a central

location. Once the students follow those directives, the teacher then has to total the number of tootles the students have written and chart the class' progress toward their classroom goal. Such tasks may take several minutes, yet only provide a classroom total of tootles and no other meaningful data such as the number of tootles each student has received or the specific positive behaviors they were exhibiting to earn the tootle.

Additionally, the teacher may read only a select number of tootles, providing inconsistent feedback to students; some of the students may not even be aware that they received a tootle from a classmate. Parent communication is also a limitation. During traditional tootling, parents receive little, if any feedback about their child's behavior throughout the course of the intervention. Employing an easy to use technological component such as ClassDojo (<http://classdojo.com>) may address these issues. The following section describes ClassDojo and its relatively new literature base.

### ClassDojo

Officially launched in 2011, ClassDojo (<http://classdojo.com/>) is a free, online behavior management tool that allows teachers to continually track and manage student behaviors in class, and provide them with real-time feedback. Each student is represented in ClassDojo with an avatar that is projected in the classroom. The teacher can customize the classroom by specifying appropriate behaviors to reinforce by giving points, or punish inappropriate behaviors by deducting points. ClassDojo is currently available through the website, and can run on a computer connected to a projector, an interactive white board, or a smartphone or tablet by downloading a free application; this makes intervention easy from any physical location. Recording student behavior takes a simple click of an icon. The student data are automatically recorded, graphed and

presented in a pie chart. Teachers can share the data this instrument generates with parents, as well as school administrators. Additionally, the automatic public visibility of ClassDojo may provide even greater incentive for students to behave appropriately (Walberg & Twyman, 2013).

Currently, there are only three known studies examining the effects of using ClassDojo as a behavior management tool. In the first study, an unpublished master's thesis, Johnson (2012) used remote devices called "clickers" with ClassDojo to determine if the use of clickers decreased off-task behavior in language and math classes with five special education students in a self-contained classroom. An ABAB design was used in each separate class (language and math). The clickers enabled the students to provide immediate, anonymous responses to teacher-posed questions, which were then displayed on an interactive white board and summarized in real-time to the class. During all these phases, the teacher recorded on-task and off-task behavior using the ClassDojo program in math and language classes. Off task behavior was defined as, "any behavior that disrupts the student's academic performance such as constant talking at inappropriate times, making noises, and tapping, singing during instruction, fidgeting with objects, and daydreaming" (Johnson, 2012, p. 9). On task behavior was defined as, "desired or expected behavior in academic setting such as raising hands to answer questions, helping peers, being respectful to peers and teacher, cooperating with others, and completing all assignments" (Johnson, 2012, p. 9). The students did not have access to the clickers during the baseline phase, which lasted for three days.

During the first intervention phase, the teacher gave the class clickers and recorded student on task and off task behavior for five days. After five days of intervention, the clickers were removed for five days during the withdrawal phase and subsequently returned to the students for five days during the reimplementation phase.

Mean scores and effect sizes were not reported in Johnson (2012), thus the analyses are based solely on visual analysis of the figures provided. Results indicated that during language class, students' on task behavior increased during intervention phases and decreased during withdrawal phases. Conversely, the opposite was true for off task behavior; level of off task behavior was higher during baseline and withdrawal phases, but lower during intervention phases. During math class, student on task behavior increased during the initial intervention but decreased during the withdrawal phase, and did not improve again during reimplementation; levels of on task behavior during reimplementation were even lower than during the initial baseline. Generally, off task behavior in math class was more frequent during baseline and withdrawal phases, although during the initial intervention phase, off task behavior had an increasing trend. To assess social validity, the students were given an open-ended survey about using the clickers in the classroom. They reported that they believed that it enhanced their learning experience.

Although Johnson (2012) had some positive reported outcomes, there are notable limitations in the study. First, it is unclear whether the students were ever told that the teacher was monitoring their behavior or if the teacher gave them any feedback about their behavior at all. Additionally, there was no measure of procedural integrity for the teacher or observer agreement between the teacher and an observer, to ensure that the

instructor was accurately recording and interpreting every instance of off task and on task behavior. Although the ABAB design is strong, with the above elements missing, conclusions are limited. Lastly, failure to report mean scores and effect sizes for intervention data hinders interpretation of the results.

In the second study, Maclean-Blevins and Muilenburg (2013) examined the effects of teacher praise of student behavior with ClassDojo, on student self-monitoring behaviors in a single, third-grade class. Target behaviors rewarded with points on ClassDojo included working quietly, focusing on work, using classroom resources, double-checking work, asking questions, and carefully reading directions. Students were not reprimanded with ClassDojo. Points were never deducted.

To measure student response, outside observers kept a frequency count of student behaviors prior to and during ClassDojo implementation. These behaviors were divided into two categories: self-monitoring behaviors and negative learning behaviors. Behaviors considered positive, self-monitoring behaviors, were “working quietly, focusing on work, using classroom resources, double-checking work, asking questions, and carefully reading directions” (Maclean-Blevins & Muilenburg, 2013, p. 6). The negative learning behaviors included, “talking to another student, disruptive behavior, not focusing on work, and standing up and approaching the teacher with a question” (Maclean-Blevins & Muilenburg, 2013, p. 9). The intervention was used only during independent work time, and student behaviors rewarded on ClassDojo were discussed with the students on a weekly basis. Results indicated that over the three weeks of ClassDojo implementation, positive, self-regulatory behaviors increased and negative, disruptive behaviors decreased even though only the frequency of positive behaviors was

tracked using ClassDojo. Additionally, students' enjoyment of using the program was assessed using an open-ended survey and the majority responded that they enjoyed the online system.

This study may have positive implications, but several limitations should be noted. The AB design implemented in only one classroom, limits the experimental control and, thus, any conclusions. There were no operational definitions for specific behaviors being observed or rewarded with ClassDojo. Additionally, observers were expected to take a frequency count of 10 different behaviors for four students simultaneously in one-minute intervals and then rotate to another group of four students, a difficult, cumbersome procedure at best. Maclean-Blevins and Muilenburg (2013) also lacks interobserver agreement and procedural integrity data to ensure the intervention was conducted with fidelity. It is also noted that ClassDojo was only implemented two days in the first week and three days a week during the second and third weeks of intervention.

In the third study, an unpublished doctoral dissertation, Lynne, (2016) examined the influence of delivering a positive variation of the Good Behavior Game (GBG) in one first-grade and two fourth-grade classrooms via ClassDojo on student behavior (i.e., disruptive and academically engaged behavior) and teacher praise. An ABAB withdrawal design was used in each class, to determine intervention effects. Prior to the intervention phase, teachers divided students into teams, showed them the ClassDojo program, and explained that the class had the opportunity to earn rewards for good behavior. The teachers explained the rules for the game, which were publically posted and modeled examples with the class. After this student training session, teachers began



implementation by assigning points to teams on ClassDojo, in which all members were demonstrating on-task behavior. All minor rule violations were ignored during these 20-minute intervention sessions, and at the conclusion of this period, the teacher would announce the winning team(s) and allow a student to draw a slip of paper from a container, in order to determine the reward for the day. The point criterion for each class to access the reward was determined by, “taking the average of the total number of reprimands and praise statements made by the teacher in all baseline observations and dividing that number by the amount of teams present in the classroom” (Lynne et al., 2016, p. 37).

