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The University of Southern Mississippi

THE EFFECTS OF THE TOOTLING INTERVENTION  
USING DAILY REINFORCEMENT

by

Melissa Bryanne McHugh

A Thesis  
Submitted to the Graduate School  
of The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Master of Arts

Approved:

Dr. Daniel Tingstrom  
Committee Chair

Dr. Keith Radley

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Dr. Karen Coats  
Dean of the Graduate School

December 2014

## ABSTRACT

### THE EFFECTS OF THE TOOTLING INTERVENTION

#### USING DAILY REINFORCEMENT

by Melissa Bryanne McHugh

December 2014

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) in decreasing disruptive classroom behavior as well as increasing academically engaged classroom behavior. Tootling is a strategy that encourages and prompts students to report instances of their peers' positive behaviors. Thus far, only three studies have utilized direct observation data for disruptive behavior during Tootling (Cihak, Kirk, & Boon, 2009; Lambert, 2012, 2014). To extend the research on Tootling, direct observation data of disruptive and academically engaged behaviors were collected on both entire classes of students as well as target students. Additionally, reinforcement on a daily schedule could be achieved by Tootling. Participants included lower elementary school students (i.e., second and third grade) and instructors in three classrooms in two Southeastern elementary schools. An interdependent group contingency and publicly posted feedback were used to encourage the production of Tootles during the study. 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 disruptive behavior for both the target student and the students in the classroom as a whole. Results demonstrated decreases in disruptive

behaviors and increases in academically engaged behaviors during intervention phases as compared to baseline and withdrawal phases in Classrooms A and C, and to a slightly lesser extent in Classroom B. Limitations of the present study and directions for future research are discussed.

## ACKNOWLEDGMENTS

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## CHAPTER I

### INTRODUCTION

Disruptive student behaviors in the classroom can hinder learning for students and frustrate both students and teachers (Lane, 2007). Disruptive students are often likely to be excluded or removed from the classroom resulting in an immediate reduction in problem behavior. However, when the student returns, problem behaviors are likely to increase in frequency and intensity (Mayer, 1995; Mayer & Butterworth, 1979). In order to reduce disruptive behaviors and promote a positive learning environment without the emphases on these exclusionary practices, many school districts around the country have put a behavioral support system in place called Positive Behavioral Interventions and Support (PBIS), which has been reported to result in 20% to 60% reductions in office discipline referrals (Luiselli, Putnam, & Sunderland, 2002). PBIS is a system that supports appropriate student behaviors in all school settings to foster a positive environment that is conducive to learning. PBIS programs promote positive school environments by containing specific features such as providing a continuum of support focused on prevention, instructing educators in the proactive teaching of appropriate social behaviors, and making data-driven decisions (Sugai & Horner, 2002). As a proactive measure, expectations are defined, taught, and practiced in each school setting (i.e., classroom, bus, hallway, etc.; Sugai & Horner, 2002). Demonstration of these skills is supported and strengthened by the use of reinforcement in the environment (e.g., staff attention, a tangible item, extra recess time). After reinforcement for desired behaviors, students are more likely to repeat these behaviors in the future. In a PBIS system, inappropriate behaviors do not lead to positive outcomes; instead they lead to a lack of

reinforcement. Therefore, there is something to be gained from demonstrating appropriate behavior, whereas demonstrating inappropriate behavior results in no reinforcement.

In order to make PBIS more effective for all students, different levels of support are needed. For this reason, the RTI three-tier system is utilized (Walker et al., 1996). The focus of Tier 1 is on primary supports and prevention for all children in a school. School-wide, students are taught and reminded of the expectations consistently and receive positive feedback when they are meeting the specified expectations. Classroom behavior management strategies and school discipline practices are examples of Tier 1 supports. Tier 2 efforts provide additional behavioral supports to students who are at greater risk for school failure due to behavioral problems by intervening with specialized interventions in small groups (Walker et al., 1996). Tier 3 is utilized to reduce long-term, complex problem behavior exhibited by students who are at great risk for behavioral, social, and school failure. Tertiary prevention involves implementing individualized interventions to decrease the frequency, intensity, and duration of the inappropriate behavior by tailoring the interventions to specific students (Sugai & Horner, 2002).

Interventions requiring minimal time and resources may be sufficient for students at the Tier 1 or Tier 2 level. However, teachers may have trouble implementing interventions because they may not be in a position to monitor all instances of disruptive or appropriate behavior (Skinner, Nedderniep, Robinson, Ervin, & Jones, 2002) due to many factors that may be distracting (e.g., monitoring a large group or focusing on instruction). Therefore, teachers may rely on students' reports of their peers' behavior. Usually this takes the form of tattling, whereby children report their peers' inappropriate

behavior to adults (Skinner, Cashwell, & Skinner, 2000). Tattling is one example of peer-monitoring, but students can participate in a more positive form of peer-monitoring by reinforcing each other's appropriate and prosocial behavior. As demonstrated by Bandura (1965), when children observe others being positively reinforced for demonstrating a behavior, it may prompt them to engage in those behaviors as well. Tootling is a simple intervention, which uses peer monitoring to target class wide appropriate behavior (Cashwell, Skinner, & Smith, 2001).

### Tootling

Tootling is a relatively new classroom intervention first proposed by Skinner et al., (1998), which capitalizes on peer monitoring and reporting of prosocial behaviors. Students monitor and privately record their peers' prosocial behavior on note cards, which are then collected and read aloud by the teacher. In this way, students engaging in appropriate behavior are praised and publically acknowledged. Basically, it is the opposite of tattling. Pairing tootling with an interdependent group contingency component to reward students for producing tootles appears to be integral to the success of the intervention (Cashwell, Skinner, & Smith, 2001; Skinner et al., 2000). With the exception of three recent studies (Cihak et al., 2009; Lambert, 2012; Lambert, 2014), the initial tootling studies focused on increasing the number of tootles the students produce, not changing student behavior per se. Tootling researchers are now beginning to assess positive changes in behavior with the implementation of the intervention.

An important element of tootling seems to be the group contingency with a public posting component. In general, a group contingency involves delivery of an item or activity (i.e., a reward) that is contingent on the behavior of one or more students in a

group. 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). In a classroom, interdependent group contingencies can be time-efficient for teachers because of the time it takes to track the group's behavior (i.e., the class) and administer one reinforcer for the class is considerably less than tracking individual behaviors and administering multiple rewards and reinforcers. Additionally, students may encourage their peers' use of appropriate behavior to receive the reward due to the fact that access to the reward depends on the behavior of the entire group (Skinner, Skinner, & Sterling-Turner, 2002). Tootling takes advantage of the influence peers have on each other's behavior by encouraging them to monitor their peers and model desired behaviors. The desired behaviors for which the reinforcement is earned have historically been for reaching a predetermined number of tootles as a class. Therefore, reinforcement of prosocial behaviors is indirect; students need to exhibit good behavior to be "tootled" on, and reaching a certain amount of tootles leads to group (i.e., entire class) reinforcement.

In the first published study of tootling, Skinner et al. (2000) used an ABAB withdrawal design to determine the effectiveness of implementing an interdependent group contingency to increase the number of tootles in a general education fourth-grade classroom. Before the intervention began, 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, only corrective feedback about their tootles. During the experimental phase, the group contingency was put in place, and the

teacher publically posted progress toward the goal. The class was informed that if they produced a total of 100 tootles, they could earn a 30 minute recess. When the students met the tootling goal, they received the reward, and the goal was increased to 150 tootles. After the students reached this next goal, they were encouraged to keep tootling but were given no incentive or publically posted feedback (i.e., withdrawal phase). When the treatment phase was reinstated, the students' goal was again 150 tootles, and they were given feedback and a different reward when the goal was reached.

Results from this study (Skinner et al., 2000) were variable; thus, definitive conclusions regarding the effectiveness of the intervention are difficult. During the first intervention phase, the principal began punishing children by denying them access to recess, which was not a component of the intervention. However, once students were reassured that they could still earn the reward, tootling increased. During the withdrawal phase, tootles per day decreased to almost zero. In the final treatment phase, the number of tootles increased to levels greater than those in the first treatment phase but were still variable. Despite the study's limitations, Skinner et al. (2000) demonstrated that increases in tootling could occur with publicly posted feedback and an interdependent group contingency.

Cashwell et al. (2001) replicated the Skinner et al. (2000) study with a second grade classroom using an ABAB withdrawal design, publicly posted feedback, and an interdependent group contingency. Similar to the Skinner et al. (2000) study, students were given instruction on how to tootle prior to data collection. During baseline and withdrawal phases, cards were available for the students to tootle, but no feedback was posted and no reward was mentioned or given. During the first intervention phase, a

criterion of 100 tootles was set that students had to reach in order to earn twenty minutes of extra recess time. The goal was then increased to 150 tootles, and the students could receive a field trip to a playground. In the final intervention phase, the goal was increased to 200 tootles, and the class could earn the opportunity to watch a movie.

