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The Effects of Tootling on Disruptive and Academic Behaviors in High School

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THE EFFECTS OF TOOTLING ON DISRUPTIVE AND ACADEMIC BEHAVIORS IN HIGH SCHOOL

by

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ABSTRACT

THE EFFECTS OF TOOTLING ON DISRUPTIVE AND

ACADEMIC BEHAVIORS IN HIGH SCHOOL

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Considered the opposite of tattling, tootling is a procedure where students report their classmates' positive behavior instead of inappropriate behavior. This study examined the effects of tootling on students' behavior in three general education high school classrooms. An A-B-A-B withdrawal with follow-up design was used to assess the effects of the intervention on decreasing classwide disruptive behavior and increasing academically engaged behavior. Students wrote tootles anonymously on paper slips, and deposited them into a marked container. An interdependent group contingency procedure was used to create a class goal for the number of submitted tootles, which led to a class reward when achieved. The teacher recorded the number of tootles submitted on a publicly posted progress chart, and verbally reported a sample of tootles at the end of each class period. Students created a new name for the intervention, and voted on class rewards. All classrooms displayed decreases in disruptive behavior and increases in academically engaged behavior during intervention phases. These results suggest that tootling can provide high school teachers a method for positively reinforcing students' prosocial behavior, and function as a preventative measure against disruptive behavior.

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AEB	Academically Engaged Behavior
BIRS	Behavior Intervention Rating Scale
GBG	Good Behavior Game
IOA	Interobserver Agreement
IRP-15	Intervention Rating Profile-15
NAP	Nonoverlap of All Pairs
OHI	Other Health Impairment
PBIS	Positive Behavior Interventions and Supports
PII	Problem Identification Interview
PPR	Positive Peer Reporting
RtI	Response to Intervention
SLD	Specific Learning Disability

CHAPTER I

INTRODUCTION

Disruptive behaviors can cause negative outcomes for both teachers and students. The National Center for Education Statistics (2008) reported that 36% of public school teachers felt that student misbehavior interfered with their teaching. Classroom disruptions are associated with lower student achievement for both the offending student as well as the student's classmates (Lannie & McCurdy, 2007). The implementation of the No Child Left Behind Act and the Individual's With Disabilities Education Act in 2004 by the United States government has intensified pressure on school administration, teachers, and staff to increase student performance in the classroom (George, White, & Schlaffer, 2007). It is important that teachers implement effective classroom management strategies that decrease disruptive classroom behavior and maximize academic instruction time.

When incidental antisocial behaviors occur, most classroom and school settings introduce punishment (Skinner, Cashwell, & Skinner, 2000). This model can prevent antisocial behaviors (Sulzer-Azaroff & Mayer, 1986), but it can also lead students to simply avoid being seen while engaging in the inappropriate behavior to elude punishment (Skinner et al., 2000). Winett and Winkler (1972) were among the first researchers to suggest professionals focus on appropriate behaviors. More recently, there has been an increased shift towards using preventive strategies over reactive ones in many school districts, and there are now systems being implemented in schools that specifically concentrate on positive behaviors (Sugai & Horner, 2000). One of these strategies is Positive Behavior Interventions and Supports (PBIS). This is a system-wide

approach that aims to prevent problem behavior by using evidence-based academic and behavioral practices to create a positive school environment. The main goal of implementing PBIS is to improve academic and behavior outcomes for all students (Sugai & Horner, 2000). In a PBIS setting, students are provided with a structured environment that incorporates clearly stated expectations, and appropriate behaviors are purposefully reinforced (Horner et al., 2004).

PBIS is designed to change more traditional punitive discipline approaches to positive and preventive procedures. PBIS has been found to have positive impacts across many areas of a school. Horner et al. (2009) found that improved implementation of PBIS was functionally related to improvements of perceptions of safety at school, the number of students meeting or exceeding state reading assessment scores, and number of office referrals. Reductions in problem behavior have also been found in middle school settings that have implemented PBIS (Lassen, Steele, & Sailer, 2006). A more recent study by Simonsen et al. (2012) found that elementary, middle, and high schools that implemented PBIS with fidelity had improved social outcomes and academic performance in math.

PBIS utilizes the multi-level/three-tier approach to intervention from the Response to Intervention (RtI) system. Walker et al. (1996) describe the primary level (Tier 1) as being designed to meet the needs of most students in all settings of a school environment. This can include implementing school wide discipline plans, and utilizing effective teaching procedures. Some intervention examples include posting school-wide rules and expectations around different areas of the school, and providing praise for students behaving appropriately. The secondary level (Tier 2) includes targeted interventions for students who display significant risk factors and require more

specialized forms of assistance (George et al., 2007). Small group interventions, instruction, or tutoring can occur at the secondary level. This may include interventions such as using daily behavioral report cards or a student check-in/check-out procedure. The tertiary level (Tier 3) is aimed at students with consistent behavioral problems who have demonstrated a lack of response to primary and secondary level interventions, and typically involves individualized treatment (Walker et al., 1996). Interventions at the tertiary level can include strategies such as using functional behavioral assessments.

Scott and Barrett (2004) found that in addition to improvements in academic and social behavior, an estimated 79.5 days of instructional time was saved in a school that implemented PBIS. The same study found that in terms of dollar amounts, $6,854.93 was saved during the first year of implementation, and $9,917.74 was saved during the second year based on working times of the school staff. Elementary school teachers who are in schools implementing PBIS with high fidelity have significantly lower levels of teacher burnout, and higher levels of perceived efficacy compared to national norms (Ross, Romer, & Horner, 2012). While there are concerns about how difficult it can be to implement PBIS, it has been shown that it can be implemented with high fidelity in as low as one year with proper training (Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008). This type of positive behavior intervention can help teachers and students by providing a sustainable model that promotes appropriate behavior.

Peer-Based Interventions

Unfortunately, teachers are not able to directly observe appropriate or inappropriate behaviors of all students at all times (Skinner, Neddenriep, Robinson, Ervin, & Jones, 2002). There will be times throughout the day when teachers are focused

on instruction or other student needs, and will inevitably miss opportunities to reinforce or punish behaviors of students. Peer-based interventions can be an attractive intervention for schools to implement since they make use of a relatively abundant resource (i.e., students), and place a comparatively lighter demand on scarcer resources (i.e., teachers) (Dufrene, Noell, Gilbertson, & Duhon, 2005).

Students have shown that they can effectively serve as academic peer tutors in a variety of settings. For example, Dufrene et al. (2005) found that 32 out of 37 elementary students in their study implemented peer tutoring procedures for math fluency with moderate to high fidelity, and the students who implemented the procedures poorly improved markedly after they were provided with performance feedback. Peer tutoring has also lead to increases in academic engagement and decreases in off-task behavior with students diagnosed with Attention Deficit Hyperactivity Disorder (DuPaul, Ervin, Hook, & McGoey, 1998). Menesses and Gresham (2009) found that even elementary students who are at-risk of academic failure could successfully tutor each other, and improve their math scores. High school students in remedial and special education classes have also been shown to be able to improve their peers' reading comprehension (Fuchs, Fuchs, & Kazdan, 1999).

It has also been found that students can effectively serve as behavior monitors of their peers. Goldstein, Kaczmarek, Pennington, and Shafer (1992) found that preschool aged children could improve rates of social interactions for a peer diagnosed with autism. Carden-Smith and Fowler (1984) looked to see if students in a remedial kindergarten class could successfully serve as mediators in a behavior management program. In this study, peer 'monitors' reminded fellow students about appropriate behaviors. The peer

monitors were also allowed to distribute tokens to students who were displaying appropriate behaviors. Results showed that the intervention reduced disruptive behaviors and increased the children's participation during transition activities. Similar results were found in elementary school students when dyads of students monitored received points based on appropriate behavior (Stern, Fowler, & Kohler, 1988). Jones, Young, and Friman (2000) also found that peers were able to increase prosocial behaviors of young teenagers who were socially rejected and delinquent. Carden-Smith and Fowler (1984) suggested that peers might have been influenced by positive peer pressure. In these studies, peers have shown that they can be a significant social influence on one another's behavior.

Tootling

Skinner, Skinner, and Cashwell (1998) first presented the idea of tootling. Tootling is a classwide intervention that has students report their peers' prosocial behavior. It receives its name since it is the opposite of tattling, and is a play on the saying "tooting your own horn" (Skinner et al., 2000, p. 265). In this study, students privately reported instances of their peers' prosocial behavior on index cards. The completed cards were placed in a marked container located in the classroom. The tootles were later read aloud to the students for feedback and praise.

Skinner et al. (2000) conducted the first peer-reviewed study on tootling. The purpose of the study was to see if students would increase their amount of tootling during intervention phases with an interdependent group contingency. The participants of the study included 15 females and 13 males in a general education fourth-grade classroom, and an A-B-A-B withdrawal design was used. Prior to starting the intervention, students

were trained to identify and report incidental instances of prosocial behavior. During the baseline phase, index cards for writing tootles were taped to the desk of each student, and a decorated shoebox was placed on the teacher's desk for students to place completed index cards in. Students were given verbal feedback on how many tootles were correctly produced, encouragement to continue writing tootles, and correct and incorrect examples based on the tootles that were submitted.

The intervention consisted of implementing an interdependent group contingency of reaching a certain number of tootles produced, which would lead to a reward for the whole class. During the first treatment phase, this included a classwide goal of reaching 100 tootles for a prize of an additional 30-minute recess. The goal was increased to 150 tootles for a prize of watching a movie in class for the second treatment phase. During the treatment phases, feedback of the amount of tootles produced was publicly posted on a large poster in the front of the classroom so the class was aware of how far they were from reaching their goal, and as a reminder to the students to record prosocial behavior of their peers.

The initial baseline and intervention phase produced highly variable data in the amount of tootles produced. However, the amount of tootles neared zero once baseline procedures were reintroduced. The data produced during the second intervention phase was variable again, but tootles increased to levels higher than in the first intervention phase, despite the variability. The authors noted that the principal of the school might have affected the internal validity of their study when he announced recess times might be decreased due to unreturned library books. Despite these possible limitations, this

study by Skinner et al. (2000) suggests that reports of peer prosocial behavior can be increased with a group contingency and public feedback.