Dependent variables measured during each phase included disruptive and academically engaged behavior and teacher praise. Disruptive behavior included students putting their heads down on the desk, playing with objects not related to the task, being out of seat, and making inappropriate vocalizations. Academically engaged behavior was defined as, “the student’s eyes oriented toward the teacher or relevant task or activity” (Lynne, 2016, p.34). General teacher praise (e.g., “Nice job!”) and behavior specific praise (e.g., “Good job ignoring distractions!”) were also coded during observations. Interobserver agreement, treatment integrity, and procedural integrity data were also collected.

Results from Lynne, (2016), indicate that implementation of the GBG with ClassDojo decreased disruptive behavior and increased academically engaged behavior in all three classrooms when intervention phases were compared to baseline and withdrawal phases. This was evident by changes in mean scores, visual analysis and moderate to strong effect sizes. Teacher praise was more variable, with Teacher A providing students

with praise only after performance feedback from the researcher, Teacher B providing substantially more behavior specific praise during intervention phases, and Teacher C providing students with slightly more behavior specific praise during intervention sessions. All teachers rated the intervention with moderate to high levels of social validity. These results demonstrate that the GBG, a well-supported intervention, could be modernized by incorporating technology in order to make it more accessible.

Initial studies employing the ClassDojo system to track class behavior by Johnson (2012), Maclean-Blevins and Muilenburg (2013), and Lynne, (2016) may suggest that this online system has the potential to simplify classroom behavior management. However, with only these studies and their limitations, the potential of ClassDojo is untested. In Johnson (2012) and Maclean-Blevins and Muilenburg (2013), methodologies were unclear or unspecified and the designs were insufficient to demonstrate experimental control and rule out threats to internal validity. Using this system to enhance existing classroom interventions may increase the utility of interventions for teachers and enhance student excitement. However, additional well-controlled studies with strong experimental designs are needed.

#### Present Study

Thus far in the tootling literature, Cihak et al. (2009), Lambert et al. (2015), and Lum et al. (2015) demonstrated that this intervention produced positive changes in classwide behavior. Lambert (2014) and McHugh et al. (2014) extended those findings by seeking to measure student behavior classwide as well as target student behavior as dependent variables. These studies support the assertion that tootling can positively affect classwide behavior and target student behavior. However, due to the relatively

novel nature of utilizing ClassDojo as a behavior management tool, the current study simply sought to determine the general effectiveness of this interactive technology on the entire class. The current study examined the effectiveness of the tootling intervention using ClassDojo on classwide student behavior.

In tootling studies thus far, there has not been a technological component. Historically, teachers have to distribute many note cards, prompt students to write tootles, count the number of tootles produced and read some aloud. Additionally, the teachers have been required to update a visual representation of the total number of tootles daily or more frequently (e.g., McHugh et al., 2014). This can be cumbersome for teachers as it requires many materials (i.e., note cards, pencils, a container for tootles, a progress thermometer and a dry erase marker) as well as time. Although tootling has demonstrated effectiveness, it may be even easier to implement for teachers with a technological component. Using ClassDojo for student tootles could possibly make the use of many materials obsolete. Additionally, it may heighten student interest and response to intervention. Studies of ClassDojo thus far are inconclusive. Additional studies incorporating ClassDojo are needed.

The following research questions were evaluated in this study:

1. Is there a functional relationship between implementation of a tootling intervention with ClassDojo and a decrease in classwide disruptive behavior of upper elementary school students with PBIS in place, in a classroom setting?
2. Is there a functional relationship between implementation of a tootling intervention with ClassDojo and an increase in classwide academically engaged behavior of upper elementary school students with PBIS in place, in a

classroom setting?

3. Will teachers find this intervention socially valid?

## CHAPTER II

### METHOD

#### Participants and Setting

Participants included three fifth-grade classrooms in a Southeastern State. Fifth-grade was chosen because younger elementary-aged students might not be as fluent with computer usage as older students. Also, middle and high school students may have found the characters in the ClassDojo program to be juvenile as they are “silly” cartoon characters.

Classroom A was a general education classroom consisting of 35 students (15 males and 20 females). This classroom was initially two separate fifth-grade classes, but was combined into one class containing two primary, co-teachers. Of the 35 student participants, 24 were African-American, 10 were Caucasian, and one was Bi-Racial. Three students received Special Education services under Other Health Impaired-Attention Deficit Hyperactivity Disorder. One student received Special Education services under the Autism Spectrum Disorder category. One of the co-teachers was a Caucasian female with a bachelor’s degree in her first year of teaching. The other co-teacher was an African-American female with a specialist’s degree in her tenth year of teaching. During the time this study was conducted, the school was implementing PBIS and had a System-wide Evaluation Tool (SET) rating of 96.8%. The SET assesses the features of PBIS implementation on a yearly basis; higher percentages suggest a more effective program (Sugai, Lewis- Palmer, Todd, & Horner et al., 2001). A score of 80% or higher on the SET is considered to be an acceptable level of implementation (Horner et al., 2009).

Classroom B was a general education classroom consisting of 20 students (11 females, 9 males). Participants included 18 Caucasian students, and two African American students. None of the students in Classroom B received special education services. The teacher in Classroom B was a Caucasian female with a bachelor's degree in her fifth year of teaching.

Classroom C was a general education classroom consisting of 19 students (11 males, 8 females). All participants were Caucasian. Five of the students received special education services and were identified under the categories of Specific Learning Disability and Other Health Impaired-Attention Deficit Hyperactivity Disorder. The teacher in Classroom C was a Caucasian female with a master's degree in her twentieth year of teaching. Both Classroom B and C were located in the same school. At the time this study was conducted, the school's SET rating was 98%, indicating that they had a cohesive PBIS program already in place, determined by staff and student interviews, a review of permanent products, and observations (Horner et al., 2004; Sugai, Lewis-Palmer, Todd, & Horner, 2001).

Participation was based on administrator referral due to disruptive behavior within each classroom. The primary researcher contacted the referred teachers for their permission to participate and to explain the study, develop operational definitions of specific target behaviors, and determine when the disruptive behaviors were most likely to occur. Each classroom participating in the study was screened in, during which disruptive behaviors were present during at least 30% of the intervals (Lambert et al., 2015; Lambert, 2014; McHugh et al., 2014).

Appropriate school district board members and administrators gave permission to perform the study prior to principal and teacher consultations. Teachers were asked to report demographic information about themselves as well as general information about the class (see Appendix A) and give informed consent (See Appendix B). A university institutional review board (IRB; see Appendix C) approved all materials and procedures.

### Materials

Each classroom was equipped with Internet access and interactive white boards prior to implementation and was assigned a ClassDojo user name and password, used throughout the intervention phases of the study. Each classroom also had tootling stations, which were desktop computers logged into the class's ClassDojo account. In Classrooms A and C, there were two tootling stations; Classroom B, had four of these stations. Throughout the intervention phases, each student had an opportunity to input tootles into ClassDojo, using a desktop computer, logged into the classroom account. At the end of the allotted tootling time, the teacher would display the ClassDojo account on an interactive white board at the front of the room with data containing the total number of tootles produced and the student's names corresponding to the tootle they received. Classroom goals for reinforcement varied widely and were between 35-150 tootles, depending initially on the size of the class and teacher estimates of how many tootles each student would input, and later on the amount of time it was taking students to tootle. For example, the goal in Classroom A was increased to 150 tootles once it was determined that they were doubling or tripling the tootling goal of 50. When the students met their goal, they were rewarded. Rewards were determined based on student and teacher preference, and feasibility, and mostly consisted of extra free time or small

edible items. The primary investigator provided all edible items. Additionally, before the intervention was explained to the students, the classroom teachers were given a script for the initial tootling training session (see Appendix D) and script to remind students of daily tootling procedures (see Appendix E).