Similar to the Skinner et al. (2000) study, Cashwell et al. (2001) had variable results. In baseline, tootling numbers were initially high but decreased during the phase. During the treatment phase, tootling increased considerably, although there was some variability and overlap with baseline levels. During the withdrawal phase, tootles decreased substantially and levels were near zero. When the intervention was reinstated, the amount of tootles increased relative to the withdrawal phase but were not as high as during the first intervention phase, and there was considerable variability. Overall, results indicated that when the intervention was in place, there was more frequent tootling. However, there was variability in the data, and there was no indication that tootling ultimately increased appropriate or prosocial behavior because it was not monitored or measured.

These studies (Cashwell et al., 2001; Skinner et al., 2000) demonstrated that an interdependent group contingency could be used to increase tootling but did not assess the behavioral changes of the students. Thus, Cihak et al. (2009) implemented a tootling intervention to reduce disruptive behavior in students with and without disabilities in a third-grade class using an ABAB withdrawal design and an interdependent group contingency. Thus, unlike previous studies (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. During baseline the teacher wore a

paper bracelet she marked when students were disruptive. After baseline, but before the intervention began, students were taught how to tootle, and the intervention was implemented in the same way as in previous studies (Cashwell et al., 2001; Skinner et al., 2000). While reading the tootles aloud at the end of the day, the teacher totaled the number of tootles and updated the class' progress toward the goal of 75 tootles. After disruptive behavior was reduced by 50% for three consecutive days, researchers withdrew tootling (withdrawal phase) and then subsequently reintroduced it in a second treatment phase.

Results indicated that disruptive behaviors decreased from a mean frequency of 23.3 in baseline to 8.4 during the initial tootling phase (Cihak et al., 2009). During withdrawal, disruptive behavior increased to a mean of 16. Reimplementation of tootling in a second treatment phase resulted in decreases in disruptive behavior to a mean of 3.5. This study clearly demonstrated that tootling was effective at reducing disruptive behaviors. IOA used to assess the reliability of data collected by the classroom teacher were obtained during 30% of the school days within each condition and ranged from 86% to 100%. Procedural integrity data used to assess the teacher's implementation of the intervention were also collected and averaged 99% across all phases.

More recently, Lambert (2012) further extended the research on tootling by examining its effects on classwide inappropriate as well as appropriate behavior using direct observations of student behavior collected by an investigator, not a classroom teacher. Data collected from a researcher or objective outside observer may be more reliable since those individuals can focus primarily on the behavior of interest being observed, whereas a teacher may have more distractions making it difficult to notice all

instances of inappropriate and appropriate behavior (Skinner et al., 2002). 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 and were given examples of what constituted a tootle before intervention began. During intervention, students were given note cards and told to place their tootles in a plastic container. A dry erase board was used to reflect students' progress towards the goal. In the fifth-grade classroom, the initial goal was 65 tootles and was later increased to 100. In the fourth-grade classroom, the initial goal was 65 tootles, and subsequently increased to 75, and later, 85 tootles. In the fifth-grade classroom, once the students reached the goal, they were provided with reinforcement, and the teacher allowed them to vote for their next reward (e.g., edibles, extra recess time). The fourth-grade teacher chose mostly edible items for her classroom.

During the duration of the study, the investigator and trained observers collected data for 20 minutes, at least three times per week using a 10-second momentary time sampling procedure. Classwide occurrences of disruptive and appropriate behavior were recorded. During the withdrawal phase, all tootling materials and procedures were removed. After the final experimental phase, the teachers were told that they could continue the intervention if they wished. Follow-up observations were conducted after two weeks.

Results from Lambert (2012) indicated that disruptive behavior decreased in the fifth grade classroom from a mean of 26.6% of intervals of occurrence in baseline to 14.2% in the first intervention phase. Once tootling was withdrawn, disruptive behavior

increased to a mean of 29.8% and subsequently dropped to 9.4% when tootling was re-implemented. Results from the fourth grade classroom were similar with a 27.3% mean percentage of intervals of disruptive behavior in baseline, 7.4% during the initial tootling phase, 17.3% during the withdrawal phase, and 7.1% during tootling re-implementation. Additionally, mean levels of classroom appropriate behavior were collected in both classrooms and generally reflected an opposite pattern from the disruptive behavior (i.e., as disruptive behaviors decreased, appropriate behaviors increased). In both classrooms, there was an immediate change in the level of disruptive and appropriate behavior when tootling was implemented and subsequently withdrawn.

As a follow up to Lambert (2012), Lambert (2014) extended the tootling literature to include older students (i.e., upper elementary and middle school) and to determine the effect of tootling on individual student behavior by selecting 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 (2012). However, in Lambert (2014) target student data were collected separately from classroom data, which were collapsed across students. Additionally, two sixth-grade classrooms and one seventh-grade classroom were selected to assess the effects of tootling on disruptive and appropriate behaviors in middle school children. Across all classrooms, the initial goal was set at 60 tootles but increased throughout the study depending on the length of time it took to meet the goal, and other factors. For Classroom A, the goals ranged from 60 to 100 tootles; for Classroom B, the goals ranged from 60 to 90 tootles; for Classroom C, the goals ranged from 60 to 75 tootles. It typically took classes between three days to one week to reach the tootling goal and receive reinforcement.

Results from Lambert (2014) demonstrated that tootling produced increases in classwide appropriate behavior in all three classrooms, as well as for all three upper elementary and middle school target students, when tootling phases were compared to baseline and withdrawal phases. Additionally, tootling successfully decreased classwide disruptive behaviors across all three classrooms and across two of the three target students (Lambert, 2014). These results indicate that tootling is not only an effective classroom intervention for younger students but older middle school students as well. The slightly mixed results across the target students indicate that more replications are needed to demonstrate the effects of tootling with specific students who have higher baseline levels of disruptive behavior than their peers.

Based on the literature presented, there is clear evidence that the tootling intervention incorporating an interdependent group contingency and publically posted feedback is effective at not only increasing tootling but also decreasing inappropriate and increasing appropriate behavior (Cihak et al., 2009; Lambert, 2012, 2014). However, to date there has not been consideration of the immediacy or scheduling of reinforcement and how immediacy of reinforcement may contribute to its effectiveness in motivating and influencing behavior (Klein, 2011).

Clearly, immediacy of reinforcement is an important aspect of an intervention. Some classroom interventions utilizing a group contingency component have scheduled more immediate reinforcement following desired behavior than that used in tootling with considerable success in reducing inappropriate behavior. For example, the Good Behavior Game (GBG; Barrish, Saunders, & Wolf, 1969), an overwhelmingly effective classroom intervention also incorporating an interdependent group contingency procedure

(Tingstrom, Sterling-Turner, & Wilczynski, 2006), typically allows more immediate access to reinforcement, usually on a daily basis. In contrast, studies of tootling typically employ a classroom criterion of 65-100 tootles (e.g., Cashwell et al., 2001; Lambert, 2012, 2014; Skinner et al., 2000), often requiring a week or more for the class to achieve this goal. For example, in the Skinner et al. (2000) study, the fourth-grade students did not meet their goal of 100 tootles until the seventh session. Although progress toward the goal was publically posted as a reminder, such delay in reinforcement may have limited the effectiveness of tootling and partly accounted for the variability in results.

Alternatively, both teams in the Barrish et al. (1969) study of the Good Behavior Game met their daily criterion, and thus assessed reinforcement, during 82% of the intervention sessions. From a child development perspective, immediacy of reinforcement is also a more critical issue for younger students (Hall, 1976). Interventions that utilize reinforcers that are more easily, frequently, and immediately accessed are potentially more effective than those which take longer to earn (Hall, 1976).

Studies using children as participants clearly show that increasing the delay between the newly acquired behavior and reward renders the conditioning less effective (Hall, 1976). In a classic study by Terrell and Ware (1961), kindergarten and first grade students were asked to solve two problems to receive reinforcement. After solving one problem they were given immediate reinforcement, whereas answering the other problem correctly resulted in a seven second delay of the reward. Results indicated that children required an average of seven trials to learn to respond correctly when the reward was immediate compared to approximately 17 trials when the reward was delayed by seven seconds (Terrell & Ware, 1961).

### Present Study

Currently in the tootling literature, Cihak et al. (2009) and Lambert (2012, 2014) are the only studies thus far that sought to measure student behavior as a dependent variable, instead of simply attempting to increase the number of tootles produced. These studies support the assertion that tootling can positively affect the behavior of the entire class, yet more replications are necessary to determine how individual student behavior will change in response to the intervention. Lambert (2014) monitored a target student's reaction to the tootling intervention. However, target student data were variable, and more replications are needed. The current study examined the effectiveness of the tootling intervention on both target students and the classroom as a whole. Because Lambert (2014) also targeted specific students, many of the methods used here were derived from that study.

Furthermore, in tootling studies thus far, there is not a daily attainable goal. Some of these criteria take over a week to reach, as in Skinner et al. (2000). Although some of the criteria are lower and easier to reach, like 65 tootles in the Lambert (2012) study, a goal this large may still take days to reach. Although tootling has demonstrated effectiveness, it is curious why such a delay in rewarding appropriate behavior has commonly been built into the tootling studies. It is widely acknowledged that increasing the latency between a behavior and reward decreases the reward's potential for reinforcement of future behaviors, especially with younger participants (Terrell & Ware, 1961; Klein, 2011). In the present study, reinforcement was potentially accessible daily.