Cashwell, Skinner, and Smith (2001) attempted to replicate the findings from Skinner et al. (2000) and extend them in a second-grade classroom. An A-B-A-B withdrawal design was used with 6 females and 11 males. Tootling procedures similar to Skinner et al. (2000) were implemented, including teaching students how to record a tootle correctly, and how to submit them. During baseline, the students were instructed to produce tootles, but no rewards or feedback was given. An interdependent group contingency was introduced during intervention phases that let the students earn prizes, such as extra recess time, and a class trip to a special playground. A large poster with the picture of a ladder was also publicly posted to indicate how many tootles had been cumulatively produced thus far.

Results from Cashwell et al. (2001) show that the number of tootles was variable across all phases. However, when the interdependent group contingency and public reporting were in effect during intervention phases, the level of tootles was higher than during baseline phases. Cashwell et al. (2001) suggest that the intervention may have only increased reports of peer prosocial behavior rather than increasing the actual behavior.

Cihak, Kirk, and Boon (2009) were the first to specifically investigate the effects of tootling in conjunction with a group contingency on decreasing disruptive behavior. There were 8 females and 11 males in a third-grade classroom participating in the study. The study took place in a classroom setting with 4 of the 19 students being identified as having a disability. Tootles were recorded and submitted similar to Skinner et al. (2000)

and Cashwell et al. (2001). The dependent measure was the number of disruptive behaviors, which included: talking out, being out of seat without the teacher's permission, and engaging in any motor behavior that interfered with another student's studying. The teacher used a paper bracelet with the initials of every student in the class to tally instances of disruptive behavior.

During the intervention phases, the teacher reviewed how to write tootles at the beginning of each day. At the end of each day, the teacher announced how many tootles had been submitted for that day, and then read them out loud. There was also a publicly posted poster that indicated how many tootles had been cumulatively submitted. An interdependent group contingency with a criterion of 75 tootles was put in place. A group reward, such as extra recess time, was awarded to the class once they reached 75 tootles. The tootling intervention phase terminated once disruptive behavior decreased by 50% compared to baseline data.

Using an A-B-A-B withdrawal design, a functional relationship was established between disruptive behavior and the introduction of the tootling intervention. During the initial baseline phase, the mean number of disruptive behaviors was 23.2. This decreased to a mean of 8.4 during the first intervention phase. Disruptive behaviors increased to a mean of 16 during the withdrawal phase, and then subsequently decreased to 3.5 during the reimplementation of the intervention. Although Cihak et al. (2009) were able to show a decrease in the number of disruptive behaviors, the researchers indicated that the results they obtained were with a tootling procedure combined with a group contingency, and that they were unable to attribute the decrease of disruptive behaviors solely to tootling.

In 2012, Sherman studied the effects of both tootling and Positive Peer Reporting (PPR) procedures on inappropriate and appropriately engaged behavior with elementary students. In the PPR procedure, students were encouraged to publicly report the positive behaviors of a peer specifically chosen as the "star of the class" (p. 2-3). Sherman examined the differential effectiveness of PPR alone and PPR in combination with tootling elements. The addition of tootling elements allowed students to report the star student's behaviors anonymously via index cards to be read aloud by the teacher, as opposed to public verbal statements in the PPR alone condition. Sherman's use of tootling was a variation of the original tootling procedures since it focused on the individual star student's behavior, rather than involving tootles for any student in the class. Four students were selected based on referrals by the principal for disruptive behavior and social difficulties. Each student was from a different general education elementary classroom, which ranged between third and sixth grade.

A multiple-baseline design across participants was used after the students were arranged into two dyads for data collection. Due to the use of both PPR and PPR plus Tootling, the sequence of intervention phases was counterbalanced across pairs of participants to control for order effects. For the PPR phase, the teacher told the class that a random student would be chosen to be the star of the class each day, and that they would be able to observe the student and publicly praise him or her for their appropriate behavior. The target students were intentionally chosen more frequently. At the end of the day, students were given a chance to give verbal praise statements about the star student. The students who gave praise statements would each earn a token, which could then be accumulated towards a class reward. The teacher provided examples of

acceptable praise statements, and gave feedback on the class' examples. During the PPR plus Tootling phase, students had the opportunity to praise the star of the class publicly during PPR at the end of the day, or privately by writing a tootle on a notecard. In this phase, praise statements in the forms of tootles also earned a token towards the class reward.

Disruptive and appropriately engaged behavior were defined through the use of the Problem Identification Interview (PII; Kratochwill & Bergan, 1990). Data collection for the targets students were recorded at times reported by the teacher to have high levels of disruptive behavior. Data were also collected during a different time to examine whether the effects of the intervention generalized to other settings.

Decreases in disruptive behavior and increases in appropriate behavior were obtained for the two target students in Dyad 1 following the introduction of PPR after the initial baseline. During the PPR plus Tootling phase, results were consistent with the PPR alone phase. In Dyad 2, Sherman obtained similar results to Dyad 1. Compared to baseline, there was a decrease in disruptive behavior, and an increase in appropriate behavior during the PPR with Tootling phase. This behavior remained at a similar level in the PPR alone phase. Overall, the results of Sherman's study indicate that PPR and PPR plus Tootling were equally effective at decreasing disruptive behavior, and increasing appropriate behaviors of the target students. The data gathered in the generalization setting also suggested that the intervention decreased disruptive behavior and increased appropriate behavior similar to the intervention setting.

Sherman discussed several limitations of the study despite the observed intervention effects. Data on the number of tootles written or read each day were not

collected. The number of tootles may have varied day to day since students may have written fewer tootles for some students compared to classmates. Students may have also found it easier to say things verbally during PPR than to write them down on notecards as tootles, resulting in differences due to response effort. Another problem occurred when teachers stated that several students were playing with the notecards intended for tootles during class instead of paying attention. To solve this problem, one teacher only allowed students to get a notecard when they intended to write a tootle, instead of placing notecards on each desk at the beginning of the class.

Lambert, Tingstrom, Sterling, Dufrene, and Lynne (2015) sought to replicate the study from Cihak et al. (2009), and extend it to include both disruptive and appropriate behaviors as dependent measures. Data on the dependent measures were collected by the primary investigator and trained observers, which is in contrast to the classroom teacher as in the Cihak et al. (2009) study. Participants included 17 students in a fourth-grade classroom, and 19 students in a fifth-grade classroom. An A-B-A-B design with a multiple baseline element and a follow-up phase across the two general education classrooms was used. Similar to Skinner et al. (2000), Cashwell et al. (2001), and Cihak et al. (2009), the study utilized a tootling procedure with an interdependent group contingency and publicly posted feedback on the number of tootles submitted. The students worked together to reach a collective class goal of an amount of tootles for a predetermined classwide reward, such as extra recess time. A whiteboard near the front of the classroom was used to mark the progress the class had made toward their tootling goal. The fourth-grade classroom started with a goal of 65 tootles, which was later

increased to 75, and then 85 tootles. In the fifth-grade classroom, the original goal was 65 tootles, which was then later increased to 100.

Results from the Lambert et al. (2015) study showed a decrease in disruptive behavior and an increase in appropriate behaviors during intervention phases. Both the fourth-grade and fifth-grade classrooms showed decreases in disruptive behavior and increases in appropriate behavior during the initial treatment phase, and upon the reintroduction. The follow-up session also showed low levels of disruptive behavior, and high levels of appropriate behavior compared to both baseline phases. Acceptability of the intervention was rated high by both classroom teachers. The author noted that treatment integrity for one of the teachers fell to 75% on two occasions, thus raising the question of an evaluation of the critical components of the intervention. Lambert et al. (2015) also suggested that the effects of tootling on student behavior should be explored with different age groups.

Lambert (2014) then conducted a study to examine the effects of tootling in an upper elementary and middle school setting, and on specific target students identified by classroom teachers. Similar to her 2012 study, Lambert's dependent variables consisted of disruptive and appropriate student behavior. These were measured using a 10 second momentary time sampling procedure by independent observers both classwide and for target students. The study was conducted in a sixth-grade classroom with 28 students (including four students with special education designations), another sixth-grade classroom with 28 students, and a seventh-grade classroom with 19 students. There was a target student in each of the above classrooms, which included an 11 year-old female, 12 year-old female, and 13 year-old male respectively. Tootling procedures remained similar

to the study by Lambert et al. (2015), and still included an interdependent group contingency and posted feedback of progress toward the class goal in each classroom.

With some minor exceptions, results from Lambert (2014) generally showed decreases in disruptive behavior and increases in appropriate behavior in all three classrooms during intervention phases compared to baseline and withdrawal phases. The study replicated the findings from Cihak et al. (2009) and Lambert et al. (2015), which demonstrated that tootling reduced classwide disruptive behavior. The results were also consistent with those of Lambert et al. (2015), which revealed that increases in classwide appropriate behavior were also found during intervention phases. Lambert (2014) obtained overall positive treatment effects for all three target students, but did note that there was some variability across all phases for disruptive and appropriate behavior for two of the target students. The participating classroom teachers, as well as the three target students, rated the tootling procedure as acceptable.

McHugh (2014) also sought to demonstrate the effectiveness of tootling in decreasing disruptive classroom behavior and increasing appropriate behavior classwide and for specific target students. In addition, McHugh also looked to extend the tootling research by giving reinforcement on a daily schedule. This was done by including a criterion for reinforcement that was a smaller number of tootles compared to previous tootling studies, which could feasibly be reached in one day instead of several days. A *thermometer* which indicated how many tootles had been submitted in each classroom was erased at the end of each day, and the class would start working anew towards the reinforcement criterion the following day.

Three lower elementary school classrooms were used in the study, along with a target student in each classroom. Classroom A was a third-grade general education classroom with 20 students. The target student in this classroom was an eight year-old female. Classroom B consisted of 21 students in a general education second-grade class, and had a seven year-old male target student. Finally, Classroom C was a third-grade general education classroom with 23 students, and had an eight year-old male as its target student. The goal daily goals for Classroom A, B and C were 30, 25 and 30 tootles, respectively. Similar to previous studies, McHugh included an interdependent group contingency and publicly posted feedback to increase the number of tootles in each classroom.