#### Behavior Intervention Rating Scale (BIRS)

At the study's conclusion, teachers' perceptions of acceptability and treatment effectiveness of the tootling procedure were assessed. The teachers completed a modified version of the *Behavior Intervention Rating Scale (BIRS)*; Elliott & Treuting, 1991; see Appendix F). The BIRS was chosen due to the inclusion of items that reflect rate of behavior change, and level and maintenance of that change. The BIRS consists of a 24-item questionnaire, rated on a 6-point Likert scale, with rankings from strongly disagree (1), to strongly agree (6). Higher scores on the BIRS indicate high levels of teacher satisfaction with the intervention. Technical evaluations of the BIRS have found a high alpha coefficient ( $\alpha = .97$ ) for completed BIRS (Elliott & Treuting, 1991).

#### Dependent Variables

Classwide disruptive and academically engaged behaviors were dependent variables assessed in this study. Disruptive behaviors were coded when a student exhibited at least one of the following: inappropriate vocalizations, being out of seat/area, or playing with objects. Inappropriate vocalizations were defined as students making audible noises, which were irrelevant to the task at hand. Examples included talking to a peer, or talking about an unrelated topic. Out of seat behavior was defined as a student leaving his or her seat or his or her designated area without permission; this included sitting inappropriately such as on top of the desk. Playing with objects was



defined as touching or manipulating items not necessary to the task at hand, including throwing objects, playing with clothing, or touching a peer. These behaviors encompassed an array of activities which all of the teachers indicated were problematic in their classrooms. Phase change decisions were based upon the occurrence of classwide disruptive behavior. Once classwide disruptive data demonstrated stability or there was an increasing trend, a phase change would occur.

The secondary dependent variable was classwide academically engaged behavior. This was defined as the student attending to teacher instruction or participating in independent seatwork and group activities. Thus, a student could interact with the teacher or peers if it was relevant to the academic task. The occurrence of academically engaged behavior did not affect phase change decisions.

#### Data Collection

The primary researcher and trained graduate student observers collected data at least three times per week during the time period specified by the teacher as being most behaviorally problematic. Collection and measurement procedures were consistent throughout all phases of the study. The dependent variables were measured using a 10-second momentary time sampling procedure using an audio recording, which cued observers to record any instances of the dependent variables at the beginning of each 10-second interval. If a student was both academically engaged and disruptive simultaneously, such as working on a task while talking to a peer, that interval was coded as both disruptive and academically engaged. If a student was neither engaged in a disruptive behavior nor an academically engaged behavior (e.g., sleeping or staring off), that interval was not coded as academically engaged or disruptive. All observations were

20 minutes in length. Data for all students were collapsed to represent the percentage of intervals of classroom disruptive and academically engaged behaviors. The percentage of intervals of occurrence of each dependent variable was determined by dividing the total number of intervals of occurrence by the total number of intervals and multiplying this number by 100.

Similar to Lambert et al. (2015), each student in the classroom was grouped into rows or clusters and was momentarily observed at the beginning of each interval. The order in which students in groups was observed varied so that each day, the researcher randomly selected which student in each group (e.g., Student 1, Student 2) was observed first. For example, an observation that began with Student 2 in Group 1 was followed by Student 2 in Group 2, then Student 2 in Group 3, and so on. Once every student in the classroom had been observed, the cycle repeated until the end of the observation (see Appendix G). Data were collected in each classroom during the same academic subject throughout all phases. In Classroom A, data were collected during Reading. In Classroom B the class engaged in Science instruction and in Classroom C, Mathematics.

#### Experimental Design and Data Analysis

An ABAB withdrawal design in three classrooms, with a multiple baseline element across Classrooms B and C, was used to determine the effectiveness of the tootling intervention using ClassDojo for decreasing classwide student disruptive behaviors as well as increasing academically engaged behaviors. The initial phase change from baseline to intervention occurred for each classroom when the baseline data were stable or there was an increasing trend in disruptive behavior. Additionally, a minimum of five data points per phase were collected to adhere to the What Works Clearinghouse

criteria for Meeting Standards in Single Case Design research (Kratochwill et al., 2010). Because Classroom B and C were located in the same school, a multiple baseline element was used to strengthen internal validity. Classroom C remained in baseline phase while Classroom B moved onto the treatment phase until a treatment effect was noted in Classroom B, at which time Classroom C moved into the treatment phase. During the withdrawal phase, data were collected until disruptive behavior was stable or there was an increasing trend. After the withdrawal phase, another identical intervention phase began. Effects of the tootling intervention were analyzed for level, trend, variability, and effect size and these data were used to inform when phase changes occurred. Tau-U (Parker, Vannest, Davis, & Sauber, 2011) was calculated as a measure of effect size. Tau-U is a nonparametric technique for measuring non-overlapping data between two phases. In this study, non-overlapping data were measured between the baseline and first intervention phase, then the withdrawal and re-implementation phase. Tau-U has several benefits over other measures of effect size, specifically it allows control of data trend observed during baseline phases. When interpreting Tau-U scores, 0.00 to .65 may be considered weak effects, scores from 0.66 to 0.92 may be considered moderate effects and scores from 0.93 to 1.00 may be considered strong effects (Parker & Vannest, 2009).

## Procedures

### *Screening*

Screening observations were conducted after administrator referral for the study and teacher consultation with the primary researcher. Teachers were asked to conduct their classroom in their typical style. This included handling instances of disruptive and appropriate behavior in accordance with their typical classroom management techniques.

Data used to screen-in participants were obtained using the same methods described earlier for collecting baseline and intervention data. In order to screen in, at least 30% of the intervals observed included disruptive behavior by the class (Lambert, 2014; Lambert et al., 2015; McHugh et al., 2014).

### *Baseline*

Teachers were given instructions to continue with their typical classroom management procedures and routines during this phase. The primary researcher and trained observers collected data on the occurrence of disruptive and academically engaged behavior without the implementation of tootling. Because the screening observation and baseline were methodologically identical, the screening observation was retained as the first baseline datum point.

### *Training and Preference Assessment*

The primary researcher trained the teachers by explaining the components of tootling and giving them a script, which outlined exactly how to train the students on the tootling procedures (see Appendix D). The teachers were given the opportunity to rehearse the script with the researcher, ask questions and receive feedback before the beginning of the intervention, as well during the intervention in order to maintain a high degree of treatment integrity (McHugh et al., 2014). The student trainings occurred after the baseline phase and prior to the implementation of the intervention. During the trainings, the students were shown how to observe and record their peers' appropriate behaviors on the computers, logged into the ClassDojo program. The script included examples and non-examples of appropriate tootles. Students were given the opportunity to practice saying a tootle aloud while completing a tootle on the device, and then the

teacher then provided praise or corrective feedback. Student training continued until each student provided a correct “Dojo” tootle.

During the initial tootling training session, students were asked to identify things they would enjoy earning for reaching their goal of producing a certain number of tootles. The teacher then decided which items were feasible and provided the primary researcher with a list of potential rewards. All rewards were of little, if any, monetary value and the primary researcher was responsible for obtaining these items. Edible items identified by the students included popcorn and Skittles. The students also identified extra free time in class and extra recess time as desirable rewards.

### *Tootling*

After an increasing trend or stability in classwide disruptive behavior had been observed in each baseline, implementation of training and tootling procedures in each classroom began. Each day tootling was in place, teachers instructed and encouraged students to take mental note of appropriate peer behavior observed throughout the time period identified as having the most disruptive behavior (approximately 20 minutes). Students were also reminded that they would have the opportunity to tootle on ClassDojo using the computers at the end of that time period. Multiple students were able to tootle simultaneously and anonymously. The exact number of students that were able to tootle at once depended upon the number of devices available in each classroom. In Classrooms A and C, two computers were available; in Classroom B, four computers were available for student use. Each student had approximately five seconds to tootle at each tootle booth. Students simply needed to select the name of the person they wished to tootle on and select the type of behavior they witnessed from among available choices.