The following research questions were evaluated in this study:

1. Will a tootling intervention with a daily criterion decrease disruptive behavior of younger elementary school students in a classroom setting?
2. Will a tootling intervention with a daily criterion increase academically engaged behavior of younger elementary school students in a classroom setting?
3. Will a tootling intervention with a daily criterion decrease a younger elementary target student's disruptive behavior in a classroom setting?
4. Will a tootling intervention with a daily criterion increase a younger elementary target student's academically engaged behavior in a classroom setting?

## CHAPTER II

### METHOD

#### Participants and Setting

Participants included three lower elementary school classrooms in a Southeastern state. Classroom A was a third-grade, general education classroom consisting of 20 students (11 males, 9 females). Of the 20 student participants, 19 were African American, and one was Caucasian. None of the students received Special Education services. The target student, Alma (pseudonym), was identified by the teacher as exhibiting more disruptive behavior than the other students. Alma was an eight-year-old, African American female. The classroom teacher was a Caucasian female with a bachelor's degree in her eighth year of teaching. At the time the study was conducted, the school was participating in a Positive Behavior Intervention and Supports program (PBIS) and received a System-wide Evaluation Tool (SET) rating of 100% during the yearly evaluation. The SET is designed to assess the features of school-wide behavior support on a yearly basis in order to determine annual goals, evaluate intervention efforts, and revise procedures. Higher percentages on the SET reflect a more cohesive PBIS system, as evidenced by a review of permanent products, staff and child interviews, and observations (Sugai, Lewis-Palmer, Todd, & Horner, 2001; Horner et al., 2004).

Classroom B was a second-grade, general education classroom consisting of 21 students (12 females, 9 males). Participants included 18 African American students and three Hispanic students. Three of the students in Classroom B received English as a Second Language services and were identified under the disability category of Other Health Impaired. The target student, Bryan (pseudonym), was a seven-year-old, African

American male. Bryan did not receive Special Education services. The teacher in the classroom was a Caucasian female with a bachelor's degree in her first year of teaching. Both Classrooms A and B were located in the same school.

Classroom C was a third-grade, general education classroom containing 23 students (12 females, 11 males). Participants included 11 African American students, 11 Caucasian students and one Hispanic student. One student received Special Education services under the disability category of Other Health Impaired. The target student, Charles (pseudonym), was an eight-year-old, African American male. Charles did not receive Special Education services. The teacher was a Caucasian female with a master's degree and eight years of teaching experience. At the time this study was conducted, the school was implementing PBIS and had a SET rating of 96.83%. For all three classrooms, data collection and intervention procedures occurred in a general education classroom setting.

Permission to conduct the study was obtained from school district administrators. School principals were then contacted by the primary investigator and asked for referrals of classrooms that were exhibiting concerning amounts of classroom disruptive behavior. Teachers were asked to report demographic information about themselves as well as general information about the class (see Appendix A) and to give informed consent (see Appendix B). Parent permission was also obtained for each of the three target students (see Appendix C). During a screening observation, classrooms exhibiting disruptive behaviors during at least 30% of intervals were included in this study. The disruptive behavior of the target students was not considered during the screening observation because phase change decisions were based on the occurrence of disruptive class

behavior, not target student behavior. All materials and procedures were approved by The University of Southern Mississippi Institutional Review Board (IRB; see Appendix D).

### Materials

Each classroom teacher was given 4 x 6 note cards to dispense to the children so that they could document their peers' appropriate behavior (i.e., tootles). Teachers were provided with a small rectangular container labeled *Tootles*, for students to place their tootles in once they had written them. A large, laminated picture of a thermometer was provided and hung in the front of each room. This "progress thermometer" reflected the class's progress toward their tootling goal, and elicited excitement from the students as it was updated while the teacher counted the number of tootles, giving them a visual representation of reaching their goal. At the end of the time the students were allowed to tootle, the teacher counted the tootles a final time, updated the progress thermometer, and told them whether or not they reached their tootling goal for the day. If the students reached their goal they were rewarded. Rewards were determined by consulting with each classroom teacher and students but mainly consisted of extra time at recess, a special activity (e.g., show and tell), or small edibles and tangibles. The primary investigator provided all edible or tangible items. Before the intervention was introduced to the students, the classroom teachers were given a script for the initial Tootling training session (see Appendix E) and script to remind students of daily tootling procedures (see Appendix F).

### Intervention Rating Profile-15 (IRP-15)

At the study's conclusion, teachers' acceptability of the tootling procedure was assessed. The teachers completed a modified version of the *Intervention Rating Profile-15 (IRP-15)*; Martens, Witt, Elliott, & Darveaux, 1985; see Appendix G). The *IRP-15* is a 15-item questionnaire which measures general acceptability of an intervention using a Likert scale, that ranges from 1 to 6 (strongly disagree to strongly agree). Scores on the *IRP-15* can range from 15 to 90, with higher scores indicating greater acceptability. Interventions that yield ratings above the cutoff score of 52.50 are considered "acceptable." This measure also has high internal consistency, with a reported Chronbach's Alpha of .98 (Von Brock & Elliot, 1987). Modifications included changing the tense of some words, as well as making the language more specific to the tootling intervention. Freer and Watson (1999) have found that such minor alterations of the words in the measures do not affect the reliability ratings.

### Children's Intervention Rating Profile (CIRP)

Following the study's completion, the target student's acceptability of the intervention was assessed. These students completed a modified version of the *Children's Intervention Rating Profile (CIRP)*; Witt & Elliott, 1985; Lambert 2012, Lambert 2014; see Appendix H). The *CIRP* is a seven-item questionnaire that requires students to rate their satisfaction with the intervention on a 6-point Likert scale, with higher ratings indicating higher intervention acceptability. The *CIRP* is reported to have a Chronbach's alpha of .89, which indicates high internal consistency within items (Witt & Elliot, 1985). Similar to the modifications to the *IRP-15*, the tense of some words was changed and the language made more specific to the tootling intervention. Additionally,

a question was added about the student rewards to help assess how much the target students enjoyed the rewards. The CIRP was originally designed to be modified for use with different interventions, and slight modifications did not effect reliability (Witt & Elliot, 1985).

### Dependent Variables

Disruptive and academically engaged behaviors were the dependent variables used 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 not related to the task at hand. These might include talking without permission or about an unrelated topic, making animal sounds, or grunting. Out of seat/area behavior was defined as a student leaving his or her seat or his or her designated area of the room without permission. More specifically, if the student's bottom was not in contact with a chair for more than three seconds and they did not have permission to be standing or walking around, they were considered out of seat/area. Playing with objects was defined as touching or manipulating objects that were not necessary to the task at hand. This included throwing objects or tapping a pen on the desk. These behaviors were chosen because they encompassed a wide array of behaviors, which the teachers indicated were most problematic in their classrooms. For example, if a child were to argue with the teacher, this would be considered an inappropriate vocalization and coded as disruptive behavior.

Academically engaged behavior, a secondary dependent variable, was defined as the student actively involved or participating in independent seatwork, group activities,

and/or attending to teacher instruction, which may have required vocalizations relevant to the task. Although academically engaged behavior was a second dependent variable, phase change decisions were based upon the occurrence of disruptive behavior.

### Data Collection

The primary researcher and trained observers collected data at least three times per week during the time period designated by the teacher as being the most problematic with regard to disruptive behavior. Collection and measurement procedures were consistent across all phases of the study. The dependent variables were measured using a 10-second partial interval, time sampling procedure using an audio recording, which cued observers to begin recording any instances of the dependent variables during each 10-second interval. Disruptive and academically engaged behavior were not mutually exclusive, so any interval in which a student engaged both in disruptive and academically engaged behavior received both marks. Conversely, if a student was not engaged in disruptive behavior, but was not engaged in academic behavior (e.g., sleeping), that interval was neither coded as academically engaged or disruptive. All observations were 20 minutes in length. Data for all non-target students were collapsed to represent the percentage of intervals of classroom disruptive and academically engaged behaviors. Data for target student behavior were reported independently. For both target and non-target students, the percentage of intervals of occurrence of the dependent variables was recorded and determined by dividing the total number of intervals of occurrence by the total number of intervals and multiplying this number by 100. Observations for all three classrooms were conducted during the same instructional time for each observation. In

Classrooms A and C, all observations were conducted during language arts instruction. In Classroom B, all observations took place during science instruction.

Similar to Lambert's (2014) study, the class was divided into groups. Depending on how the room was arranged, these groups were divided by rows or clusters of students. Each student had an assigned number within that cluster or row, except for the target student in the classroom. The target student was observed during the first interval of the observation and every subsequent third interval thereafter. The other students in the classroom were observed during the two intervals between target student intervals. Each day the researcher randomly selected which student in each group (e.g., Student 1, Student 2) was observed first. Each student from each grouping was observed using a 10-second, partial interval procedure. Once every student in the classroom had been observed, the cycle would repeat until the end of the observation (see Appendix I; Lambert, 2014).