Results for McHugh (2014) demonstrated decreases in disruptive behaviors and increases in appropriate behaviors during tootling phases compared to the baseline and withdrawal phases for all classrooms. The results for each target student also showed decreases in disruptive behavior and increases in appropriate behavior, with decreases in the amount of variability as well. Ratings from the participating teachers suggested a high level of acceptability for the intervention. This study was able to replicate the positive effects of tootling from Cihak et al. (2009), Lambert et al. (2015), and Lambert (2014) while using a daily attainable goal with an interdependent group contingency. However, the more immediate and frequently accessed daily goals did not produce clearly superior results than previous studies using longer-ranges (e.g., one week goals).

High School Setting

High school teachers are susceptible to teacher burnout due to several factors including classroom climate and work overload (Byrne, 1994). There is a need for more

empirical research focused on improving classwide behavior with adolescents (Embry, 2002). This is despite the fact that a higher percentage of high school teachers (38.8%) rated student misbehavior as interfering with teaching compared to elementary teachers (32.6%; National Center for Education Statistics, 2008). LeBlanc, Swisher, and Trembley (2008) also found that teachers reported more classroom behavior problems in high schools where students reported more instances of antisocial behavior.

Research has found that antisocial behavior of individuals between the ages of 16 and 20 are affected primarily by socialization with peers (Monahan, Steinberg, & Cauffman, 2009). Many interventions focused on antisocial behavior are commonly tried in school, but referrals for students to go to counseling are the most popular intervention (Walker et al., 1996). Adolescents who are placed in peer groups specifically for group interventions, such as for antisocial behavior, have increased rates of negative behavior contrary to the purpose of the group intervention (Dishion, McCord, & Poulin, 1999). Tootling can provide an opportunity to focus on prosocial behavior, and decrease negative behavior without pulling out specific students for counseling or placing them in a separate treatment group with other antisocial students.

Using peer reporting of prosocial behaviors in a high school setting may be even more socially relevant to adolescents compared to younger students. One-third of individuals listed peer pressure as one of the hardest things they had to deal with in their teenage years (Brown, 1982). Peer pressure and peer group conformity have also been shown to be strong predictors of risky behavior in high school students (Santor, Messervey, & Kusumakar, 2000). Tootling may be able to structure peer influence in a positive manner since it has students look for prosocial behaviors of their peers. The

social power of peers in high school has the potential to make noticing prosocial behavior of peers even more salient during tootling procedures.

Adolescent students often have more sophisticated and complex needs compared to younger students, and may require more potent reinforcers to compete with other non-school related reinforcers, such as materialism and sexual activity (Jenson, 1978). Although there have been few studies that have looked specifically at a high school population for the use of group contingencies, it has been found that they can be effectively used to reduce problem classroom behavior along with randomized reinforcers (Theodore, Bray, & Kehle, 2004). The Good Behavior Game (GBG) is a classroom management procedure that utilizes an interdependent group contingency that allows groups or teams of students to earn rewards. The GBG has been found to be effective in high school settings for decreasing disruptive behaviors (Flower, McKenna, Muething, Bryant, & Bryant, 2014; Kleinman & Saigh, 2011; Mitchell, 2012, 2014), in addition to improving academic engagement (Mitchell, 2014). While tangible reinforcers can be used with high school students, free-time during class or extra credit may have a more universal appeal to all students in the class (Schanding & Sterling-Turner, 2010). A study by Christ and Christ (2006) also used free-time as reinforcement in a high school classroom with public feedback on an electronic scoreboard to decrease disruptive behavior, and increase active engagement. These studies show that reinforcers such as free-time and extra credit can be effective with older students. These types of reinforcers may generalize to most students since they can be seen as more practical and relevant. They are also relatively less expensive for the teacher or researchers compared to tangible

items, and produce less satiation, which can improve sustainability for long-term implementation.

High school students also face the possibility of dropping out of school. Behavioral problems have been found to be one of the top three risk factors that predicts student drop out (Suh & Suh, 2007). On the other hand, increased peer support has been found to lead to a greater sense of school membership in high school (Isakson & Jarvis, 1999). Tootling can provide opportunities for students to be recognized and supported by their peers for engaging in appropriate behavior.

Purpose of the Present Study

The present study evaluated the effects of tootling with an interdependent group contingency and public feedback posting in a general education high school setting on decreasing disruptive behavior and increasing academic engagement. Tootling has been investigated in elementary classroom settings, and has been found to increase peer reports of prosocial behavior (Cashwell et al., 2001; Skinner et al., 2000), decrease disruptive student behaviors (Cihak et al., 2009; Lambert, 2014; Lambert et al., 2015; McHugh, 2014), and increase appropriate student behaviors as well (Lambert, 2014; Lambert et al., 2015; McHugh, 2014). Further research needs to be conducted to replicate and extend these findings, especially in terms of decreasing negative classroom behavior and increasing appropriate behavior since only a few studies (Lambert, 2014; Lambert et al., 2015; McHugh, 2014) have investigated these variables with tootling thus far, none of which have been conducted with high school students.

A study examining the effects of tootling in an older age group is also needed. There are many changes as students enter high school, including their perception of social

support, stress, and school membership (Isakson & Jarvis, 1999). Most high school students with behavioral problems have academic difficulties as well (McIntosh, Flannery, Sugai, Braun, & Cochrane, 2008). Teachers in high school need an intervention that can be used effectively with students in a classwide format, either alone or in combination with other PBIS procedures at a Tier I or Tier II level. Tootling is an intervention that can provide teachers a way of recognizing positive prosocial elements of students, and function as a preventative measure against negative student behavior. Although tootling has not been studied previously in a high school setting, other elementary classwide interventions have been adapted successfully for use with older students (e.g., the GBG by Flower et al., 2014; Kleinmen & Saigh, 2011; Mitchell, 2012, 2014; and Mystery Motivators by Schanding & Sterling-Turner, 2010). While a high school setting may pose problems for instituting behavioral interventions (Jenson, 1978), using practical, relevant reinforcers, and framing the intervention around the social and peer aspects of school give tootling the potential to be similarly effective with a teenage population. Applying tootling with an adolescent age group with these guidelines may help high school teachers comparably to their elementary counterparts. The following research questions were investigated:

1. Will a tootling procedure decrease classwide disruptive behaviors in a high school general education classroom setting?
2. Will a tootling procedure increase classwide academically engaged behavior in a high school general education classroom setting?
3. Will a tootling procedure be rated as socially valid by teachers in a high school general education classroom setting?

CHAPTER II

METHOD

Participants and Setting

Three general education classes from a high school in a southeastern state were selected for this study. The high school had approximately 590 students enrolled during the time of the study, with 68% being on a free or reduced lunch program. The high school was located in a rural setting, and serves as the only school in its school district. In its past, the high school offered specialized agricultural programs with on-campus dormitories, however, it now functions as a public high school that only offers select agricultural courses as electives, and does not house any students. The three participating classrooms were recruited based on referrals from school administrators for classrooms displaying high levels of disruptive behavior. Similar to Lambert et al. (2015), only classrooms exhibiting disruptive behaviors of 30% of intervals or more during initial screening observations qualified for the study. All three classrooms met this screening criterion by exhibiting disruptive behavior for at least 30% of observed intervals during at least one of three initial screening observations.

Permission to conduct the study was obtained from the school district superintendent's office and school principal. All procedures were approved by the university Institutional Review Board (see Appendix A). Informed consent was obtained from each of the participating teachers (see Appendix B). Basic demographics were obtained for each teacher (e.g., gender and number of years of experience) and the students in their class (see Appendix C). The high school used a semester-based system with a block schedule for courses, and had four 95 minute blocks within one school day.

Classroom A was an English Literature course during the school's 3rd block, and was comprised of 29 students (15 females) in the ninth (1 student) and tenth (28) grades. The class consisted of 18 Caucasian, and 11 African American students. Four students received special education services under the category of Specific Learning Disability (SLD), and one under Other Health Impairment (OHI). The teacher for Classroom A was a 22-year-old Caucasian female in her first year of teaching. All observations were conducted after students returned from their lunch break, which was in the middle of the class period.

Classroom B was a Geometry course during 4th block, which consisted of 22 students (17 females) from the ninth (1), tenth (16), eleventh (4), and twelfth (1) grade. Fifteen of the students were Caucasian, and seven were African American. Two students received special education services under the category of OHI, two under SLD, and one under Autism. Classroom B was taught by a 30-year-old Caucasian male in his first year of teaching. All observations took place at the start of the class period.

Classroom C was a Physical Science course during 3rd block with 26 students (13 females) in the tenth (9), eleventh (15), and twelfth (2) grade. The class was comprised of 17 Caucasian students, and nine African American students. Two students received special education services under the category of SLD, and one under OHI. The teacher for Classroom C was a 23-year-old Caucasian female in her second year of teaching. All observations in Classroom C occurred during the last 20 minutes of the class period.

Materials

A script for the student tootling training session was provided to the teacher (see Appendix D). Students were also given printed slips of paper specifically created for

them to write down their ‘tootles’ (see Appendix E). A decorated container (i.e., a plastic container with a flip lid, approximately 18 cm x 15 cm x 5 cm with gift bows attached) was positioned on the teacher’s desk or a side table for the students to place their tootles in once they had been recorded on a paper slip. Daily feedback of the class’ progress of tootles submitted towards the predetermined class goal was displayed and clearly visible on a poster or whiteboard in the classroom. A list of possible rewards was first chosen by consulting with classroom teachers. Students then voted from this list to determine appropriate items with a high reinforcement value. Rewards chosen included free homework passes, bonus points for tests, watching a movie, and edibles (e.g., cookies, chips, and doughnuts).

Following the completion of this study, the teachers were asked to complete the Behavior Intervention Rating Scale (BIRS; Von Brock & Elliott, 1987; see Appendix F) to assess their perceptions of acceptability and utility of the intervention. The BIRS consists of 24 items, which are rated on a 6-point Likert scale. The rankings range from strongly disagree (1) to strongly agree (6). The BIRS includes the same 15 items from the Intervention Rating Profile-15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985), but contains an additional 9 items that allow it to measure three factors: Acceptability, Effectiveness, and Time of Effect (Von Brock & Elliott, 1987). High scores on the BIRS indicate high levels of satisfaction of the intervention. Technical evaluations of the BIRS have found high internal consistency ($\alpha = .97$), as well as good content and construct validity (Elliott & Von Brock Treuting, 1991). Making modifications to the tense and wording of items have been reported to not significantly alter the psychometric properties of the IRP-15 (Freer & Watson, 1999), nor the BIRS (Sheridan & Steck, 1995; Sheridan,

Eagle, Cowan, & Mickelson, 2001). This study made modifications to the BIRS including using past tense wording, and substituting the word "intervention" with "tootling."