Based upon the majority of tootles received in McHugh et al. (2014), it was possible to classify specific behaviors into broad classifications of tootle worthy behavior. These classifications were provided for the students to select from and included the following: Being respectful toward a teacher, being respectful toward a peer, following classroom rules/ expectations, helping others, and following directions. These categories were consistent across classrooms and intervention phases of the study. The specified categories and time limit on tootling significantly shortened the amount of time teachers needed to allocate to this intervention. Even in the largest classroom with the fewest devices, the amount of time devoted to tootling was negligible. Classroom A had 35 students, only 2 available computers and each student received 5 seconds to tootle. Students were allowed to approach the computers by row and walk back to their assigned seat when they were finished tootling. Even when adding in the time it took to walk to the computers by row and rotate so that every student had a turn, the approximate time it took the class to complete this portion of the intervention was 3 minutes.

As in previous studies, Tootling with ClassDojo contained a public posting and an interdependent group contingency component (Cashwell et al., 2001; Cihak et al., 2009; Lambert, 2014; Lambert et al., 2015; Lum et al., 2015; McHugh et al., 2014; Skinner et al., 2000); however, contrary to these studies, the public posting component was automatically updated on the interactive white board, which was displayed by the teacher at the end of the tootling time. Additionally, the ClassDojo program offers a page detailing the reasons why points were awarded. This page was displayed, so that all students received consistent behavioral feedback and learned why they were awarded certain tootles. The total number of tootles given was displayed and the teacher then

stated that number aloud and praised students for their progress toward the goal. Because an interdependent group contingency was employed, the classroom as a whole had to achieve the tootling goal in order to obtain a group reinforcer. The ClassDojo program kept a running total of accumulated tootles and the teacher erased the specific tootles given after each day, so that the students received behavioral feedback that was specific to each day and not feedback they have already received. Upon reaching the specified goal, the class received the agreed upon reinforcer and a new goal was set.

#### *Interobserver Agreement and Observer Training*

Interobserver agreement (IOA) was calculated between the primary researcher and a trained observer during at least 30% (range= 30%- 60%) of observations throughout all phases, in each of the three classrooms. The total number of agreements between observers was divided by the total number of agreements and disagreements and then multiplied by 100.

Observers were given behavioral definitions of the dependent variables and were trained in a classroom until they obtained at least 90% IOA with the primary researcher, at which time they were allowed to independently conduct observations. During data collection, if observers did not maintain 90% agreement while collecting data with other observers, they were retrained on the procedures and operational definitions before continuing to obtain data. This occurred three times during the course of the study.

IOA for Classroom A was collected during 43% of baseline sessions, 40% of initial intervention sessions, 40% of withdrawal sessions, and 38% of re-implementation of tootling sessions. IOA across both disruptive and academically engaged behaviors was 98% (range 97- 99%) during baseline, 94.5% (range 92-97%) during intervention,

96.5% (range 95-98%) during withdrawal, and 96% (range 92.5%-98%) during re-implementation.

IOA was collected in Classroom B for 40% of baseline sessions, 50% of initial intervention sessions, 30% of withdrawal sessions, and 60% of tootling re-implementation sessions. IOA across both disruptive and appropriate behaviors was 89% (range 80- 98%) during baseline, 94% (range 92.5-96.6%) during intervention, 95.8% (range 94-97.5%) during withdrawal, and 95.7% (range 93-97.5%) during re-implementation.

IOA for Classroom C was collected during 30% of baseline sessions, 30% of initial intervention sessions, 40% of withdrawal sessions, and 40% of re-implementation sessions. IOA across both disruptive and appropriate behaviors was 91.7% during baseline (range 88-95.5%), 96.5% (range 95-98%) during intervention, 92.4% (range 89-95.8) during withdrawal, and 96% (range 95-98%) during re-implementation.

### *Kappa*

In addition to interrater agreement, Kappa was calculated to determine the agreement between rater observations (Sattler & Hoge, 2006). Kappa accounts for both occurrences and nonoccurrences of behaviors, providing a better estimate of actual agreement than simple interrater agreement (Sattler & Hoge, 2006). Kappa was calculated using the formula provided by Uebersax (1982) and averaged .93, .87 and .88 for classrooms A, B, and C, respectively. When interpreting Kappa, coefficient scores less than .4 are considered poor agreement. Scores ranging from .40 to .59 represent fair agreement, scores between .60 and .74 are considered good agreement, and scores of .75



or higher indicate excellent agreement (Cicchetti, 1994). Thus, Kappa scores for all three classrooms indicated “excellent” agreement between observers.

### *Procedural Integrity*

Procedural integrity was assessed during each classroom teacher’s implementation of the tootling training session with students prior to the implementation of the intervention. The primary researcher completed a training integrity checklist to determine whether the teacher implemented all steps required to train the students on the tootling procedures (see Appendix H). Teachers in all three classrooms obtained 100% procedural integrity for the training sessions.

### *Treatment Integrity*

The primary investigator and trained observers also measured integrity by completing a checklist during all intervention and re-implementation observations which assessed for the presence of necessary intervention materials in the room, such as having the interactive white board displayed in a visible area of the room, and having working devices for students to use while tootling (see Appendix I). Additionally the investigators assessed the teacher’s treatment integrity and were present throughout the intervention sessions, which usually lasted approximately 30 minutes. Thus, the total percentage of integrity was based upon the materials being present and the observed teacher’s implementation of the intervention. In Classroom A, treatment integrity averaged 96% (range= 88-100%). In Classroom B, treatment integrity averaged 99% (range = 88-100%). In Classroom C, integrity averaged 94% (range 88-100%). Teachers were given performance feedback after each session, with attention paid to the steps that were missed. IOA of the checklist was collected during 38% of the treatment sessions in

Classroom A, 54% of the sessions in Classroom B, and 45% in Classroom C. Integrity IOA was 100% for all checks. Additionally, the teachers assessed their own treatment integrity, by completing a form on their daily implementation (see Appendix J). Teacher reported procedural integrity in Classrooms A and B never fell below 100%. In Classroom C, teacher reported integrity averaged 97% (range= 85-100%).

## CHAPTER III

### RESULTS

Figure 1 shows the percentage of intervals of classwide disruptive and academically engaged behavior across all phases in Classrooms A, B, and C. Mean disruptive behavior for Classroom A was 41% (range = 34-51%) of intervals observed during baseline, 16 % (range = 14-17.5%) during the initial intervention phase, 65% (range = 58-70%) during withdrawal, and 19% (range = 15-28%) during re-implementation of tootling. Mean disruptive behavior for Classroom B was 52% (range= 40-68.7%) of intervals during baseline, 9% (range= 3.3-12%) during the initial intervention phase, 35% (range 28-44%) during withdrawal, and 10% (range 5.8-15.8%) during re-implementation of the intervention. For Classroom C, mean disruptive behavior was 59% (range= 53-69%) of intervals during baseline, 17% (range=15-18%) during the first intervention phase, 50% (range= 43-56.6%) during withdrawal, and 8% (range= 5-10%) during re-implementation of tootling.