### Experimental Design

An ABAB withdrawal design in three classrooms, with a multiple baseline element across Classrooms A and B, was used in this study to assess tootling's effectiveness at decreasing inappropriate behavior and increasing academically engaged behavior, for both the target student and the students in the classroom as a whole. Phase changes were determined by analyzing level, trend, and variability of the classroom disruptive data. Classroom B remained in the baseline phase while Classroom A moved onto the treatment phase. Once a treatment effect was noted for Classroom A, Classroom B began to implement tootling. In another school, Classroom C was added. Because levels of class disruptive behavior were relatively high and stable in Classroom C, an

extended baseline was not warranted. The level, trend, and stability/ variability of the disruptive classroom data in each classroom were used to inform when each phase change occurred.

## Procedure

### *Screening*

During the screening observation, teachers were asked to conduct their classroom in their typical manner to determine if the class met the criteria for inclusion in the study. The teachers were instructed to handle instances of inappropriate and academically engaged behavior in accordance with their typical classroom management techniques. In order to screen in, at least 30% of the intervals observed had to include disruptive behavior by the class. Data collected during the screening observation were collected in the same manner as for baseline and intervention, with the exception of target student data. Target students were identified after the screen-in observation but before baseline observations. Therefore, no target student data were collected during the screening observations.

### *Baseline*

Prior to implementation of the intervention and teacher training, baseline data were collected by the primary researcher and trained observers. Data on the dependent variables, disruptive and academically engaged class and target student behaviors were collected in the three classrooms. Teachers were instructed to adhere to their typical classroom routines during these observations.

### *Training and Preference Assessment*

After baseline data were collected, the teachers received one training session on the tootling procedures from the primary investigator. During this training, the teachers were taught the components of tootling and given a script (Appendix E). The script stated exactly how the teacher was to train the students on tootling. They were also given the opportunity to rehearse the script with the researcher, ask questions, and receive feedback before the intervention, as well during the intervention in order to maintain a high degree of treatment fidelity.

After the teachers were trained on the tootling procedures, they trained students using the script previously mentioned (Appendix E). During this session, students were taught how to monitor and write down the appropriate behavior of their peers using examples. The students had an opportunity to practice tootling, while receiving corrective feedback and praise from the teacher. Additionally, students continued the training session until all students produced at least one valid tootle, verified by the teacher.

During the initial tootling training session, students were asked to identify things they would like to earn. The teacher decided which of the popular items were feasible for the class and provided the primary researcher with a list of items and activities the students suggested. Rewards for the classrooms consisted of small items, edibles, or activity time. All rewards were of little, if any, monetary value.

### *Tootling*

After each classroom had established stability in baseline or there was an increasing trend in disruptive behavior, the training procedures were implemented. Once

training procedures were complete, tootling commenced. During the most problematic time period, the teacher would dispense a note card to each student and ask him or her to record appropriate behavior of their peers using them. During this daily tootling time, the teacher was instructed to use a script, to remind students of the tootling procedures (Appendix F). In order to save paper, students were asked to write two tootles on each note card, one on the front and one on the back. Students were instructed to turn in completed tootles to a centrally located box and allowed more note cards if they were needed.

In order to maintain consistency with the tootling studies thus far and build excitement, an interdependent group contingency and a visual cue were employed with the tootling intervention (Cihak et al., 2009; Lambert, 2012; Skinner et al., 2000). The criterion for the group contingency had to be met by the entire class in order for them to gain access to the reward. However, unlike previous tootling studies, the criteria for reinforcement were a smaller number of tootles, which could feasibly be earned in one day instead of several days. Class goals were determined by consulting with each teacher and were based primarily on factors such as the number of students in each class and the time it would take these second and third-grade students to write an appropriate tootle. All daily goals remained consistent throughout the duration of the study. The daily goals for Classroom A, B and C were 30, 25, and 30 tootles, respectively.

At the end of the tootling period, the teacher updated the number of tootles on the progress thermometer, which served as a visual representation of the student's progress toward their goal and was meant to heighten student interest in tootling. After every five tootles the teacher counted, she filled in more of the thermometer. During this time, the

teacher was instructed to read at least five tootles out loud and praise students for appropriate behavior. If students meet or exceeded the goal, they received access to reinforcement. At the end of the day the thermometer was erased, and the class started a new goal the next day. The teacher was instructed to check with the students to determine what reinforcers were most preferred every time the thermometer was erased and the goal was reset.

#### *Interobserver Agreement and Observer Training*

Interobserver agreement (IOA) was calculated during at least 25% (range= 25%-66%) of the observations throughout all phases across three classrooms between trained observers and the primary researcher for instances of disruptive and appropriate behaviors. When calculating IOA, the total number of agreements was divided by the total number of intervals and multiplied by 100.

Observers consisted of the primary investigator and graduate students trained on the definitions of each dependent variable and recording method prior to data collection. This training took place in the classroom with the primary investigator until all observers achieved at least 90% interobserver agreement (IOA) with the primary researcher. Once observers achieved at least 90% IOA, they were allowed to observe without the primary researcher present. If for some reason 90% agreement was not maintained during observations, they were retrained to a 90% IOA criterion or higher before collecting more data. This occurred twice during the course of the study.

IOA for Classroom A was collected during 66% of baseline sessions, 50% of initial intervention sessions, 66% of withdrawal sessions, and 66% of re-implementation of tootling sessions. IOA across both disruptive and appropriate behaviors was 91.95%

(range 88- 95.5%) during baseline, 96% (range 93-98%) during intervention, 90.5% (range 88-93%) during withdrawal, and 95% (range 93%-97%) during re-implementation. IOA for Classroom A fell to 88% for two observations, and the second observer was retrained prior to collecting subsequent data.

IOA was collected in Classroom B for 44% of baseline sessions, 60% of initial intervention sessions, 33% of withdrawal sessions, and 42% of tootling re-implementation sessions. IOA across both disruptive and appropriate behaviors was 94.8% (range 90- 98%) during baseline, 94% (range 93-95%) during intervention, 92% (range 91-93%) during withdrawal, and 94.5% (range 91-97.5%) during re-implementation.

IOA for Classroom C was collected during 25% of baseline sessions, 40% of initial intervention sessions, 33% of withdrawal sessions, and 40% of re-implementation sessions. IOA across both disruptive and appropriate behaviors was 99% during baseline, 95% (range 94-96%) during intervention, 90% during withdrawal, and 96% (range 95-97%) during re-implementation.

### *Integrity*

Prior to beginning the intervention, each teacher participant's tootling training session with students was assessed using a procedural integrity checklist. The primary researcher completed this checklist to ensure that the teacher implemented every step required to teach the students the tootling procedures (see Appendix J). Because the teachers followed a script during the training session, they were expected to obtain 100% integrity and were told prior to student training that if they did not earn 100% integrity

they would be asked to retrain the students. Classrooms A, B, and C each obtained 100% procedural integrity for their respective student training sessions.

During the intervention phases, observers completed an integrity materials checklist to determine if all the materials necessary were present (i.e., note cards were made available, the progress thermometer was displayed and reset from the day before, the tootling box was accessible and visible; see Appendix K). Integrity was collected for 100% of observations during intervention and re-implementation sessions. In Classroom A, treatment integrity never fell below 100%. In Classroom B, treatment integrity averaged 93% (range = 80-100%). In Classroom C, integrity averaged 90% (range 60-100%). IOA of the checklist was collected during 33% of the treatment sessions in Classroom A, 50% of the sessions in Classroom B, and 40% in Classroom C. Integrity IOA was 100% for all checks. Additionally, the teachers completed a procedural integrity form of their daily implementation to assess their adherence to the intervention steps (see Appendix L). This was necessary because observers were not available to witness each tootling session in its entirety. For the teachers in Classrooms A and C, their reported daily procedural integrity data never fell below 100%. For the teacher in Classroom B, daily integrity data averaged 97.7% (range= 87.5-100%).

## CHAPTER III

### RESULTS

Figure 1 shows the percentage of disruptive behavioral occurrence across Classrooms A and B, as well as across the target student in each classroom. Mean percent of disruptive behavior for Classroom A was 34.8. % (range = 15-50%) of intervals observed during baseline, 15.5 % (range = 8-29%) of intervals during the initial intervention phase, 51.6% (range = 45-56%) of intervals during withdrawal, and 15% (range = 8-19%) of intervals during re-implementation of tootling. Mean percent of disruptive behavior for Alma in Classroom A was 43.3% (range 20-85%) during baseline, 12% (range 0-20%) during the initial intervention phase, 31% (range 23-45%) during withdrawal, and 4% (range 0-10%) during re-implementation of the intervention.

For Classroom B, percent of intervals of occurrence of disruptive behavior averaged 54% (range = 32.5-75%) of intervals during baseline, 18.9% (range = 11-30%) of intervals during the initial tootling phase, 59.8% (range = 53-69%) of intervals during the withdrawal phase, and 28% (range = 18.75-49%) of intervals during re-implementation of the intervention. Mean percent of disruptive behavior for Bryan was 78.6% (range 52-97.5%) during baseline, 38.5% (range 25-47.5%) during the initial intervention phase, 82.6% (range 75-90%) during withdrawal, and 40% (range 25-60%) during re-implementation of the intervention.