Dependent Measures

The primary dependent variable assessed in this study was disruptive student behavior. It was also used to determine when phase changes would occur. Disruptive behaviors were defined based on the classroom teacher's specific concerns. A modified PII (see Appendix G; Kratochwill & Bergan, 1990) was conducted to determine the three most frequent disruptive behaviors in the class according to each teacher. All three classroom teachers chose inappropriate vocalizations, being out of seat, and playing with objects as the most frequent disruptive behaviors in their class. Inappropriate vocalizations were defined as any verbalization made by a student without the prior permission of the teacher. Playing with objects was defined as manipulation of any item not related to the task presented by the teacher. Out-of-seat behavior was defined as when the student's bottom broke contact with their seat without prior permission from the teacher (an exception was made if they were in the process of submitting a tootle). Although the PII has had no reports of its psychometric properties, it has been cited as a commonly used instrument in behavioral consultation (Zuckerman, 2005).

A second dependent measure of student academically engaged behavior (AEB) was also collected. AEB included both passive and active engagement, and was operationally defined as: "the student being actively involved or attending to (e.g., looking at) independent seatwork, teacher instruction, designated classroom activities,

and/or engaging in task related vocalizations with teachers and/or peers" (Lambert et al., 2015, p. 419).

Data Collection

Data were collected in the classroom from an unobtrusive location, such as the back of the room, by the primary investigator and trained observers in each of the three participating classes. A 20 minute observation was used to measure the dependent variables with a 10-second momentary time sampling recording procedure. Two exceptions of this occurred during the eighth and ninth observation sessions of Classroom C, where observations were only 18 minutes in length due to an early class dismissal. The momentary time sampling procedure has been found to have greater representativeness and fewer observer errors compared to partial and whole interval recording (Green, McCoy, Burns, & Smith, 1982; Radley, O'Handley, & LaBrot, 2015). All observers were cued for each 10-second interval by using an audio recording. At the beginning of each 10-second interval, one student was momentarily observed and recorded as either engaging in disruptive behavior, academic engagement, or neither (see Appendix H). At the start of each new interval, a different student was observed. The rotation order was fixed based on the student seating chart in each classroom. Once all students in the class had been observed, the observers restarted and rotated through each student again. This process was repeated until all intervals in the 20 minute observation had been recorded. Data were reported as percentage of intervals of occurrence. This was calculated by dividing the total number of intervals of occurrence by the total number of intervals in the observation, and multiplying by 100. The percentages of disruptive behavior and academic engagement were calculated individually, and reported separately. The same

data collection procedures were used during screening, baseline, treatment, withdrawal, and follow-up observations.

Design

An A-B-A-B withdrawal design with follow-up was used in three high school classrooms to determine the effectiveness of the intervention for decreasing disruptive behaviors, and increasing AEB. The A-B-A-B withdrawal allowed for experimental demonstrations of treatment effects through prediction, verification, and replication (Hayes, Barlow, & Nelson-Gray, 1999). In this design, strong evidence that the independent variable is responsible for behavior change is shown if repetition of baseline and treatment phases is approximated in the withdrawal and treatment reimplementation phases. Follow-up observations were also conducted two weeks after conclusion of the final intervention phase in Classroom B, and one week later in Classrooms A and C (due to proximity to the end of the school semester).

Visual analysis of level, trend, and variability around the level and trend of disruptive behavior determined when phase changes occurred. At least five observations were conducted for each phase since it has been suggested that a minimum of five data points be collected, except when dealing with ethical or practical concerns, to allow more confidence in the reliability of the data (Kratochwill et al., 2010). One exception to this was made during the follow-up phase of Classroom C, in which only two data points were able to be collected before the school semester ended. Once stability or an increasing trend had been observed for disruptive behavior during the initial baseline, the classroom moved into the intervention phase. Data were collected in the withdrawal phase until disruptive behavior was stable or an increasing trend was observed.

Procedures

Screening. Prior to screening, each teacher was interviewed using a modified PII (Appendix G; Kratochwill & Bergan, 1990) to determine the three most frequent disruptive behaviors in their class. These disruptive behaviors were then used to create the three target behaviors that were used during observations. All referred classrooms were subject to screening observations in order to qualify for participation in the study. Teachers were asked to manage their classroom in their typical manner. Participating classrooms meet a criterion of at least 30% of observed intervals of classwide disruptive behavior in at least one of three initial observations. Lambert et al. (2015) used this criterion because potential observed effects from the intervention would still be visible below 30%, thus allowing for the prevention of floor effects. Levels of 30% classwide disruptive behavior may also be high enough to distract students and teachers from instruction. Screening observations were also included as part of the baseline observations.

Baseline. Baseline data for students' disruptive behavior and AEB were collected prior to the initiation of the training or tootling procedures for at least five sessions. Similar to the screening observations, teachers were instructed to continue their normal classroom routines and behavior management techniques during the baseline phase.

Introduction and Training. A script, adapted from Lambert et al. (2015), which outlined specifically how to train the students on the tootling procedures, was provided for each classroom teacher (Appendix D). The primary investigator read the script with each teacher before they used it for the student trainings to ensure they understood each step of the script, and to answer any preliminary questions. The student trainings

occurred after the baseline phase had been completed, but before the implementation of the tootling intervention. The training was designed to teach students how to observe and record their peers' appropriate prosocial behaviors during class time. In an attempt to make the tootling intervention sound more appropriate for an adolescent population, the teacher began by calling the procedure *positive comments*. In another attempt to make the intervention sound more appealing, the intervention was first described as a *competition* to see if the class could make enough positive comments to receive a reward. This is similar to how Kleinman and Saigh (2011) and Mitchell (2012, 2014) introduced the GBG as a competition in high school classrooms.

The script included examples of appropriate and inappropriate positive comments. A correct positive comment was if the student wrote an instance of a prosocial behavior exhibited by another student on the paper slip. For example, "Nick helped Matt hand in his worksheet" or "Kate raised her hand to give an answer." An incorrect positive comment occurred if the student failed to specify the name of the student that the comment was written about or if the student gave an example that was not an instance of prosocial behavior (Lambert et al., 2015). After being given several examples, the students were then asked to provide the teacher with their own positive comments. The teacher read aloud all submitted examples, and gave corrective feedback to ensure that students had a sufficient understanding of the tootling procedure.

The teacher then took an anonymous vote on what the intervention should be named. Students were able to vote on provided examples of Brags, Compliments, Hollas, Kudos, Positive Comments, Shout Outs, or Tootles, in addition to an option where students could make suggestions of their own. The intervention was named after an

option received the most student votes. Classroom A voted to call the intervention "TBHs (To Be Honests)," Classroom B voted for "Shout Outs," while Classroom C voted for "TBRz (To Be Realz)" since the teacher also included the option of "TBHs" after hearing about Classroom A's decision.

Tootling. The implementation of training procedures and tootling procedures began after baseline stability and/or an increasing trend in disruptive behavior was observed in each classroom, and lasted for at least five sessions. At the beginning of the class period each day, teachers distributed a slip of paper to students, which were designed and printed specifically for recording tootles (Appendix E). Students were instructed and encouraged to record any appropriate behavior of their peers observed throughout the period. Students were also reminded that they should write one tootle on the slip of paper, place it in the tootle collection container, and then retrieve a new slip of paper from a stack next to the box.

Tootling was combined with public posting and an interdependent group contingency procedure in which a specific goal was determined by the primary investigator and the classroom teacher, similar to previous tootling studies (Cashwell et al., 2001; Cihak et al., 2009; Lambert, 2014; Lambert et al., 2015; McHugh, 2014; Skinner et al., 2000). The class, as a unified group, needed to reach this goal in order to obtain the predetermined group reinforcer. An appropriate group reinforcer was chosen each time a new goal was specified.

At the end of each class period, the classroom teacher randomly chose five of the students' tootles, or more if time permitted, and read them aloud to give additional acknowledgment and praise to the students for their appropriate behaviors listed on the

tootles. If any of the randomly selected tootles were incorrect (i.e., not about a specific positive behavior), the teacher verbally announced it to the class, and stated why it was incorrect. The teacher ignored and did not make any mention of a submitted tootle if they thought it was inappropriate (e.g., contained inappropriate language, was a joke, or derogatory). The teacher then added the number of correctly submitted tootles from that day to any previous tootles the class has accumulated thus far, and marked the students' progress toward the cumulative goal on a chart or whiteboard located on one of the classroom's walls.

Each classroom teacher decided their own class' goal for submitted tootles. It ranged between 40 to 85 tootles throughout the study. Less desirable rewards were offset by lower goals (e.g., five bonus points on an upcoming test were set at a goal of 40 tootles), while more desirable rewards required a higher total of submitted tootles (e.g., a class movie day required 85 tootles). The time to reach the class goal varied over the course of the study, with some goals only taking three days to reach, while other goals took two weeks to achieve.

Withdrawal. Following the first intervention phase, the tootling procedures and interdependent group contingency was withdrawn for a minimum of five sessions. The classroom teacher was instructed to remove all intervention materials, and to tell the students that the class was not doing the intervention at this time if asked. As in the baseline condition, the observers recorded any instances of disruptive behavior and AEB that occurred during observations.

Reimplementation of Tootling. After the withdrawal phase, the tootling procedure was reimplemented, as in the initial intervention phase. Data were collected for a

minimum of five sessions to analyze level, trend, and variability of the data and to determine if treatment effects were present.

Follow-Up. Following the conclusion of the intervention phase in each classroom, teachers were informed that observers would return for follow-up observations in the upcoming weeks. Similar to Lambert et al. (2015), teachers were told that during these observations, they were able choose whether to keep the intervention in place or to discontinue using it.

Interobserver Agreement

Interobserver agreement (IOA) was measured between the primary investigator and a trained observer for a minimum of 33% of observations for each phase in each classroom (42% of total probes). As in Lambert et al. (2015), IOA was calculated separately for disruptive and AEB, and reported as total agreement of occurrence and nonoccurrence of behavior. The total number of agreements were divided by the total number of agreements and disagreements, and then multiplied by 100.