Classwide academically engaged behavior for Classroom A averaged 45% (range= 21-56.25%) of intervals during baseline, 73% (range= 65-82%) during the initial Tootling phase, 24% (range= 15-34%) during withdrawal, and 64% (range- 49-75%) during re-implementation of the intervention. For Classroom B, classwide academically engaged behavior averaged 43% (range= 31-53%) of intervals in baseline, 91% (range= 82-97.5%) during the first tootling phase, 58% (range= 42-67%) during the withdrawal phase, and 82% during reimplementation (range=75-91.6). Lastly, academically engaged behavior in Classroom C averaged 39% (range= 34-47.5%) of intervals during baseline, 81% (range= 76-85.8%) during the initial intervention phase, 44% (range= 41.6-49%)

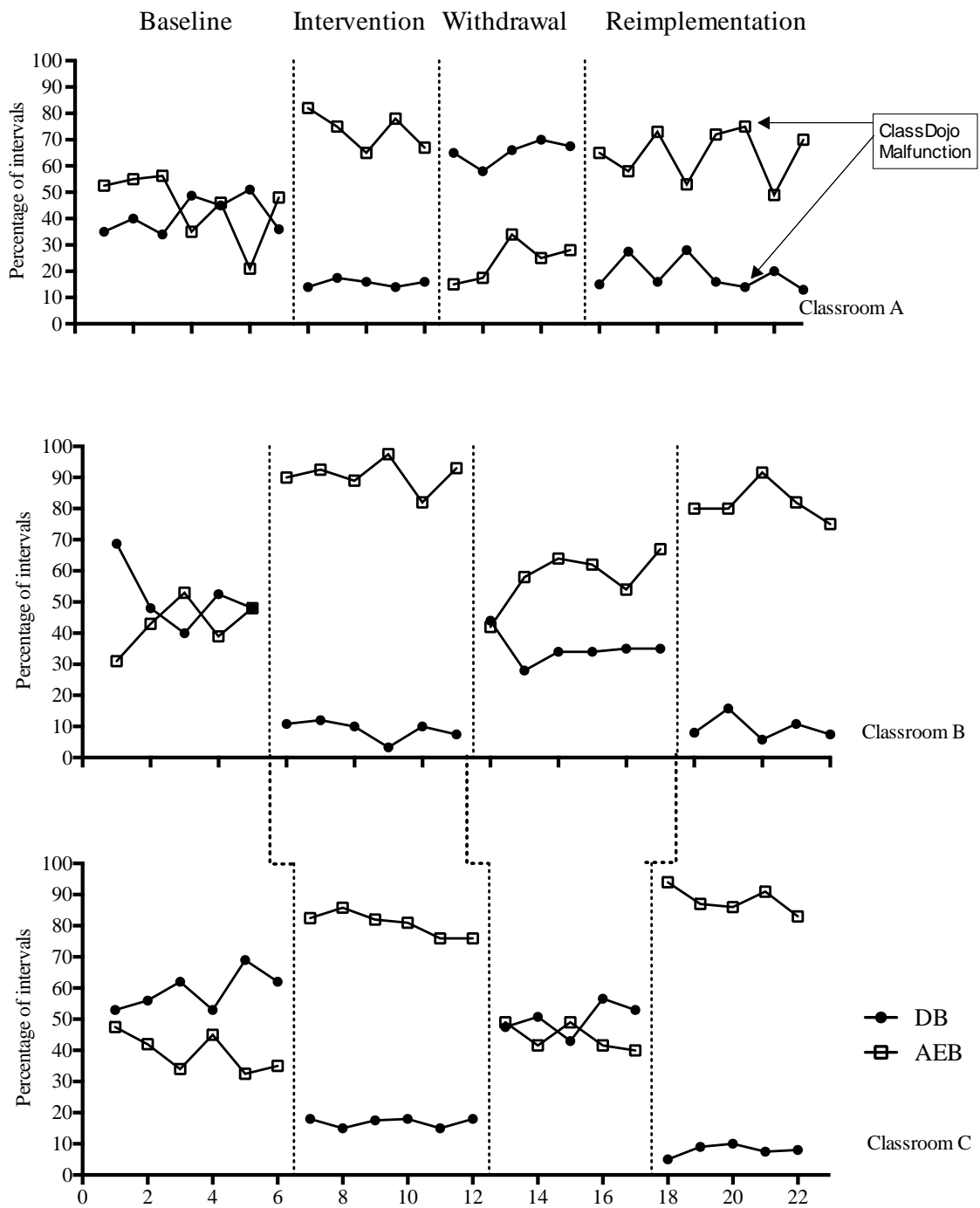


Figure 1. Percentage of intervals of classwide disruptive and academically engaged behavior (AEB) across all phases in Classrooms A, B, and C.

Visual analysis of disruptive behavior in Figure 1 reveals that there was some variability in data during baseline phases in each of the classrooms, which decreased when tootling was introduced. When tootling was implemented, classwide disruptive behavior immediately dropped in level and had less variability throughout the phase. When tootling was withdrawn, disruptive behavior immediately increased in level across all three classrooms, approaching baseline levels in Classrooms B and C, and exceeding baseline levels in Classroom A. Once tootling was re-implemented disruptive behavior sharply declined and stabilized once more, consistent with the data collected during the first intervention phase for Classrooms A and B. In Classroom C, lower levels of disruptive behavior were observed during the re-implementation phase than when tootling was initially introduced. In all classrooms, the data collected during intervention phases were consistently at a much lower level than in baseline and withdrawal and did not share overlap with non-intervention phases.

Visual analysis of academically engaged behavior in Figure 1 shows that there were consistently higher levels of academically engaged behavior with the use of tootling than during baseline and withdrawal phases. This is exemplified by the immediacy of the effect on academically engaged behavior and the lack of overlapping data between intervention and non-intervention phases. However, there were decreasing trends during the initial intervention phase for Classroom A and to a lesser extent, in Classroom C. Additionally, increasing trends of academically engaged behavior were noted during the withdrawal phase for both Classrooms A and B.

### Effect Size

Effect sizes were determined by calculating Tau-U (Parker et al., 2011) and are summarized in Table 1. Effect size comparisons for disruptive behavior reflect strong effects in all three classrooms. Baseline trend was controlled when levels of .40 or greater were observed in both baseline and baseline + intervention contrast, which resulted in the reduction of Tau points and some moderate effect sizes (Parker et al., 2011). Comparisons for academically engaged behavior reflect strong effects in Classroom C and Classroom A when baseline was compared to tootling. Moderate effects were noted for academically engaged behavior in Classroom B and in Classroom A, when the withdrawal phase was compared to the reimplementation of the intervention. Omnibus effect size for both dependent variables is presented for each of the three classrooms and indicates strong effects for comparisons of disruptive behavior for Classrooms A, B, and C. The omnibus effect size for each classroom on academically engaged behavior indicates both moderate effects for Classrooms A and B and strong effects for Classroom C. Overall omnibus effect size for disruptive behavior and academically engaged behavior, indicate that the effects of all three classrooms combined resulted in strong effects for both dependent variables.