Visual analysis of Figure 1 displays that initially there was variability during the baseline phase in Classroom A, but implementation of tootling led to stabilization and disruptive behavior decreased in level and trended downward during the initial tootling and reimplementation phases. Alma's results were consistent with the class as a whole.

In Classroom B, there was high variability during baseline, but once tootling was introduced, the overall level of disruptive behavior dropped dramatically and trended downward. During the withdrawal phase the level of disruptive behavior dramatically increased from the initial tootling phase. Despite the decreasing trend within the phase, disruptive class behavior was high and comparable to baseline levels. During the withdrawal phase, the teacher in Classroom B became increasingly frustrated by the lack of intervention and persistently asked to reimplement. As a result, tootling was reimplemented, and the class continued to exhibit a decreasing trend in disruptive behavior, as well as a considerable decrease in level. Bryan’s disruptive behavior was highly variable in baseline but decreased in level and variability and also had a decreasing trend during tootling phases.

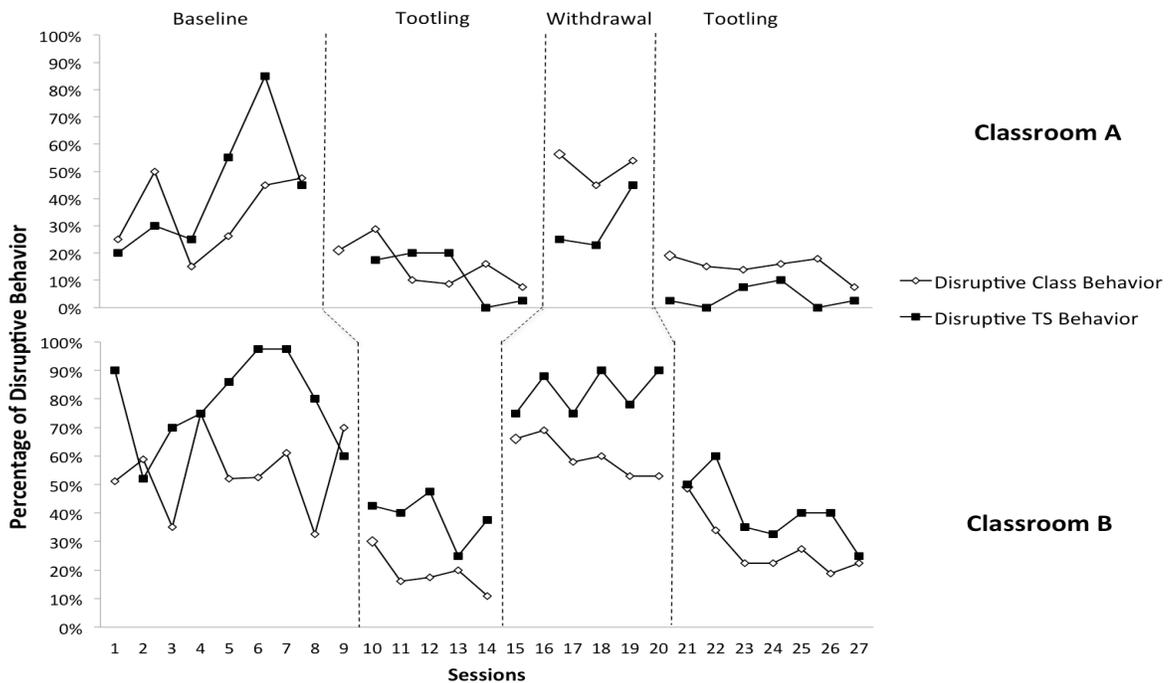


Figure 1. Percentage of intervals containing the occurrence of disruptive class and target student behaviors across all phases in Classrooms A and B.

Figure 2 shows the percentage of academically engaged behavioral occurrence across Classrooms A and B, as well as across the target student in each class. Mean percent of academically engaged behavior for Classroom A was 64.4% (range = 52.5-85%) of intervals observed during baseline, 90.9% (range = 84-98%) of intervals during the initial intervention phase, 54% (range = 44-64%) of intervals during withdrawal, and 87% (range = 84-94%) of intervals during re-implementation of tootling. Mean percent of academically engaged behavior for Alma was 58% (range 18-80%) during baseline, 90.7% (range 83-100%) during the initial intervention phase, 70% (range 60-75%) during withdrawal, and 87.25% (range 45-100%) during re-implementation of the intervention.

For Classroom B, percentage of intervals of occurrence of academically engaged behavior averaged 47.2% (range = 28-63%) of intervals during baseline, 84.45% (range = 81-90%) of intervals during the initial tootling phase, 43.5% (range = 35-50%) of intervals during the withdrawal phase, and 74% (range = 60-82.5%) of intervals during re-implementation of the intervention. Mean percent of academically engaged behavior for Bryan was 23% (range 0-40%) during baseline, 67.5% (range 60-80%) during the initial intervention phase, 19.8% (range 10-25%) during withdrawal, and 60.85% (range 48-77.5%) during re-implementation of the intervention.

Visual analysis of Figure 2 reveals that academically engaged class behavior data were variable during baseline observations for both Classroom A and B but dramatically increased in level and had a positive trend during the initial tootling phase in both classrooms. During the withdrawal phase, academically engaged behavior decreased in level but had a positive trend in each classroom. Reimplementation of tootling produced higher levels of academically engaged behavior for each class. The behavior of both of

the target students was more variable across all phases but was consistently higher during treatment phases than during baseline and withdrawal phases.

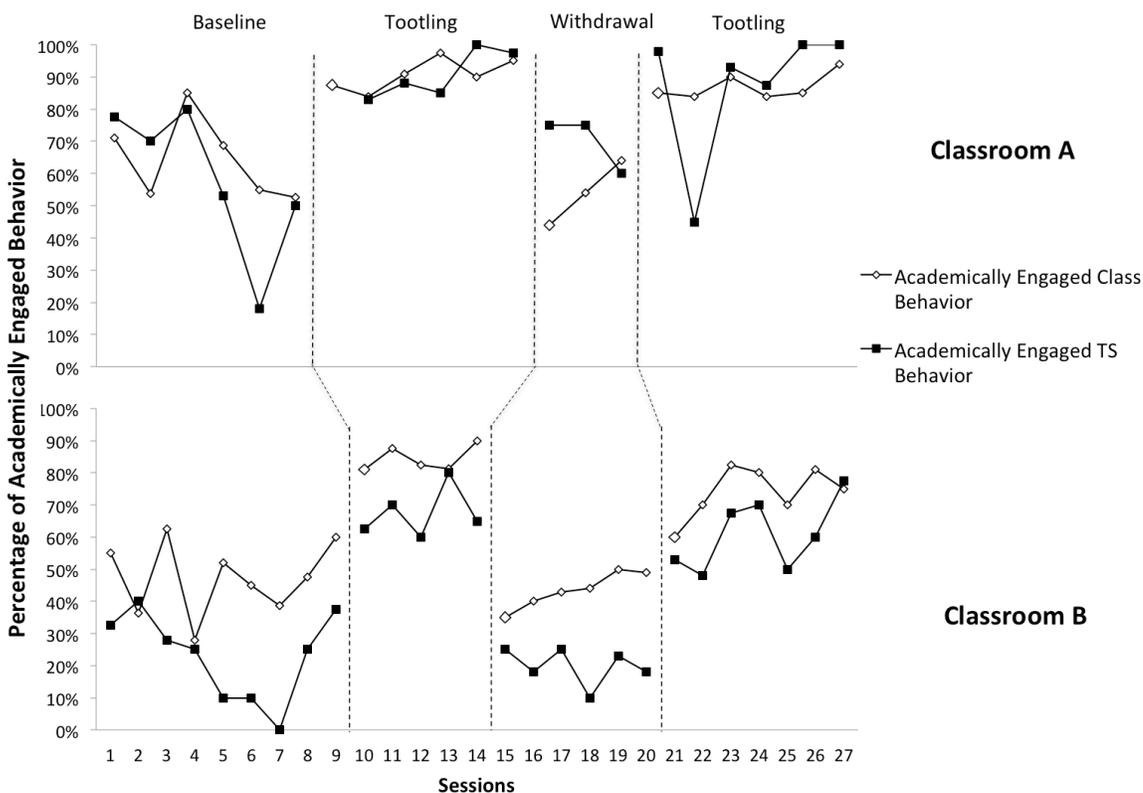
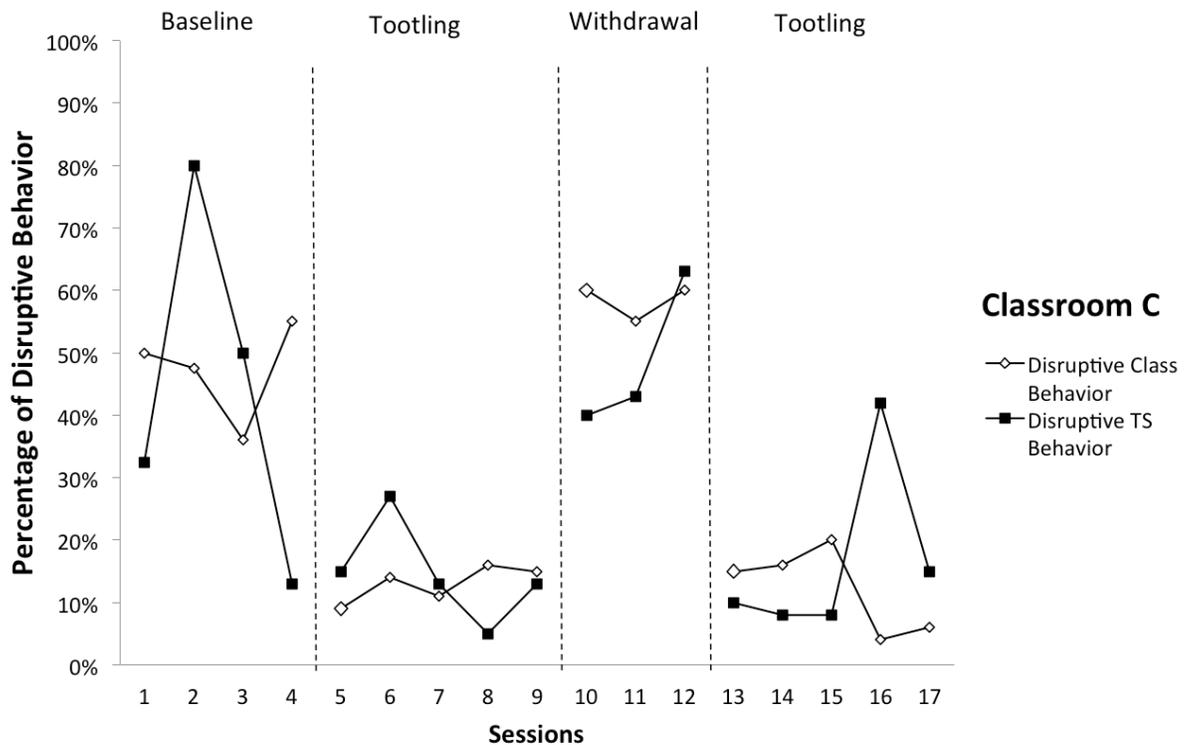