Observers were trained by having the observation procedures explained to them, along with operational definitions of the target behaviors. Observers were graduate students in a doctoral school psychology program who had already attained a 90% IOA criterion in a previous training session. During data collection, observers maintained at least 90% agreement when simultaneously and independently collecting data with the primary investigator. Secondary observers were retrained on the procedures and operational definitions before collecting any further data if they did not maintain this 90% agreement threshold for either disruptive behavior or AEB. Retraining occurred on six occasions for Classroom A, twice for Classroom B, and four times for Classroom C.

IOA for Classroom A was conducted for 40% of baseline observations, 33% of observations in the initial tootling phase, 38% of withdrawal observations, 50% of observations during the re-implementation of tootling phase, and 40% of observations during the 1 week follow-up phase. IOA for disruptive behavior in Classroom A averaged 90% (range = 81-97%) across all phases, AEB averaged 89% (range = 83-97%) across all phases, and total IOA for both disruptive and AEB averaged 89% (range = 82-97%) across all phases.

Classroom B's IOA was obtained for 80% of observations in baseline, 33% of observations in the initial Tootling phase, 33% of observations in the withdrawal phase, 33% of observations during the re-introduction of tootling, and 40% of observations in the 2 week follow-up phase. IOA for disruptive behavior in Classroom B averaged 94% (range = 88-100%) across all phases, AEB averaged 94% (range = 88-97%) across all phases, and total IOA for both disruptive and AEB averaged 94% (range = 89-98%) across all phases.

For Classroom C, IOA was obtained for 40% of observations during the baseline phase, 33% of observations during the initial tootling phase, 50% of observations in the withdrawal phase, 40% of observations during the re-implementation of the intervention, and 50% of observations during the 1 week follow-up. IOA for disruptive behavior in Classroom C averaged 92% (range = 83-95%) across all phases, AEB averaged 91% (range = 82-96%) across all phases, and total IOA for both disruptive and AEB averaged 91% (range = 83-95%) across all phases.

Kappa

The Kappa coefficient was also calculated for both disruptive and AEB using the formula provided by Uebersax (1982). The Kappa coefficient is a statistical measure that determines the proportion of agreement between raters when agreement by chance is accounted for. When interpreting Kappa, values between 0.81 and 0.99 represent *almost perfect* agreement, values between .61 and .80 signify *substantial* agreement, values between .41 and .60 are considered *moderate* agreement, values between .21 and .40 reflect *fair* agreement, values between .01 and .20 suggest *slight* agreement, and values below 0 indicate less than chance agreement (Viera & Garrett, 2005).

For Classroom A, the mean Kappa value was 0.76 (95% CI = 0.66–0.87), suggesting substantial agreement between observers across both disruptive and AEB. Kappa values for Classroom B averaged 0.86 (95% CI = 0.77–0.94), suggesting almost perfect agreement between observers in Classroom B. Mean Kappa for Classroom C was 0.80 (95% CI = 0.71–0.90) indicating substantial agreement between observers in Classroom C.

Procedural Integrity

Procedural integrity data were assessed for the classroom teacher's implementation of the student tootling training procedures. First, an integrity checklist was used to monitor if the primary investigator properly trained the classroom teacher to conduct the tootling training for students (see Appendix I; Lynne, 2015). Integrity was found to be 100% during all three training sessions with teachers. Additionally, IOA data were obtained by a secondary observer for 33% (one of three) of the training sessions with teachers, and was 100%.

The primary investigator also completed a training integrity checklist on the first session of the first intervention phase to determine whether the teacher implemented the necessary steps required to train the students how to tootle (see Appendix J; Lambert et al., 2015). All three teachers implemented the steps with 100% integrity. IOA data were also obtained for 33% (one of three) of the student training sessions by a secondary observer, and was 100%.

Treatment Integrity

Treatment integrity was evaluated via a checklist similar to the Lambert et al. (2015) study, which contained a list of the steps required for proper implementation of the tootling intervention by the classroom teachers (see Appendix K). The teacher was asked to complete a treatment integrity checklist each day during the intervention phases since the primary investigator was not able to observe all aspects of the intervention throughout the class period each day.

Treatment integrity, as rated by the classroom teacher for Classroom A averaged 82% (range = 60-100%) of steps completed daily. Treatment integrity for Classroom B was consistently rated at 100%. For Classroom C, treatment integrity averaged 90% (range = 60%-100%) of steps completed.

The observers also measured integrity by completing a checklist during observations. This assessed for the presence of necessary intervention materials in the room, such as: having the feedback chart displayed in a visible area of the room and updated from the previous day's total; having the collection container in an accessible place for students; and whether the students had tootling paper slips on their desks (see Appendix L; Lambert et al., 2015). The classroom teacher was contacted and reminded of

any missed intervention procedures before the next observation session if the primary observer noticed any missed step after conducting a treatment integrity check.

Treatment integrity as rated by the observers averaged 81% (range = 50-100%) of steps completed for Classroom A. Classroom B was rated at 100% for all intervention observations. For Classroom C, an average of 98% (range = 75-100%) of steps were rated as being completed. IOA for treatment integrity was collected by a secondary observer for at least 33% of observations during each intervention and re-implementation phase (37% of all observations in these phases). Treatment integrity IOA was calculated as number of agreements of steps completed divided by the number of total steps. Treatment integrity IOA was 100% between observers across all observations in all participating classrooms.

Treatment integrity was also collected on the first observation session during the withdrawal phase to ensure intervention procedures were not in place (see Appendix M) by the primary observer. The three steps included were: ensuring the feedback chart was not visible in the classroom; paper slips were not visible on the students' desks; and tootling collection container was not visible. The withdrawal phase treatment integrity checks were completed at 100% in all three classrooms.

During the follow-up phase, the same treatment integrity form used during intervention phases (Appendix L) was used. Despite each participating teacher verbally reporting that they were not using the intervention during follow-up, Classroom A still scored 50% on treatment integrity ratings during the first two sessions of follow-up due to having the feedback chart still drawn on the whiteboard (it had not updated since the last session of the previous intervention phase), and for having the tootling container still

visible on a side table (although it always empty each time observers were present). For the next three sessions of follow-up, Classroom A scored 25% on treatment integrity as the feedback chart was finally erased, but the tootling container was still present.

Data Analysis

For each classroom, a visual analysis of graphic data was used to evaluate level, trend, and variability in the data to determine if there were treatment effects. Additionally, two effect size calculations, Nonoverlap of All Pairs (NAP; Parker & Vannest, 2009) and Tau-U (Parker, Vannest, Davis, & Sauber, 2011), were used to evaluate treatment effects.

Parker and Vannest (2009) introduced NAP as an index of data overlap between phases, and found it to be strongly correlated with the established effect size index of R^2, and to have good discriminability of effects. NAP scores between 0.00 and 0.65 are considered weak effects, scores between 0.66 and 0.92 are interpreted as moderate effects, and scores from 0.93 to 1.00 are considered strong effects (Parker & Vannest, 2009). Parker et al. (2011) proposed Tau-U, which combines nonoverlap between phases with trend from within the intervention phase, and is generally a more conservative effect size calculation compared to NAP. Tau-U score distributions do not show artificial ceilings, and can offer a more complete index of change between phases compared to other commonly used non-overlap measures, such as NAP (Parker et al., 2011). Score ranges for weak, moderate, and strong effect sizes for Tau-U were judged correspondingly to NAP since they are derived from the similar calculations, however, there are no published guidelines specifically indicating this practice. Since a within-series design was be used, each classroom was evaluated on its own.

For each classroom, the baseline phase was compared to the first intervention phase, and the withdrawal phase was compared to the second intervention phase. Afterwards, a combined weighted average of the two was also calculated. In order to calculate both NAP and Tau-U scores for disruptive behavior, the intervention phase data was switched with the baseline or withdrawal phase data it was being compared with due to the intended decrease in levels of behavior during intervention. In addition, for Tau-U, each initial phase (i.e., baseline and withdrawal phases for AEB, and intervention phases for disruptive behavior) was tested for a significant trend. The trend was then corrected during Tau-U calculations if the trend level was above 0.4. This trend correction took place twice: once for Classroom C's first intervention phase for disruptive behavior calculations, and again for Classroom C's second intervention phase for AEB calculations.

CHAPTER III

RESULTS

Classroom Data

Classroom A

Students in Classroom A (Figure 1, top panel) demonstrated disruptive behavior for a mean of 35% of observed intervals (range = 27-42%) across baseline observations, with an overall increasing trend. When tootling was introduced, a decreasing trend was observed in Classroom A, which resulted in a mean average of 23% (range = 18-32%) for disruptive behavior. Upon removal of the intervention in the withdrawal phase, disruptive behavior increased to near baseline levels with a mean of 32% (range = 24%-39%) of intervals with some variability during the middle portion of the phase. When tootling was re-implemented, mean levels of disruptive behavior decreased to 23% (range = 17-26%). During the 1 week follow-up phase, Classroom A's teacher was not using the intervention. Levels of disruptive behavior were similar to baseline and withdrawal (M = 34%; range = 28-48%). Table 1 presents the effect size calculations between phases (excluding follow-up). Overall, the intervention in Classroom A had a moderate effect decreasing disruptive behavior according to both weighted NAP and Tau-U calculations.

Table 1

Effect Size Calculations for Classroom A

	NAP	Effect	Tau-U	Effect
Disruptive Behavior				
Baseline/Initial Tootling	.93	Strong	.87	Moderate
Withdrawal/Reimplementation	.92	Moderate	.83	Moderate
Weighted Average	.92	Moderate	.85	Moderate

Table 1 (continued).

	NAP	Effect	Tau-U	Effect
Academically Engaged Behavior				
Baseline/Initial Tootling	.82	Moderate	.63	Weak
Withdrawal/Reimplementation	.91	Moderate	.81	Moderate
Weighted Average	.86	Moderate	.73	Moderate

AEB data in Classroom A had a slight increasing, then slight decreasing trend during baseline with a mean of 53% (range = 48-58%) of observed intervals. The introduction of the intervention produced a stable level of AEB with a mean of 58% (range = 54-61%) of intervals. During the withdrawal phase, mean level of AEB decreased slightly to a mean of 55% (range = 48-61%). The re-implementation of tootling saw mean levels of AEB average 64% (range = 56-69%) with a slight increasing trend. During the 1 week follow-up phase without tootling procedures in place, AEB fell back to an average of 53% (range = 39-62%). Table 1 also lists the effect sizes for AEB using NAP and Tau-U calculations, both of which indicate tootling had an overall moderate effect for AEB in Classroom A.