Table 1

*Tau-U Values Across Classrooms A, B, and C.*

	Tau-U	Descriptor
Classroom A		
Disruptive Behavior		
Baseline x Tootling	1.0	Strong
Withdrawal x Reimplementation	1.0	Strong
Omnibus effect size	1.0	Strong
Academically Engaged Behavior		
Baseline x Tootling	1.0	Strong
Withdrawal x Reimplementation	.85	Moderate
Omnibus effect size	.92	Moderate
Classroom B		
Disruptive Behavior		
Baseline x Tootling	1.0	Strong
Withdrawal x Reimplementation	1.0	Strong
Omnibus effect size	1.0	Strong
Academically Engaged Behavior		
Baseline x Tootling	.87	Moderate
Withdrawal x Reimplementation	.77	Moderate
Omnibus effect size	.82	Moderate
Classroom C		
Disruptive Behavior		
Baseline x Tootling	1.0	Strong
Withdrawal x Reimplementation	1.0	Strong
Omnibus effect size	1.0	Strong
Academically Engaged Behavior		
Baseline x Tootling	1.0	Strong
Withdrawal x Reimplementation	1.0	Strong
Omnibus effect size	1.0	Strong
Classrooms A, B, & C		
Disruptive Behavior		
Omnibus effect size	1.0	Strong

Table 1 (continued).

	Tau-U	Descriptor
Classrooms A, B, & C Academically Engaged Behavior		
Omnibus effect size	.98	Strong

#### Teacher's Perception of Acceptability and Intervention Effectiveness

All four teachers were asked to complete the *Behavior Intervention Rating Scale* (BIRS; Elliott & Treuting, 1991; see Appendix F) after data collection concluded to assess social validity (i.e., acceptability and effectiveness) of the intervention. Scores on the BIRS range from 1-6 and are summarized in Table 2; higher scores reflect higher acceptability. Overall item means for the two teachers in Classroom A were 5.25 and 5.125. Means for the teachers in Classrooms B and C were 5.37 and 4.33, respectively. Acceptability items such as “most teachers would find tootling appropriate,” were generally rated a 5 or 6. Effectiveness items reflected believed generalizability such as “student behavior will remain at an improved level after the intervention is discontinued.” These types of questions were rated lower than the Acceptability and Time to Effectiveness items, and generally signified that teachers believed the long-term improvements were modest. Time to Effectiveness questions, such as “this intervention quickly improved student behavior” were generally rated from 4-6. Therefore, results of the BIRS indicate moderate to high levels of social validity of the intervention.



Table 2

*BIRS Values Across Classrooms A, B, and C.*

	Acceptability	Effectiveness	Time to Effectiveness	Overall
Classroom A				
Teacher 1	6	3.6	5.5	5.25
Teacher 2	5.8	3.9	4.5	5.125
Classroom B				
Teacher	5.5	5.3	5	5.37
Classroom C				
Teacher	4.8	3.43	4	4.33

## CHAPTER IV

### DISCUSSION

The current study was intended to replicate and extend the findings of Cihak et al. (2009), Lambert (2014), Lambert et al. (2015), Lum et al. (2015), and McHugh et al. (2014), to determine if tootling would reduce classwide disruptive behavior and increase academically engaged behavior incorporating a technological component (ClassDojo). Additionally, many methods were derived from McHugh et al. (2014) and Lambert et al. (2015) to examine the effects on classwide student disruptive, as well as academically engaged behavior. This study contributes to the tootling literature by demonstrating the effectiveness of utilizing an online behavior tracking system, ClassDojo, to record and display tootles, thereby reducing the task demands of the intervention on the teacher and increasing student response.

#### Research Question 1

The first research question examined whether there was a functional relationship between the tootling intervention with ClassDojo and a decrease in classwide disruptive behavior in classrooms using PBIS. Using visual analysis in all three classrooms, implementation of tootling led to immediate stabilization of disruptive behavior and a decrease in level, although there was some variability initially in the re-implementation phases in Classrooms A and B. When tootling was withdrawn, there were immediate increases in levels of disruptive behavior across all three classrooms. Additionally, effect size comparisons reflected strong effects on disruptive behavior in all three classrooms, and the ABAB experimental design replicated across the classrooms demonstrated strong experimental control. These results are comparable to those found in previous tootling

studies (Cihak et al., 2009; Lambert, 2014; Lambert et al., 2015; Lum et al., 2015; McHugh et al., 2014) in which disruptive behavior decreased during tootling, thereby affirming research question 1. Classrooms in these other studies demonstrated moderate to strong effects in the reduction of classwide disruptive behavior, with the exception of Cihak et al. (2009), who did not measure effect sizes. However, methods used in the current study made the intervention less time and resource intensive than methods used in the previous studies.

### Research Question 2

The second research question sought to examine if there was a functional relationship between implementation of the tootling intervention with ClassDojo and increases in classwide academically engaged behavior in classrooms using PBIS. Data from the current study demonstrate that tootling promoted academically engaged class behavior as indicated by immediate increases in levels of academically engaged behavior during all of the tootling phases across all three classrooms, affirming research question 2. However, there were slight decreasing trends during the intervention phases in Classroom C and increasing trends in academically engaged behavior during withdrawal phases for Classrooms A and B. These trends were reflected in measurements of effect size, which indicated a moderate effect for Classroom A and Classroom B comparing withdrawal to reimplementation, and a strong intervention effect for Classroom C. There was also a strong effect for Classroom A when comparing baseline and the initial tootling phase. However, despite some moderate effects, omnibus effect size for academically engaged behavior across all three classrooms together indicated a strong effect. The immediacy of effect and non-overlap in the data, suggest that results from this form of

tootling were comparable with those of Lambert et al. (2015), in which tootling increased appropriate behavior with moderate to strong effect sizes. Lum et al. (2015), found weak to moderate effects on classwide academic engagement.

### Research Question 3

The final research question sought to determine if the teachers using the intervention would find tootling with the ClassDojo program acceptable and effective. Teachers' responses to the *Behavior Intervention Rating Scale (BIRS)*; Elliott & Treuting, 1991; see Appendix F) indicated moderate to high levels of acceptability with intervention, thereby also affirming research question 3.

### Limitations

Although the present study found positive effects in both classwide disruptive and academically engaged behavior with tootling combined with ClassDojo, a discussion of the limitations is warranted. As with any technological aid, malfunctions can occur that hinder use and are out of the user's control. This occurred during the sixth session in the re-implementation phase for Classroom A, as noted on *Figure 1*. The teacher reviewed the tootling procedures and the observation began. Once the teacher attempted to login to ClassDojo so the students could input their tootles, the site displayed an error message that it was over capacity. The students were told to remember their tootles and were allowed to tootle the following day to conclude that session. During the following session, disruptive behavior increased slightly and academically engaged behavior decreased. Additionally, during some of the intervention sessions, treatment integrity dropped to 88% for occurrences such as not rewarding the children when they had met their goal. This occurred when the reward was extra recess or free time that was to be

given at the end of the day, but did not actually occur. Also integrity in Classroom C fell four times for missing steps such as not praising the behaviors that earned the tootles, or reviewing the tootling procedures with the class. However, although integrity was not 100%, the level of the integrity was high enough to produce meaningful changes in classwide disruptive and academically engaged behavior. In addition, although it is likely rare that any intervention is consistently implemented with 100% integrity, it is yet unknown what level of integrity must be maintained in order to produce meaningful changes in behavior with tootling.

Initially, it was unclear how long it would take the student participants to complete the tootles and how many tootles they would generate in one session. Even as the intervention phases progressed, there was considerable variation with regard to the numbers of tootles being produced within each classroom, which made setting goals for reinforcement difficult. For example, Classroom A could easily generate over 150 tootles in one day, but would occasionally generate 75-90. In Classrooms B and C, the students easily generated 50 tootles a day, but sometimes would produce over 100 and other times produce only 20. The teachers also expressed some concern that the students were not being honest about behaviors they had witnessed each other performing. Multiple times students were caught tootling on absent students or tootling on themselves, which disappointed the teachers. Despite the potential for the lack of “quality” in the student-produced tootles, this version of tootling using the ClassDojo program reduced classwide disruptive behavior, increased academically engaged behavior, the teachers found it acceptable and socially valid, and it required significantly less response effort on the teachers’ part than what was required in previous tootling studies. Thus, accurate tooling

may not be critical to induce meaningful behavior change in students. Although student acceptability was not formally measured, the students appeared excited when they learned they all had a unique avatar, and watched the board with anticipation when the teacher projected the tootles for the class.