Figure 2. Percentage of intervals containing the occurrence of academically engaged class and target student behaviors across all phases in Classrooms A and B.

Figure 3 shows the percentage of disruptive behavioral occurrence observed in Classroom C as well as the target student. Mean percent of disruptive behavior for Classroom C was 47% (range = 36-55%) of intervals during baseline, 13% (range = 9-16%) of intervals during the initial intervention phase, 58% (range = 55-60%) of intervals during withdrawal, and 12.2% (range = 4-20%) of intervals during re-implementation of tootling. Mean percent of disruptive behavior for Charles in Classroom C was 43.8%

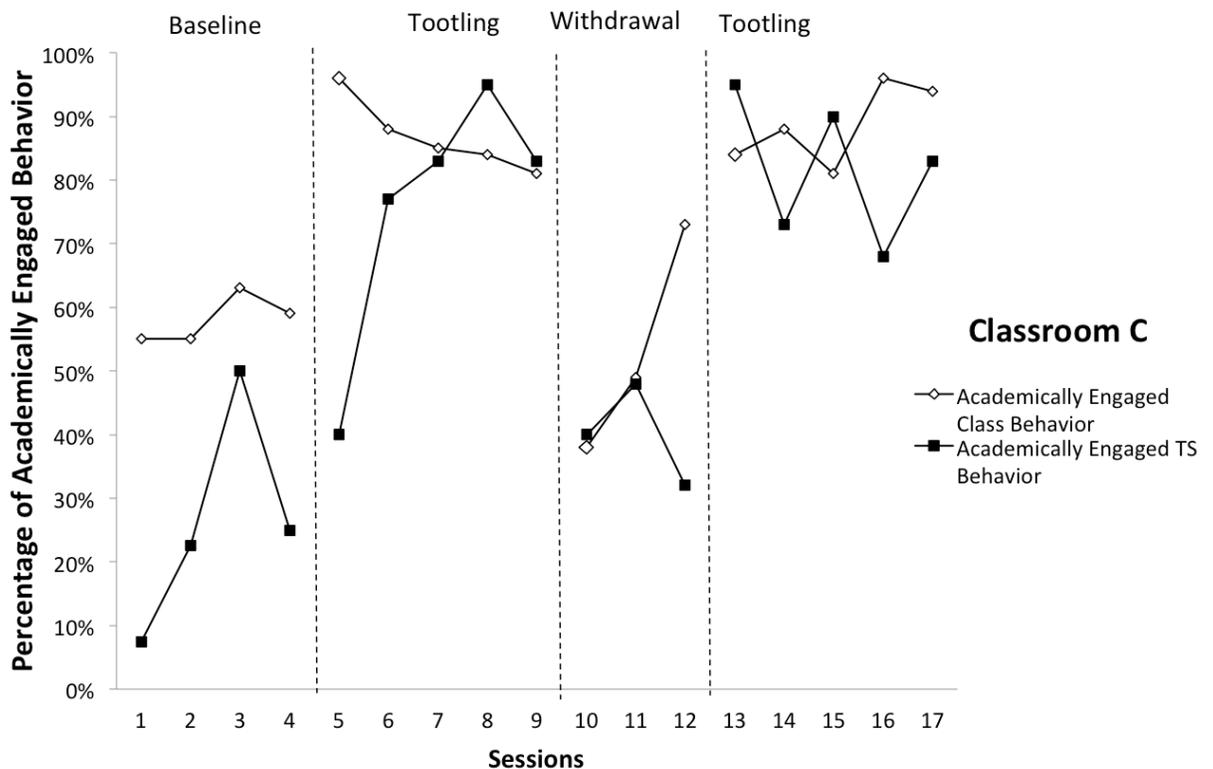
(range 13-80%) during baseline, 14.6% (range 5-27%) during the initial intervention phase, 48.6% (range 40-63%) during withdrawal, and 16.6% (range 8-42%) during re-implementation of the intervention.



*Figure 3.* Percentage of intervals containing the occurrence of disruptive class and target student behaviors across all phases in Classroom C.

Figure 4 shows the percentage of academically engaged behavioral occurrence observed in Classroom C as well as the target student. For Classroom C, the percentage of intervals of occurrence of academically engaged behavior averaged 58% (range = 55-63%) of intervals during baseline, 86.8% (range = 81-96%) of intervals during the initial tootling phase, 53% (range = 38-73%) of intervals during the withdrawal phase, and 88.6% (range = 81-96%) of intervals during re-implementation of the intervention. Mean percent of academically engaged behavior for Charles was 26.25% (range 7.5-50%)

during baseline, 75.6% (range 40-95%) during the initial intervention phase, 40% (range 32-48%) during withdrawal, and 81.8% (range 68-95%) during re-implementation of the intervention.



*Figure 4.* Percentage of intervals containing the occurrence of academically engaged class and target student behaviors across all phases in Classroom C.

Visual analysis of Figure 3 reveals substantial decreases in levels of disruptive class behavior during tootling phases, compared to baseline and withdrawal phases. Target student behavior also reflects this trend, although to a lesser extent and with more variability. Visual analysis of Figure 4 also shows higher levels of academically engaged class behavior during tootling phases, compared to non-tootling phases. However, there is a decreasing trend of academically engaged behavior during the initial tootling phase

and an increasing trend in academically engaged behavior during the withdrawal phase. Charles' behavior is much more variable but generally reflects increasing trends and levels during tootling.

#### Teacher and Student Acceptability

All three teachers were asked to complete the IRP-15 following the end of data collection sessions. Total overall scores from teachers suggest high acceptability of the intervention for Classrooms A and B with scores of 85 and 90, respectively. Scores from the teacher of Classroom C suggest moderate acceptability, with a score of 74 and no ratings lower than 4 (slightly agree) on any of the responses. Scores on the IRP-15 are considered "acceptable" if they fall above 52.5 (Von Brock & Elliott, 1987).

The target student in each classroom was asked to complete a modified CIRP upon completion of the study to assess acceptability of the intervention. Alma gave tootling an average rating of 5, Bryan a 4.7 (range 3-5), and Charles gave a 3 rating (range 1-5). Although reliability and validity have not been established for the CIRP, higher agreement with statements reflects higher acceptability.

## CHAPTER IV

### DISCUSSION

The current study was intended to replicate the findings of Cihak et al. (2009) to determine if tootling would reduce classwide disruptive behavior. Additionally many methods were derived from Lambert (2012) and Lambert (2014) to examine effects on classwide and target student disruptive, as well as appropriate behavior. This study contributes to the Tootling literature by demonstrating the effects of the Tootling intervention using a daily attainable goal with an interdependent group contingency, instead of a goal which may take much longer to obtain (e.g., several days to a week or longer).