Classroom B

Classroom B (Figure 1, middle panel) exhibited disruptive behavior for an average of 31% of observed intervals during baseline sessions (range = 19-39%), and displayed an increasing trend. During the first intervention phase, there was a decreasing trend along with a mean of 16% (range = 9-25%). The withdrawal phase produced an increasing trend in disruptive behavior with a mean of 26% (range = 16–36%). The re-implementation of tootling in Classroom B saw disruptive behavior levels fall to a level similar to the baseline phase (M = 16%; range = 12-24%). The teacher in Classroom B was not implementing the intervention during the 2 week follow-up phase. In this phase,

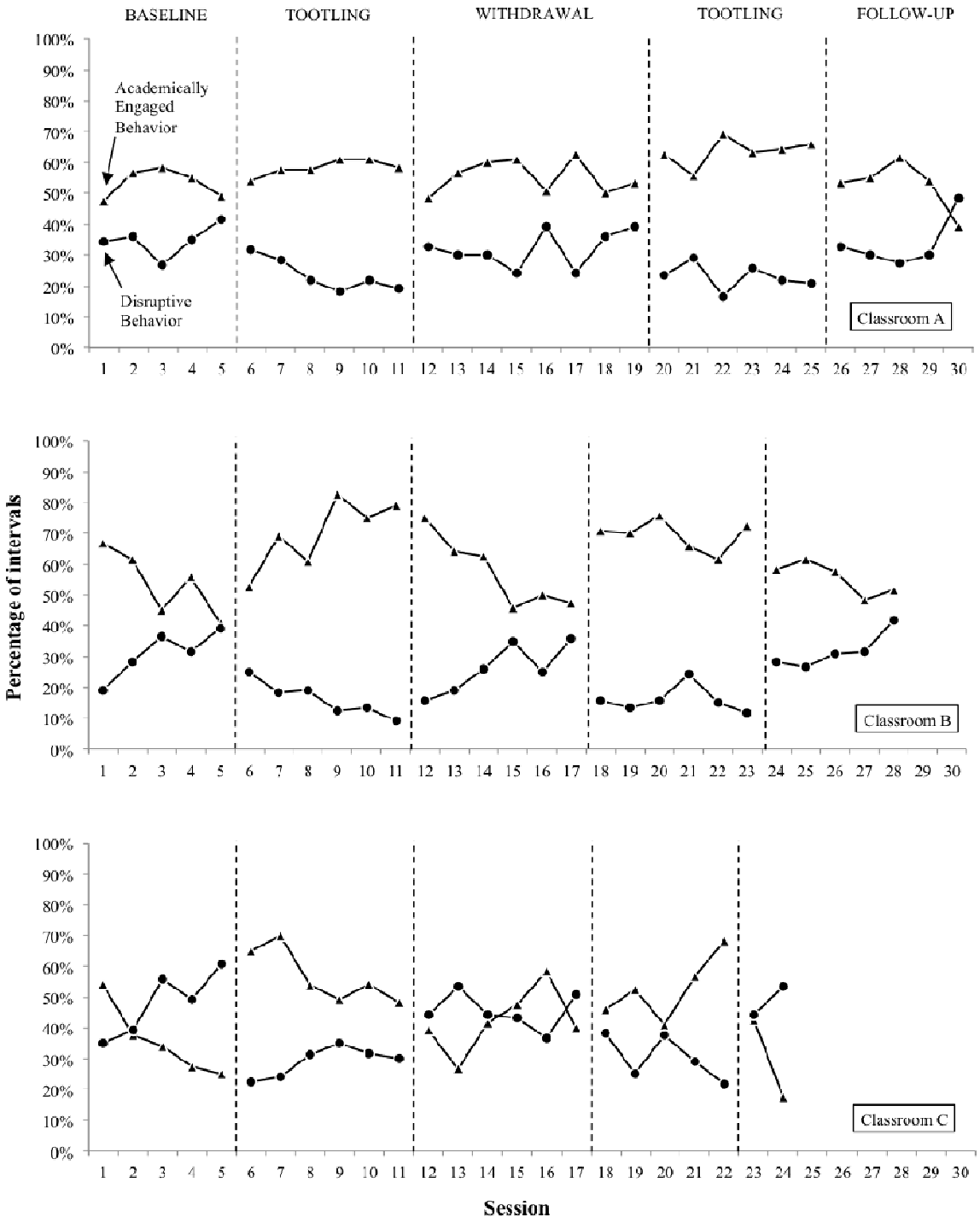

Figure 1. Percentage of intervals of occurrence for disruptive and appropriate behaviors for Classroom A (top panel), Classroom B (middle panel), and Classroom C (bottom panel).

disruptive behavior had an increasing trend with a mean of 32% (range = 27–42%). Effect size calculations for Classroom B are listed in Table 2. Overall, the intervention in Classroom B had a strong effect for disruptive behavior according to NAP calculations, and a moderate effect when using Tau-U calculations.

Table 2

Effect Size Calculations for Classroom B

	NAP	Effect	Tau-U	Effect
Disruptive Behavior				
Baseline/Initial Tootling	.95	Strong	.90	Moderate
Withdrawal/Reimplementation	.92	Moderate	.94	Strong
Weighted Average	.93	Strong	.92	Moderate
Academically Engaged Behavior				
Baseline/Initial Tootling	.83	Moderate	.67	Moderate
Withdrawal/Reimplementation	.81	Moderate	.61	Weak
Weighted Average	.82	Moderate	.64	Weak

AEB for Classroom B displayed a decreasing trend (M = 54%; range = 41-67%) during the baseline phase. An increasing trend was then found during the first intervention phase with a mean of 70% for AEB and a range between 53% and 83%. AEB then decreased during the withdrawal phase similar to baseline levels, averaging 58% (range = 46-75%). During the second implementation of the intervention, AEB increased and remained relatively stable with a range between 62-73% (M = 69%). AEB then decreased again to near baseline and withdrawal levels (M = 56%, range = 48-62%) during the 2 week follow-up phase. Overall weighted effect sizes for AEB were in the moderate range for NAP, and weak for Tau-U calculations.

Classroom C

Classroom C's disruptive behavior was slightly variable during baseline with an increasing trend, and a mean of 48% during observed intervals (range = 35-61%).

Disruptive behavior then decreased immediately upon the start of tootling to a mean of 29% (range = 23-35%). During the withdrawal phase, disruptive behavior was slightly variable, and increased to a mean of 45% (range = 37-53%). Upon the reimplementation of the intervention, disruptive behavior averaged 30% (range = 22-38%) of observed intervals. Classroom C was not participating in the tootling intervention during the 1 week follow-up, which saw only two data points at 44% and 55%, respectively, for observed intervals of disruptive behavior. Classroom C's overall effect size (Table 3) calculations for disruptive behavior indicate strong effects from the tootling intervention based on NAP, and moderate effects based on Tau-U.

Table 3

Effect Size Calculations for Classroom C

	NAP	Effect	Tau-U	Effect
Disruptive Behavior				
Baseline/Initial Tootling	.97	Strong	.70	Moderate
Withdrawal/Reimplementation	.93	Strong	.87	Moderate
Weighted Average	.95	Strong	.78	Moderate
Academically Engaged Behavior				
Baseline/Initial Tootling	.88	Moderate	.77	Moderate
Withdrawal/Reimplementation	.77	Moderate	.30	Weak
Weighted Average	.83	Moderate	.53	Weak

Baseline results for AEB in Classroom C showed a decreasing trend. In this phase, there was a mean of 37% with a range of 25-54% during observed intervals for AEB. During the first intervention phase, AEB immediately increased, but showed an initial decreasing trend, until stabilizing during the last half of the phase. This phase had a mean of 58% for AEB during observed intervals with a range between 48% and 70%. The withdrawal phase resulted in variable data for AEB, with a range of 27-58% (M =

42%). The re-implementation of tootling in Classroom C had a mean of 53% (range = 41-63%) during observed intervals for AEB, and the phase ended with an increasing trend. Finally, during the 1 week follow-up phase, AEB was observed during 43% and 18% of intervals during the first and second observation, respectively. Effect size calculations indicate moderate effects on AEB from NAP calculations, and weak effects from Tau-U calculations.

Social Validity

At the conclusion of the study, teachers completed the BIRS (Elliott & Von Brock Treuting, 1991) to assess the social validity of the tootling intervention in their classroom. Possible BIRS scores ranged from 1 to 6, with higher scores indicating a greater level of intervention acceptability. Results of the BIRS indicated moderate to high levels of social validity of the intervention, and across its three individual factors of Acceptability, Effectiveness, and Time of Effect (see Table 4), with the only exception being Classroom A's score for Effectiveness. Responses from Classroom A's teacher garnered an overall mean of 4.08 per item. The overall mean per item from Classroom B's teacher was 5.58. Finally, Classroom C's teacher endorsed an overall mean of 5.08 per item.

Table 4

Teacher Ratings on the Behavior Intervention Rating Scale

	Classroom		
Factor	A	B	C
Acceptability	4.33	5.80	5.47
Effectiveness	3.43	5.00	4.43
Time of Effect	4.50	6.00	4.50
Overall Mean (Social Validity)	4.08	5.58	5.08

CHAPTER IV

DISCUSSION

Research Questions

Research Question 1

The first research question asked was if a tootling procedure would decrease classwide disruptive behaviors in a high school general education classroom setting. Results indicated decreases in disruptive classwide behavior during intervention phases compared to baseline, withdrawal, and follow-up phases in all three participating classrooms. This is in line with previous tootling studies looking at effects on disruptive behavior (Cihak et al., 2009; Lambert, 2014; Lambert et al., 2015; McHugh, 2014) and extends the research to a high school setting. NAP and Tau-U effect size scores ranged from moderate to strong for disruptive behavior when intervention phases were compared to previous non-intervention phases (i.e., baseline or withdrawal). Lambert et al. (2015) and McHugh (2014) are the only tootling studies that have previously used effect size calculations, and they both also found moderate to strong NAP scores. However, the current study is the only one to utilize Tau-U calculations.