Lastly, because the tootling intervention contains a number of components (e.g., positive peer reporting, publically posted feedback and progress toward a tootling goal, interdependent group contingency), as aptly noted by Cihak et al. (2009), Lambert et al. (2015), and Lum et al. (2015), the present results cannot be attributed to any one or combination of components. The methodology and design of the current study does not allow the attribution nor isolation of results to any specific components.

#### Implications

Despite the limitations described, results of the current study suggest that tootling with the ClassDojo program is effective for decreasing classwide disruptive and increasing academically engaged behavior for the class. These are important findings considering the need to utilize technologies already present in the classroom in order to make researched-based classroom interventions less time intensive. Additionally, tootling gives students the opportunity to recognize appropriate peer behaviors and can be implemented proactively as a Tier 1 intervention, with classrooms in need of support (Tier II), or possibly in classrooms without a PBIS system in place. Future research could extend the current literature by incorporating other online behavior management systems into classrooms, or using these systems to communicate with students' parents. For example, ClassDojo has the capability to update parents on their child's behavior in real time and provide a mode of communication between the teacher and parent. It is unclear

how increased parent involvement, by way of this type of technological component, would effect classroom student behavior.

Additionally, future research in tootling with the ClassDojo may assess tootling's effectiveness with younger students (i.e., younger elementary grades). It could be possible that due to early exposure to technology, younger children may be capable of recording tootles online, and understanding the online system. As with traditional tootling, the current procedure is based on clear expectations, peer monitoring of behavior, feedback and reinforcement. As such, it is reasonable to believe that with modifications this intervention could be effective for younger students.

APPENDIX A  
TEACHER DEMOGRAPHICS 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 do you have in your classroom? \_\_\_\_\_

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

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## APPENDIX B

## TEACHER CONSENT FORM

**Title of study:** The Tootling Intervention with ClassDojo

**Purpose of study:** I am researching a classroom intervention, called Tootling. This intervention is used to decrease disruptive behavior, increase academically engaged behavior and promote a more positive classroom environment. Additionally, this study will also examine the effects of tootling on an individual student with high levels of disruptive behaviors.

**Who can participate:** Children in upper elementary grades (grades 4-5) and their teachers can participate. Additionally, the children must exhibit disruptive behavior.

**Methods and Procedures:** Upon agreeing to participate in this study, you will be asked to perform several tasks. First, before any intervention begins, we will have a consultation session so that I may determine what student behaviors concern you and define these target behaviors. You will be asked to nominate a student in your class who you believe to be more disruptive than the other students. This student's behavior will be compared to their peers during the intervention. In order to participate, observers will screen your classroom. Your classroom must demonstrate disruptive behavior in 30% or more of the observation intervals to be included in the study. If this criterion is met, I will conduct a training session with you to explain the intervention and practice as much as needed. You will be given a script on what to say to the students, in order to train them on the intervention. This intervention promotes academically engaged behavior by having students record instances of peers' appropriate or prosocial behavior on the ClassDojo program during the day. The students will tootle into the ClassDojo program and you will display the tootles to the class when they are finished. The tootles will count towards a classwide goal, and once students have met this goal you will reward them. Trained graduate observers will conduct classroom observations several times a week, during the time that you suggest disruptive behaviors are most problematic. Instances of academically engaged and disruptive behavior will be recorded during these observation times. Additionally, when the study is finished, both you and the target student will be asked to fill out a questionnaire about the tootling intervention. If the classroom does *not* qualify for participation, or you simply do not wish to participate, you may request other services.

**Benefits:** You may observe improvements in your students' behavior. Additionally, you may be able to use this unique intervention with future students.

**Risks and Discomfort:** There do not appear to be many risks for anyone involved in the study. The students should not experience any anxiety because the intervention is meant to reward appropriate behavior, not punish inappropriate behavior. The greatest distress may come from implementing a new procedure in your classroom. To reduce any distress you may experience, I will be available to answer any questions you have, as

well as provide all necessary materials and training. Students' behavior will be observed, throughout the study. If we observe undesired effects, like an increase in disruptive behaviors, we will modify or terminate the interventions and your students will be offered other services.

**Confidentiality of Records:** All interviews, observations, and other information obtained during this study will be 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 will be removed from publications and/or presentations.

**Voluntary Participation:** 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.

**Teacher's Consent:** 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 Melissa McHugh (email: [Melissa.Mchugh@eagles.usm.edu](mailto:Melissa.Mchugh@eagles.usm.edu)) or Dr. Daniel Tingstrom (Phone: 601.266.5255; email: [Daniel.Tingstrom@usm.edu](mailto:Daniel.Tingstrom@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,

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Melissa McHugh, B.A.  
School Psychologist in Training

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Daniel Tingstrom, Ph.D.  
Supervisor

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**THIS SECTION TO BE COMPLETED BY TEACHER**

Please Read and Sign 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 will be asked to implement a classroom-based intervention called the Tootling, and observations will be conducted in the classroom on the students' behavior. In order to do so, I will be required to complete a consultation session, to implement the intervention, 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 researcher. I further understand that all data collected in this study will be 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*

APPENDIX C  
IRB APPROVAL



**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](http://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: 14102803

PROJECT TITLE: Tootling with ClassDojo

PROJECT TYPE: New Project

RESEARCHER(S): Melissa McHugh

COLLEGE/DIVISION: College of Education and Psychology

DEPARTMENT: Psychology

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Expedited Review Approval

PERIOD OF APPROVAL: 11/04/2014 to 11/03/2015

**Lawrence A. Hosman, Ph.D.**

**Institutional Review Board**

## APPENDIX D

## TEACHER SCRIPT FOR TRAINING SESSION

1. Define tootling.

“Today we are going to talk about tootling. Tootling is the opposite of tattling. When you tattle on someone, you tell the teacher what they did wrong. When you tootle, you tell the teacher something they did right.”

2. Give examples of appropriate tootling.

“When we tootle, we focus on specific behaviors that we have seen with our own eyes, that were appropriate. Behaviors we might see others doing that are appropriate are following the rules and being kind to others. Tootles are NOT compliments about things the person has. Tootling is saying what someone did that was good, not what someone has.”

Provide 2-3 examples of specific rule following behaviors and prosocial behaviors.

Provide a non-example of an incorrect tootle about something a student has.

3. Discuss examples with the class.

“What are some examples of good tootles?”

Respond with praise or correction as students respond.

4. Introduce ClassDojo into tootling and explain the different types of tootles.

Demonstrate how students will tootle on the devices available.

Tell the students, “each tootle should fall into one of these categories: Being respectful toward a teacher, being respectful toward a peer, following classroom rules/ expectations, helping others, and following directions. All you have to do is chose the person you saw and pick the type of behavior you witnessed.”

Use examples they provided to demonstrate how each tootle falls into one of those categories.

“Lets all practice tootling together. Everyone try to tootle using (the name of the device) when I approach you.”

As the students complete the practice session, provide praise and corrective feedback.

5. Go over the procedure.

“Every day you will be reminded to notice positive things you see your peers doing and then each student will have a little time to tootle on ClassDojo. Remember, when you tootle, select the person’s name and what they did that was good. I will display the tootles when everyone is finished.”