#### Research Question 1

The first research question posed, examined whether tootling with a daily criterion would decrease classroom disruptive behavior. For Classrooms A and B, implementation of tootling led to stabilization and disruptive behavior decreased in level and trended downward during the initial tootling and reimplementation phases. For Classroom C during tootling phases, there were dramatic reductions in level of disruptive behavior, as well decreased variability during the initial tootling phase. These results are consistent with those found by Cihak et al. (2009) and Lambert (2012, 2014) in which disruptive behavior was decreased in classroom settings during tootling, as baseline levels of disruptive behavior were much higher in the present study than those reported in previous studies and were greatly reduced. Although using a daily goal in the present study did not appear to be substantially superior to goals taking longer to reach (e.g.,

Cihak et al., 2009; Lambert 2012, 2014), students were able to access reinforcement more frequently and more immediately.

### Research Question 2

The second research question sought to examine if the tootling intervention with a daily criterion could increase classroom appropriate behavior in addition to decreasing classroom disruptive behavior. Data from the present study indicate that tootling promoted appropriate class behavior as indicated by increases in levels and trend of appropriate behavior during all of the tootling phases across all three classrooms, except the initial tootling session in Classroom C, which had a slight decreasing trend. These results are comparable with those of Lambert (2012, 2014) in which tootling increased appropriate behavior in the classroom. Again, however, using a daily goal that is more immediately and frequently accessed did not produce substantially superior results than longer goals in Lambert (2012, 2014).

### Research Question 3

Research question 3 sought to determine if tootling with a daily criterion would decrease a target student's disruptive behavior. In Classroom A, Alma's disruptive behavior was largely variable during baseline and withdrawal phases but decreased in level and trended downward during tootling phases. In Classroom B, Bryan's behavior was largely variable during baseline but became more stable during the initial tootling phase and decreased in level, with an overall decreasing trend. During withdrawal, his behavior returned to a high level but decreased steadily with the reimplementation of the intervention. Charles's behavior in Classroom C indicated a high degree of variability with a decreasing trend of disruptive behavior during baseline. During the tootling

phases, much less variability was observed, and levels of disruptive behavior were lower than during baseline and withdrawal. These results are consistent with Lambert (2014). In both studies, there was a high degree of variability with the target students, but tootling generally lowered levels of disruptive behavior and increased stability. These results strengthen the tootling literature by providing support that this intervention can be beneficial for individual students, in addition to the group.

#### Research Question 4

The final question was intended to examine whether tootling with daily reinforcement would increase the target student's appropriate behavior. Alma's, Bryan's, and Charles's appropriate behavior were observed at much higher levels during tootling phases than during baseline and withdrawal phases. Lambert (2014) had similar findings. These results are significant because decreasing disruptive behaviors while encouraging appropriate replacement behaviors is important. Encouraging appropriate behaviors (e.g., task engagement) may stimulate students to actively participate, thereby potentially contributing to greater benefits from classroom instruction.

#### Limitations

Although positive effects were demonstrated with the use of tootling with daily reinforcement, several limitations should be discussed. In Classroom B, teacher reported integrity fell to 87.5% twice (for not rewarding students), and the materials check by the observers fell to 80% (for not erasing the tootling thermometer) on four different occasions. It was also noted that the students did not reach their goal of 25 tootles on the first day of implementation because the teacher allowed them only five minutes of "tootling time." The second day of implementation, the students reached their goal, but

the teacher did not allow them to receive the previously promised reinforcement, in an effort to punish them for activities unrelated to tootling. Although beneficial effects were noted in Classroom B, the effects may have been stronger if the students had encountered reinforcement from tootling within the first two intervention sessions as intended. In Classrooms A and C, the students met their daily goal each day during intervention sessions and were always rewarded by the teacher.

In Classroom C, the integrity for materials dropped on one occasion to 60% because the note cards were not visible and the tootling box was out of reach during the observation, yet the teacher reported that she strictly adhered to the procedures and obtained positive results. This suggests that all materials may not be vital to the success of tootling and improvising may be possible (e.g., using slips of paper instead of note cards).

Frequency of tootling and data collection is another potential limitation. Due to scheduling conflicts with Classroom B, the students were not observed as frequently as in Classrooms A and C (i.e., at least 3 times per week). The teacher in Classroom B was unable to predict when the students would be in her room as opposed to another second grade teacher's room and as a result, they were often gone when observations were scheduled to take place. School holidays and celebrations also conflicted with data collection (i.e., Thanksgiving break, Winter Break, pep rallies). Due to these scheduling conflicts as well as a decreasing trend in disruptive behavior, the withdrawal phase in Classroom B took approximately one month. Subsequently, Teacher B reported agitation with the high levels of disruptive behavior during this withdrawal phase and strongly requested that she be allowed to reimplement tootling despite the decreasing trend. In the

case of applied work, these concessions are sometimes necessary. Data collection for Classroom B took approximately four months total to complete, whereas Classrooms A and C required approximately two months each.

Teachers B and C reported that their respective target students, Bryan and Charles, were taking medication to help them control their impulsive behaviors, but taking it inconsistently. There is no way to reliably verify this information, but if accurate, it may have contributed to some of the variability in their behavior.

#### Future Implications

Despite the limitations described, results of the current study suggest that tootling with a daily reinforcement component is effective for decreasing disruptive and increasing appropriate behavior for the class, as well as for individual target students. These are important findings considering the need for researched-based classroom interventions, which are not time or resource intensive and can be used independently or in conjunction with a PBIS system as a Tier I or Tier II level intervention for classroom management. In addition to the positive results on student behavior, the intervention was rated as highly acceptable by the teachers, which may indicate that they will use the intervention outside of the study. Future research may examine “streamlining” the tootling process to make it less time consuming by utilizing technologies many classrooms already employ. An example of this may be Class Dojo, an online behavior management program designed to let teachers instantly update and display feedback to the class. Adding a technological component to classroom interventions may not only make them less cumbersome to implement, it may also heighten student interest and response to the intervention.

## 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 student's receive services under (do not include names or any other identifying information):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**Target Student Demographics:**

Is this student in SPED or General Ed.? \_\_\_\_\_

If Special Education, what disability category does the student receive services under:  
\_\_\_\_\_

Age: \_\_\_\_\_

Grade: \_\_\_\_\_

Race: \_\_\_\_\_

## APPENDIX B

## TEACHER CONSENT FORM

**Title of study:** The Effects of the Tootling Intervention Using Daily Reinforcement

**Purpose of study:** I am researching a classroom intervention, called Tootling. This intervention is used to decrease disruptive behavior, increase appropriate 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 lower elementary grades (grades 2-3) and their teachers can participate. In addition, 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, which 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, for you to feel confident. You will be given a script on what to say to the students, in order to explain the game and train them on the intervention. The Tootling intervention promotes appropriate behavior by having students write down instances of peer's appropriate or prosocial behavior on note cards during the day. The students will place these "tootles" in a container and you will total them towards the end of the day and give them a reward if they meet the specific goal. Trained graduate observers and myself will conduct classroom observations several times a week, during the time that you suggest disruptive behaviors are most frequent. Instances of appropriate and disruptive behavior will be recorded during these observation times. You will be given feedback on your implementation of the procedures, after each observation. Additionally, when the study is finished, both you and the students 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 and your students may benefit from the decrease in disruptive behavior and increase in appropriate behavior, by using the Tootling intervention. Additionally, you may be able to use this intervention with other 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 due to the Tootling intervention because it is meant to reward appropriate behavior, not punish inappropriate behavior. For you, the greatest distress may come from implementing a new procedure in your

classroom. To reduce any anxiety you may have, 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 experimenter. 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.*

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*Signature of Teacher*

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*Date*

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*Signature of Witness*

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*Date*

## APPENDIX C

## PARENT CONSENT FORM

**Title of study:** The Effects of the Tootling Intervention Using Daily Reinforcement

**Purpose of study:** Your permission is requested for your child to participate in a study that is investigating the effects of a class-wide intervention called Tootling. Tootling is used to decrease disruptive behavior, increase appropriate behavior and promote a more positive classroom environment. This study will also examine the effects of the intervention on individual students referred for high levels of disruptive behaviors.

**Who can participate:** Children in lower elementary school who exhibit disruptive behavior may participate. Your child's teacher has agreed to implement the Tootling procedure with all children in the classroom. Additionally, your child has been nominated as a student who may qualify for participation as a target student.

**Methods and procedures:** Before the study begins, the class and your child will be observed for the occurrence of appropriate and disruptive behavior. If the class qualifies for the study, the Tootling procedure will be implemented in your child's classroom. Tootling is basically the opposite of "tattling." Students are asked to report peers' positive behaviors to the teacher, instead of negative behaviors. In Tootling, when a student sees a peer acting appropriately or following rules, they will write down what they observed on a note card and turn it into a box. If the class reaches a certain number of tootles, they will be rewarded. Graduate students from The University of Southern Mississippi will conduct observations during a class time that the teacher identifies as being highly disruptive. Observers will record disruptive and appropriate behaviors of both your child and the other students.

**Benefits and risks:** Your child's behavior may improve as a result of this intervention. All children in this classroom will be equally involved in Tootling, meaning that your child will not receive any additional intervention outside of the procedures described, or be singled out in any way. The only difference is that your child's behavior will be observed separately from his/her classmates, which will not effect your child. In the event of unintended results (i.e., your child's behavior may worsen), modifications of the intervention will take place or he/she will be provided with additional services.