Research Question 2

The aim for the second research question was to determine if a tootling procedure would increase classwide AEB in a high school general education classroom setting. The results from all three classrooms indicate higher levels of AEB during tootling phases compared to baseline, withdrawal, and follow-up phases. These results from a high school setting are also similar to previous tootling studies which have investigated its effects on appropriate or AEB at an elementary or middle school setting (Lambert, 2014;

Lambert et al., 2015; McHugh, 2014). Effect size calculations based on NAP were all considered in the moderate range, while scores based on Tau-U ranged between the weak to moderate range. Lambert et al. (2015) and McHugh (2014) are the only other previous tootling studies that have calculated NAP, and they found moderate to strong effect sizes. The current study is the only one so far to utilize Tau-U calculations to examine effect sizes for AEB.

Research Question 3

The third research question examined if a tootling procedure would be socially valid to teachers in a high school general education classroom setting. Based on the results of a modified BIRS, all three teachers felt that the tootling intervention was an overall acceptable intervention for use in their classrooms. Each classroom teacher 'strongly agreed' with the statement that they would be willing to use tootling again in the classroom. However, none of the classroom teachers were using the intervention during observations in the follow-up phase, despite their stated willingness to do so on the BIRS. The teacher from Classroom B anecdotally reported that he felt the classroom was more positive in general, as students were helping one another more often, and arguing less during class. He also reported feeling noticeably less stressed at the end of the day during the intervention phase. Previous tootling research (Lambert, 2014; Lambert et al., 2015; McHugh, 2014) has only used the IRP-15, which found, similar to the current study, that teachers thought the tootling intervention was acceptable. The current study additionally found that teachers agreed that the intervention was effective, and had an acceptable time to effectiveness.

Limitations

The results of the current study should be viewed with several limitations in mind. First, all three participating classrooms were from a single high school in a rural community in a Southeastern state. More replications may be necessary to determine if a tootling intervention is similarly effective and generalizable to other settings and populations. Observations were also only typically completed for 20 minutes during the class. While this 20 minute period was reported by the classroom teacher as what they believed was the most disruptive time during the class, behavior levels may have varied at different times of the class period, and influenced by intervention procedures (e.g., reminder of tootling at the start of class). Similarly, it is unknown if the positive effects of tootling were generalized outside of the classroom period in which students were participating. For example, it is not known if students' disruptive behavior decreased during their second block class, if they were only participating in the intervention during their fourth block class.

Another limitation was treatment integrity on conducting tootling procedures. The teacher for Classroom A was provided performance feedback on 5 occasions, and once for Classroom C's teacher, for missing at least one step during the primary observer's treatment integrity check during observations in the intervention phases. Additionally, as mentioned above, teacher self-report data for treatment integrity for Classroom A and C were 82% and 90%, respectively. The teachers for Classroom A and C most commonly missed reviewing tootling instructions and the class' progress chart at the start of class, reading at least five tootles at the end of class, and updating the progress chart.

The lack of intervention during each classroom's follow-up phase was also a limitation for teacher acceptability. While responses on the BIRS for all three classroom teachers indicated that they agreed overall that tootling was an acceptable intervention, none of the teachers decided to continue using the intervention once it was no longer asked of them. However, it is interesting that the teachers all strongly agreed on the BIRS that they would be willing to use tootling again in the classroom.

Coding for AEB also did not differentiate between passive and active engagement. Students may have only begun to act as if they were on-task (e.g., looking at their worksheet), but may have still been not engaged in completing the actually academic activity. In addition, while NAP and Tau-U effect size calculations offer information on differences between phases, they do not provide information on the magnitude of the intervention. While some calculations indicated moderate or strong effect sizes, these scores do not directly address the clinical significance or meaningfulness of the intervention.

Possibilities for Future Research

Similar to Lambert (2014) and McHugh (2014), a target student can be used during observations to determine if the intervention is having an effect on a specific disruptive student identified by school staff. The interdependent group contingency may also be altered to encourage tootling from each student to reduce the possibility of having just a few students who are submitting tootles help the entire class reach the class reward. Future studies might also focus on examining tootling in the context of a high school already implementing PBIS, and how the intervention might work in conjunction with school-wide incentives or rewards systems.

Tootling consists of a number of components. For example, the intervention utilizes teacher and peer-based reinforcement of appropriate behavior and extinction of inappropriate behavior. In addition, the students in the class, the progress chart, and tootling paper slips serve as discriminative stimuli to engage in appropriate behavior. The methodology and design of the current study does not allow attribution of effectiveness to any one or combination of components. A component analysis to determine which aspects of the tootling intervention are necessary to efficiently decrease disruptive behavior or increase AEB should also be examined in the future. Similar to Lambert (2014), Lambert et al. (2015) and McHugh (2014), participating teachers occasionally missed steps of the tootling procedure. An analysis of the different components of tootling may provide insight into which procedures produce the largest effect on students' behavior, and which steps may not be critical to the success of the intervention.

Implications for Practice

The results from this study indicate that tootling is an intervention that can provide high school teachers a way of delivering positive reinforcement for appropriate behaviors of students. Since the intervention was peer-based and primarily completed by students in the classroom, it did not place a large demand on teachers. This study also adds to the literature base that elementary classwide interventions can be adapted successfully for use in high school settings (Flower et al., 2014; Kleinmen & Saigh, 2011; Mitchell, 2012, 2014; Schanding & Sterling-Turner, 2010). The structured environment of tootling, which focuses on positive reinforcement of appropriate behavior, allows it to be used in a high school setting either alone or in combination with other PBIS procedures at a Tier I or Tier II level. The positive nature of the tootling

intervention complements PBIS, and applies sound behavioral principles that can help students engage in appropriate behaviors in a high school setting and contribute to a more conducive learning environment.

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

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

NOTICE OF COMMITTEE ACTION

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

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

PROTOCOL NUMBER: 14081301
PROJECT TITLE: The Effects of Tootling on Disruptive Behaviors and Academic Engagement in High School Classrooms
PROJECT TYPE: New Project
RESEARCHER(S): John Lum
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 08/15/2014 to 08/14/2015

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

APPENDIX B

TEACHER INFORMATION AND CONSENT FORM

Title of Study: The Effects of Tootling on Decreasing Disruptive Behavior and Increasing Appropriate Behavior in High School Classrooms

Purpose of Study: Your permission in requested for participation in a study that is investigating the effects of an intervention called Tootling for decreasing class-wide disruptive behaviors and increasing appropriate behaviors.

Who can participate: Students in high school (grades 9-12) and their teachers can participate in the study. Additionally, the children must exhibit behavior that is inappropriate and/or disruptive to the classroom.

Methods and Procedures: Upon agreeing to participate, you will be contacted by the primary researcher to obtain information regarding your class' overall disruptive behaviors and to determine target behaviors to be observed. If the criterion for inclusion is not met, you may request services through an alternative intervention. If the criterion of 30% classwide disruptive behavior *is* met, you will be asked to implement the Tootling intervention. The primary researcher will train you in implementing the intervention using all necessary materials. You will also be given instructions about how to train the students on the Tootling intervention. In Tootling, the students will privately write classmates' appropriate behaviors on paper slips throughout the day and place them in a designated box for collection. In consultation with the primary researcher, you will select the target behaviors and the Tootling implementation time. During intervention, at the start of each class you will provide the students with specific slips of paper, and remind and encourage them to write their tootles. Students will be told that their number of tootles will be counted daily and posted in the classroom for feedback. If they earn a certain number of tootles, the class will earn a reward.

After the intervention has been running for a period of time, the primary researcher will ask you to briefly stop the intervention in your classroom. This withdrawal phase is to check if the intervention is in fact causing behavior in the class to change. Although this withdrawal phase typically only continues for a few days, if at any time you would like to resume the Tootling intervention earlier, the intervention will be restarted immediately.

The researcher and trained graduate students will conduct observations during the previously decided time when disruptive behavior is most likely to occur during a learning activity. Disruptive behaviors of concern and appropriate behaviors you wish to improve will be observed and recorded.

Benefits: Your benefits by participating in this study may include observed improvements in student behavior, and learning a unique intervention designed to improve student behavior.

Risks and Discomfort: There are few anticipated risks associated with participation. Initially, you may not be comfortable with the time required to implement Tootling in your classroom. You also may not feel comfortable implementing an unknown and new procedure in your classroom. However, you will be provided with training by the primary investigator as well as any additional materials needed for implementation. The primary investigator will also be available to answer any questions you may have. Throughout the experiment, your students' behavior will be monitored. Problem behaviors may also increase again to pre-intervention levels during the withdrawal phase. In the event that undesired and unanticipated effects arise (e.g., increase in disruptive behaviors during the intervention), modifications or termination of procedures will occur, and you and your students will be provided with 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 voluntary. You may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Whereas no assurance can be made concerning results that may be obtained (as results from investigational studies cannot be predicted), the primary investigator 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 John Lum or Dr. Daniel Tingstrom (Phone: 601-266-5255; Email: john.lum@eagles.usm.edu; 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,

John Lum, B.A., B.Ed.	Daniel H. Tingstrom, Ph.D.
School Psychologist-in-Training	Supervising Licensed Psychologist
	MS License #29-422
Department of Psychology	Department of Psychology
The University of Southern Mississippi	The University of Southern Mississippi

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, 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.

_____ _____

Signature of Teacher *Date*

_____

Signature of Witness

APPENDIX C

TEACHER DEMOGRAPHICS FORM

Teacher Demographics:

Age _____

Number of years teaching _____

Race _____

Gender _____

Highest Degree earned _____

Classroom Demographics:

Number of students in the class _____

Number of: Males _____ Females _____

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

Circle *one*: General Education Special Education Inclusion

Number of SPED students in your classroom: _____

Please list the disability categories of each child in SPED (do not include names or any other identifying information):

_____

_____

_____

APPENDIX D

SCRIPT FOR TOOTLING TRAINING SESSION

Training Steps

1. Indicate the need to change the focus of behaviors towards *positive* instances.

   Say: In school, we often only focus on the bad things students do. Take a few seconds to think of all of the good things a teacher has told you about your behavior, and then think about all of the bad things a teacher has told you about your behavior.

   (Pause for a few seconds) I am guessing most of you have heard more negative comments about your behavior than positive ones. I want to change that in this classroom. I would like to make sure everyone is recognized for the good things they do, big and small.