6. Tell the students they will be rewarded for tootling.

“At the end of the tootling time, I will display the tootles and we will discuss the number of tootles the class completed and progress towards our class goal. If you have X number of tootles, the class will earn a reward. Please raise your hands to suggest some rewards you would like to earn.”

Brainstorm rewards with the class and choose as many as are feasible.

APPENDIX E  
DAILY TOOTLING SCRIPT

1. Remind students to be on the lookout for positive student behaviors.
  
2. Review tootling procedures.

“Remember what we said about tootling the other day. When you see another student in class, doing something good during this time, remember that person’s name and what they did. The class will be able to tootle in ClassDojo at (name a specific time). Each student will have five seconds to put in tootles. I will display your tootles and total them up. When y’all reach your goal of X number of tootles you will get a class reward.”

After the time period, prompt students to tootle on ClassDojo in an orderly fashion. Tell them they each have five seconds to tootle. This amount of time should be sufficient because they only have to select two items (i.e., the student’s name and category of behavior).

3. Display tootles and discuss the tootling total and progress towards the goal.

At the end of the time period designated for tootling, display the tootles to the class using the interactive white board. Tell them the total number of tootles they earned and subtract this number from their overall goal. An example of this may be, “The class tootled 25 times today, your goal is 80 tootles and now you only

have to earn 55 more tootles.” Praise the students for behaving appropriately, which earned them a tootle.

4. When you finish praising students for tootling:
  - If they did not meet the goal, praise their efforts and remind them that they will have other opportunities to tootle and earn a reward. Reset the ClassDojo. A running total of tootles will be logged within the program.
  - If they did meet the goal, praise their effort and reward as soon as it is possible. For example, take them outside as soon as possible; allow them a small amount of time to eat treats or play. In some cases, rewards may take more time. For instance, if they earn a reward like wearing a hat in class, they may have to bring one from home the next day.



## APPENDIX F

## BEHAVIOR INTERVENTION RATING SCALE

Please evaluate the intervention by circling the number which describes your agreement or disagreement with each statement. You must answer each question.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Tootling with ClassDojo was an acceptable intervention for the students' problem behavior(s).	1	2	3	4	5	6
Most teachers would find tootling appropriate for other classroom behavior problems.	1	2	3	4	5	6
Tootling proved effective in helping to change students' problem behavior(s).	1	2	3	4	5	6
I would suggest the use of tootling with Class Dojo to other teachers.	1	2	3	4	5	6
The behavior problems were severe enough to warrant use of this intervention.	1	2	3	4	5	6
Most teachers would find tootling suitable for the classroom use described.	1	2	3	4	5	6
I would be willing to use tootling again in the classroom.	1	2	3	4	5	6
Tootling did <i>not</i> result in negative side effects for the students.	1	2	3	4	5	6
This intervention would be appropriate for a variety of students.	1	2	3	4	5	6
Tootling with ClassDojo was consistent with interventions I have used in the room setting.	1	2	3	4	5	6
Tootling was a fair way	1	2	3	4	5	6

to handle the students' problem behavior.						
Tootling was reasonable for the problem behaviors described.	1	2	3	4	5	6
I liked the procedures used in tootling with ClassDojo.	1	2	3	4	5	6
Tootling was a good way to handle the students' problem behavior.	1	2	3	4	5	6
Overall, tootling was beneficial to the students.	1	2	3	4	5	6
The intervention quickly improved student behavior.	1	2	3	4	5	6
Tootling produced lasting improvement in child behavior.	1	2	3	4	5	6
Tootling improved the class's behavior to the point that it did not noticeably deviate from behavior in other classrooms.	1	2	3	4	5	6
Soon after using Tootling, I noticed a positive change in the problem behavior.	1	2	3	4	5	6
Student behavior will remain at an improved level even after the intervention is discontinued.	1	2	3	4	5	6
I believe using Tootling will improve student behavior in other setting, as well as in the classroom.	1	2	3	4	5	6
Comparing this classroom to a well-behaved classroom before and after Tootling, this class and the other class's behavior are more alike after using Tootling.	1	2	3	4	5	6

Toothing produced enough improvement so that behavior is no longer a problem in the classroom.	1	2	3	4	5	6
Other behaviors related to the initial problem behavior improved after Toothing.	1	2	3	4	5	6

Adapted from Elliott, S., & Treuting, M. (1991). The behavior intervention rating scale: Development and validation of a pretreatment acceptability and effectiveness measure. *Journal of School Psychology, 29*, 43–51



## APPENDIX H

PROCEDURAL INTEGRITY CHECKLIST: INITIAL TRAINING SESSION WITH  
STUDENTS

To be completed by the primary researcher

Date: \_\_\_\_\_

The teacher completed these steps:

- |   |                |
|---|----------------|
| 1. Defined tootling   | Yes ___ No ___ |
| 2. Gave examples of appropriate tootling                    | Yes ___ No ___ |
| 3. Discussed examples with the class                        | Yes ___ No ___ |
| 4. Introduced ClassDojo, explain different types of tootles | Yes ___ No ___ |
| 5. Practiced tootling                                       | Yes ___ No ___ |
| 6. Went over the procedure                                  | Yes ___ No ___ |
| 7. Told the class they will be rewarded for tootling        | Yes ___ No ___ |

Number of steps completed: /7

Treatment integrity percentage: \_\_\_\_\_

APPENDIX I  
TREATMENT INTEGRITY: MATERIALS CHECKLIST AND TEACHER  
PROCEDURES

To be completed by the primary researcher and observers

Date: \_\_\_\_\_

Materials

- |  |                |
|--|----------------|
| 1. Interactive white board is visible to all students            | Yes ___ No ___ |
| 2. Students have at least two devices available to input tootles | Yes ___ No ___ |

Teacher Procedural Integrity

Did the teacher...

- |   |                        |
|---|------------------------|
| 1. Remind students to be on the lookout for appropriate behaviors                 | Yes ___ No ___         |
| 2. Review tootling procedures   | Yes ___ No ___         |
| 3. Display tootles  | Yes ___ No ___         |
| 4. Discuss the total and progress toward the goal                                 | Yes ___ No ___         |
| 5. Inform if they met the goal  | Yes ___ No ___         |
| 6. Provide praise for behaviors that earned the tootles<br>and tootling correctly | Yes ___ No ___         |
| 7. Reward the class when they meet the goal                                       | Yes ___ No ___ N/A ___ |

Number of steps completed: \_\_\_\_\_ / 8 (If class did not reach goal and reward was not possible)  
\_\_\_\_\_ / 9 (If class reached the goal and the reward was possible)

Treatment integrity percentage: \_\_\_\_\_

## APPENDIX J

## TREATMENT INTEGRITY: DAILY TOOTLING

To be completed by the teacher

Date: \_\_\_\_\_

- |   |                        |
|---|------------------------|
| 1. Remind students to be on the lookout for appropriate behaviors                 | Yes ___ No ___         |
| 2. Review tootling procedures   | Yes ___ No ___         |
| 3. Display tootles  | Yes ___ No ___         |
| 4. Discuss the total and progress toward the goal                                 | Yes ___ No ___         |
| 5. Inform if they met the goal  | Yes ___ No ___         |
| 6. Provide praise for behaviors that earned the tootles<br>and tootling correctly | Yes ___ No ___         |
| 7. Reward the class when they meet the goal                                       | Yes ___ No ___ N/A ___ |

Number of steps completed: \_\_\_/6 (If class did not meet goal and reward was not possible)  
 \_\_\_/7 (If class reached goal and reward was possible)

Treatment integrity percentage: \_\_\_\_\_

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