**Confidentiality of Records:** All information gathered during this study will be kept confidential. Any identifying information about your child will be withheld from anyone not connected with the study. The only circumstances that would obligate us to release information would be if your child reports abuse, or plans to harm himself/herself or other. If data from this study are used for presentations or publications, all identifying information will be kept confidential. Participant records will be kept for three years after the completion of the study. After three years, materials will be shredded.

**Voluntary Participation:** Permission for your child's participation in this study is voluntary. You may withdraw your child from this study at any time without penalty, prejudice, or loss of benefits. Because we are teaching an intervention to the classroom teacher, he or she may choose to continue using the intervention. However, at your request we would not include any data associated with your child in the present investigation. 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.

**Parent Consent:** If you agree to allow your child 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 or Dr. Daniel Tingstrom (Phone: 601-266-5255; email: [Melissa.mchugh@eagles.usm.edu](mailto:Melissa.mchugh@eagles.usm.edu); [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, 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

**THIS SECTION TO BE COMPLETED BY PARENT**

Please Read and Sign the Following:

*I have read the above documentation and consent for my child 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 have my child participate under the conditions stated. I have also received a copy of this consent. I further understand that all data collected in this study will be confidential and that my child's name and the teacher's name will not be associated with any data collected. I understand that I may withdraw my consent for my child's participation at any time without penalty, prejudice, or loss of privilege.*

\_\_\_\_\_  
*Name of Child*

\_\_\_\_\_  
*Signature of Parent*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Signature of Witness*

\_\_\_\_\_  
*Date*

## APPENDIX D

## IRB APPROVAL



THE UNIVERSITY OF  
SOUTHERN MISSISSIPPI

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**INSTITUTIONAL REVIEW BOARD**

118 College Drive #5147 | Hattiesburg, MS 39406-0001

Phone: 601.266.6820 | Fax: 601.266.4377 | www.usm.edu/irb

**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: **13082701**

PROJECT TITLE: **The Effects of the Tootling Intervention Using Daily Reinforcement**

PROJECT TYPE: **Thesis**

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: **08/30/2013 to 08/29/2014**

**Lawrence A. Hosman, Ph.D.**  
**Institutional Review Board**

## APPENDIX E

## 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. Appropriate behaviors follow the rules. A good example of a tootle is, Billy raised his hand when he had a question. Tootles are NOT compliments on things the person has. Is telling the teacher Maggie has cool shoes an example of a tootle?” Wait for responses. “The correct answer is no. Tootling is saying what someone did that was good, not what someone has.”

3. Discuss examples with the class.

“What are some examples of good tootles?”

Respond with praise or correction as students respond.

4. Introduce note cards into tootling.

Pass out one note card to each student. “On these note cards, you will write the student’s name and what he or she did that was good. You will write one tootle on each side of the note card, so when you turn them in later, each card should have two tootles on it- one on each side.”

5. Practice tootling.

“Lets all practice tootling together. Everyone write one tootle on each side of their note card. When you finish, I will read them out loud.”

Collect note cards and read them out loud. As you read provide corrective feedback for incorrect examples and praise for satisfactory examples.

6. Go over the procedure.

“Every day you will be given note cards and when you see another boy or girl in your class doing something good during this time period, write it down on the note card. You can write one tootle on the front and one tootle on the back. When your card has two tootles on it, use a new card. If you use up all of your

cards, I will give you more. Remember, when you tootle, write the person's name and what they did that was good.

7. Tell the class where to put their tootles.

“When you have free time between activities, you can put your note cards in this container (gesture to box). This means you can put your tootles in the box when we are leaving the room or about to begin an activity. If you finish a tootle in the middle of a lesson or activity, you will have to hold onto it until you have free time.”

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

“At the end of the period, I will count the number of tootles from the container and adjust this progress thermometer (gesture to progress thermometer) so y'all can see how much you've tootled. If you have X number of tootles, the class will earn a reward. What are some rewards you would like to earn?”

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

APPENDIX F  
DAILY TOOTLING SCRIPT

1. Hand out note cards to each student at the beginning of the time period.

“We are going to write tootles today. Here are your note cards.

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, write that person’s name and what they did on the note card. You can write one tootle on each side. Hold on to your cards until we are switching activities, or until you have free time.”

“If y’all reach your goal of X number of tootles you will get X reward.”

Make sure goal is noted on the progress thermometer.

3. During free time and transition periods, prompt students to turn in the cards.

“If you have completed tootling cards to turn in, you may put them in the box now.”

4. At the end of the time period designated for tootling, total number of tootles as you raise the progress thermometer for every 5 tootles you count. This is meant to excite the students as they watch you in anticipation, hoping they reached the class goal.

While you complete step 4, choose at least 5 tootles to read out loud to the students. Praise the students for doing nice things, which earned them a tootle. Also, praise the class for writing good tootles.

5. When you finish counting the tootles produced during that time period and updating the progress thermometer after every 5 tootles, inform the class as to whether or not they met the goal.
  - If they did not meet the goal, praise their effort and remind them that they will have other opportunities to tootle and earn a reward. Reset the progress thermometer.
  - If they did meet the goal, praise their effort and reward as soon as soon as it is feasible. If it is at all possible to reward them that same day, reward them then. For example, take them outside as soon as possible; allow them a small amount of time to eat small 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 G

## INTERVENTION RATING PROFILE-15/ MODIFIED VERSION

Please respond to each of the following statements thinking about the intervention you implemented (i.e., Tootling). Please then circle the number associated with your response. Be sure to answer all statements.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Tootling 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 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 was consistent with interventions I have used in the classroom setting.	1	2	3	4	5	6
Tootling was a fair way to handle the students' problem behavior.	1	2	3	4	5	6
Tootling was reasonable for the problem behaviors described.	1	2	3	4	5	6
I liked the procedures used in tootling	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

Taken and adapted from, Martens, B.K., Witt, J.C., Elliott, S.N., & Darveaux, D. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice*, 16, 191-198.

## APPENDIX H

## CHILDREN'S INTERVENTION RATING PROFILE (CIRP)/ MODIFIED VERSION

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Tootling was fair.	1	2	3	4	5	6
I liked Tootling.	1	2	3	4	5	6
I think other students would like Tootling	1	2	3	4	5	6
Tootling helped me do better in school.	1	2	3	4	5	6
Tootling did <b>not</b> cause problems for me	1	2	3	4	5	6
Tootling did <b>not</b> cause problems for my friends	1	2	3	4	5	6
I liked the rewards we earned by Tootling	1	2	3	4	5	6

Originally adapted from Witt, J. C., & Elliot, S. N. (1985). Acceptability of classroom intervention strategies. In T. R. Kratochwill (Ed.), *Advances in School Psychology* (Vol. 4, pp. 251-288). Hillsdale, NJ: Erlbaum. Copyright 1985 by Lawrence Erlbaum Associates, Inc. Reprinted.

Further adapted from Lambert (2014). Evaluating the use of tootling for improving upper elementary/middle school students' disruptive and appropriate behavior. (Abstract of a dissertation). University of Southern Mississippi, Hattiesburg, MS.

APPENDIX I  
OBSERVATION FORM

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

Taken and adapted from, Lambert, A.M. (2014). Evaluating the use of tootling for improving upper elementary/middle school students' disruptive and appropriate behavior. (Abstract of a dissertation). University of Southern Mississippi, Hattiesburg, MS.

## APPENDIX J

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 note cards into tootling               | Yes___ No___ |
| 5. Practiced tootling                                | Yes___ No___ |
| 6. Went over the procedure                           | Yes___ No___ |
| 7. Told the class where to put their tootles         | Yes___ No___ |
| 8. Told the class they will be rewarded for tootling | Yes___ No___ |

Number of steps completed: /8

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

## APPENDIX K

## TREATMENT INTEGRITY: MATERIALS CHECKLIST

To be completed by the primary researcher and observers

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

1. Progress thermometer is visible to all students in the classroom Yes \_\_\_ No \_\_\_
2. Progress thermometer was reset from the day before Yes \_\_\_ No \_\_\_
3. Tootling box is visible and accessible to students Yes \_\_\_ No \_\_\_
4. Students have note cards on their desks Yes \_\_\_ No \_\_\_
5. The teacher has additional note cards available upon request Yes \_\_\_ No \_\_\_

Number of steps completed:    /5

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

## APPENDIX L

## TREATMENT INTEGRITY: DAILY TOOTLING

To be completed by the teacher

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

1. Provide students with note cards Yes \_\_\_ No \_\_\_

2. Review procedures and remind them of progress Yes \_\_\_ No \_\_\_

thermometer

3. Remind them when/where they can turn in tootles Yes \_\_\_ No \_\_\_

4. Total tootles at the end of the period- updating thermometer Yes \_\_\_ No \_\_\_

5. Read at least 5 tootles Yes \_\_\_ No \_\_\_

6. Inform if they met the goal Yes \_\_\_ No \_\_\_

7. Provide praise for behaviors that earned the tootles Yes \_\_\_ No \_\_\_

and tootling correctly

8. Reward the class when they meet the goal Yes \_\_\_ No \_\_\_

Number of steps completed: /8

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

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