2. Introduce the Tootling procedure.

   Say: We are going to start a procedure where you will report and write down when you see another student doing something good or helpful. If the whole class is successful and does this enough, I will give the whole class a reward.

   While I'm explaining this now, we will call it giving a 'positive comment,' but we will vote on a specific name when I'm finished explaining how this works.

3. Start a discussion with the class, asking for specific examples. Start the discussion by giving an example. Also include some unacceptable examples.

   Say: For example, a good positive comment would be "Nick helped Matt hand in his worksheet" or "Kate raised her hand before talking to give an answer" or "Mark was working quietly on his worksheet." An incorrect 'positive comment' would occur if there is no name mentioned for the student doing the good behavior or if what's written down is not a specific example of a good behavior, such as "The boys have pencils."

4. Teach the class what to write on the paper slips.

   Say: On each paper, you will write the student's name and what he or she did that was good or helpful.

5. Have each student write a practice tootle on a paper slip.

   Say: I want everyone to write one positive comment on a paper slip for practice. When you're finished, I will collect them and read it out loud so we can practice some more together.

   Praise acceptable examples and provide feedback for inappropriate examples.

6. Explain the procedure.

Say: Every day I will give each of you a paper slip on your desk. Each time you see a classmate doing something good or helpful, I want you to write it down. Remember, when you write a positive comment be sure to put the person's name and what they did.

7. Tell the class that they can put their paper slips in a marked shoebox during transition times.

Say: You can put your paper slips in this box (hold up box) during your free time between assignments or activities. For example, this means you will have to hold on to your paper slips until it's time to switch from bellwork to the start of the lesson, or until class ends. Then you may get up and put your cards in the box.

8. Explain that this is anonymous, and that they retrieve another paper slip after handing one in.

Say: This is completely anonymous, so do not write your own name down anywhere on the card – only the name of the person you are writing a positive comment for. Once you hand in one positive comment in the box, you should pick up another paper slip and bring it back to your desk.

9. Tell the class that you will count the tootles and add them up for their reward.

Say: At the end of each day, I will count the number of positive comments in the box and put the total number on whiteboard at the front of the class so everyone can see. Once we reach ___ (number) positive comments, then the whole class will receive a reward.

10. Ask the class to come up with reward ideas. *Decide on one appropriate choice to be used for the first reward*. Write down other appropriate examples not chosen for possible use later.

11. Vote on a name for the tootling procedure.

Write on the board: Brags, Compliments, Hollas, Kudos, Positive Comments, Shout Outs, Tootles

Say: We will now vote on what were are going to call this procedure. Here are seven choices I have thought of: Brags, Compliments, Hollas, Kudos, Positive Comments, Shout Outs, or Tootles. Are there are any other suggestions?

Have students anonymously vote on the choices. After tallying the results, announce the winning name.

Adapted from Lambert, A. M., Tingstrom, D. H., Sterling, H. E., Dufrene, B. A., & Lynne, S. (2015). Effects of Tootling on Classwide Disruptive and Appropriate Behavior of Upper-Elementary Students. *Behavior Modification*, *39*(3): 413-430.

APPENDIX E

TOOTLE PAPER SLIP

Tootle Card

Who: _____

Did:

_____

_____

APPENDIX F

BEHAVIOR INTERVENTION RATING SCALE

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 *not* 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
Tootling quickly improved the students' behavior.	1	2	3	4	5	6
Tootling produced a lasting improvement in the students' behavior.	1	2	3	4	5	6
Tootling improved the students' behavior to the point that it did not noticeably deviate from other classmates' behavior.	1	2	3	4	5	6
Soon after using Tootling, the teacher noticed a positive change in the problem behavior.	1	2	3	4	5	6
The students' behavior remained at an improved level even after Tootling was discontinued.	1	2	3	4	5	6
Using Tootling did not only improve the students' behavior in the classroom, but also in other settings (e.g., other classrooms, home).	1	2	3	4	5	6
When comparing the students with other well-behaved peers before and after the use of the intervention, the students' and peers' behavior are more alike after using the intervention.	1	2	3	4	5	6
The intervention produced enough improvement in the students' behavior so the behavior was no longer a problem in the classroom.	1	2	3	4	5	6
Other behaviors related to the problem behavior were also likely improved by the intervention.	1	2	3	4	5	6

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

APPENDIX G

PROBLEM IDENTIFICATION INTERVIEW FORM

Student: _____ Teacher (s): _____

School: _____ Age: _____ Sex: Male Female

Date: _____

1. Describe the class' behavior problems in order of severity and give examples.

2. How manageable is the problem behavior?

3. In what settings does the problem behavior occur?

4. Goals for the problem behavior (what would you like to see happen)

5. Tell me about what happens before the behavior occurs. After the behavior occurs?

6. Intervention attempts, degree of success, reasons for failure.

a. What procedures have you tried in the past to deal with this problem behavior?

b. What, if anything, have you done to deal with similar behavior problems in the past?

c. What's worked? What hasn't?

7. Rules and typical procedures carried out in the classroom (constraints and assets).

8. Reinforcers - used now and potentials for future (e.g., praise, activities, or notes sent home).

9. Any data collected presently?

10. Ask teacher for any additional comments or questions.

Adapted from Kratochwill, T. R., & Bergan, J. R. (1990). *Behavioral consultation in applied settings: An individual guide*. New York, NY: Plenum Press.

APPENDIX H

OBSERVATION FORM

Classroom: _____ Date: _____

Phase: _____ Observer Initials: _____

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

Disruptive: _____ / 120 = _____%	**IOA:** Yes / No **Disruptive:** _____ / 120 = _____%
Academic: _____ / 120 = _____%	**Academic:** _____ / 120 = _____%

Adapted from Lambert, A. M., Tingstrom, D. H., Sterling, H. E., Dufrene, B. A., & Lynne, S. (2015). Effects of Tootling on Classwide Disruptive and Appropriate Behavior of Upper-Elementary Students. *Behavior Modification*, *39*(3): 413-430.

APPENDIX I

TEACHER TRAINING SCRIPT INTEGRITY CHECKLIST

1) Introduction of Tootling:
    - ☐ Give the classroom teacher the "Script for Tootling Training Session"
    - ☐ Explain what a "tootle" is
2) Explanation of each step of the tootling procedure:
    - ☐ Step 1 – Change focus to positive behaviors
    - ☐ Step 2 – How to define/introduce the intervention
    - ☐ Step 3 – Give appropriate and inappropriate examples of tootles
    - ☐ Step 4 – How to properly write a tootle
    - ☐ Step 5 – Have students practice writing a tootle
    - ☐ Step 6 – Explain the daily tootling procedure
    - ☐ Step 7 – How to submit a tootle
    - ☐ Step 8 – Explain that tootles are anonymous
    - ☐ Step 9 – How the classwide reward works
    - ☐ Step 10 – How to decide rewards
    - ☐ Step 11 – Name the intervention
3) Practice the tootling procedure:
    - ☐ Allow the teacher to practice each step of the teacher script.
    - ☐ Provide feedback on any errors or omitted steps.
4) Questions & Answers:
    - ☐ Ask the teacher if there are any questions regarding the procedure.

Number of steps completed: _____ / 16 = _____ %

Date: _____

Observers' initials: _____

Adapted from Lynne, S. (2015). *Investigating the Use of a Positive Variation of the Good Behavior Game in a High School Setting* (Master's thesis). Retrieved from http://aquila.usm.edu/masters_theses/82

APPENDIX J

INTEGRITY FOR TOOTLING TRAINING

Date: _____ Observer: _____

	Training Steps	Yes	No
1	Introduction indicating a shift to a 'positive' focus		
2	Defines Tootling		
3	Class discussion of examples and non-examples		
4	Teach students how to write on paper slips		
5	Have each student write a practice tootle		
6	Explain tootling procedures		
7	Explain where to put tootles and when they can do it		
8	Explain feedback chart and poster		
9	Decides on a reward		
10	Vote on a new name for "Tootling"		

Number of steps competed: **/10**

Percentage of steps completed: _____

Adapted from Lambert, A. M., Tingstrom, D. H., Sterling, H. E., Dufrene, B. A., & Lynne, S. (2015). Effects of Tootling on Classwide Disruptive and Appropriate Behavior of Upper-Elementary Students. *Behavior Modification*, *39*(3): 413-430.

APPENDIX K

TREATMENT INTEGRITY FOR TOOTLING

To be completed by the classroom teacher daily

Date: _____ Teacher: _____

	Tootling Steps	Yes	No
Beginning of the Period/Class			
1	Provide paper slips to students		
2	Review tootling instructions and show feedback chart		
During Transitional Times			
3	Allow students time during transitions to put tootles in box		
End of the Period/Class			
4	Read at least 5 tootles at the end of the day		
5	Add up tootles for the day/week and update feedback chart		

Number of steps competed: **/5**

Percentage of steps completed: _____

Adapted from Lambert, A. M., Tingstrom, D. H., Sterling, H. E., Dufrene, B. A., & Lynne, S. (2015). Effects of Tootling on Classwide Disruptive and Appropriate Behavior of Upper-Elementary Students. *Behavior Modification*, *39*(3): 413-430.

APPENDIX L

TREATMENT INTEGRITY FOR EXPERIMENTER OBSERVATIONS

Classroom: _____

Date: _____ Observer: _____

	Tootling Steps	Yes	No
1	Feedback chart hung up in a visible area of the classroom		
2	Feedback chart updated from previous days		
3	Paper slips visible on the students' desks		
4	Tootling collection container visible		

Number of steps competed: **/4**

Percentage of steps completed: _____

Adapted from Lambert, A. M., Tingstrom, D. H., Sterling, H. E., Dufrene, B. A., & Lynne, S. (2015). Effects of Tootling on Classwide Disruptive and Appropriate Behavior of Upper-Elementary Students. *Behavior Modification*, *39*(3): 413-430.

APPENDIX M

WITHDRAWAL INTEGRITY FOR EXPERIMENTER OBSERVATIONS

Classroom: _____

Date: _____ Observer: _____

	Tootling Steps	Yes	No
1	Feedback chart NOT visible in the classroom		
2	Paper slips NOT visible on the students' desks		
3	Tootling collection container is NOT visible		

Number of steps competed: **/3**

Percentage of steps completed: _____

REFERENCES

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