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The Effects of Tootling Without External Rewards On Whole-Class Lessons
in a Lower Elementary Classroom

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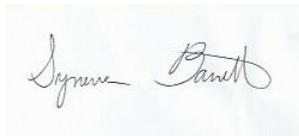
in fulfillment of final requirements for the MAED degree

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A rectangular box containing a handwritten signature in cursive script, which appears to read "Suzanne Paritt".

Date: 12-7-19

Abstract

The purpose of this research was to examine the effects of Tootling without external rewards on negative behaviors during whole-class lessons in a Montessori lower elementary classroom. Twenty-four students, ranging from six to nine-years-of-age, including five who received outside assistance, were the subjects of this study. The students participated in a self-assessment pre- and post-intervention. The researcher gave lessons on whole-class lesson etiquette, the importance of being a supportive community, and how to report their classmates' positive behaviors after whole-class lessons using Tootles. The results suggested Tootling without external rewards had minimal positive effect on students' negative behaviors during whole-class lessons. A slight increase occurred in students' positive opinions about their own and their peers' behaviors during whole-class lessons. Limitations, directions for future study, and implications are discussed.

Keywords: Tootling, Positive Peer Reporting, negative behaviors, Montessori, lower elementary

Classroom management that promotes self-regulation, student involvement in learning, and intrinsically motivated positive peer relationships is a necessary tool for teachers who desire a collaborative classroom environment. Cooperation of all students during whole-class lessons is of particular importance. When children sit quietly, keep their hands to themselves, and actively listen during a whole-class lessons, all benefit. All children are able to take in the presentation without distractions from their peers, and the teacher is able to focus on the presentation without continually reminding students of lesson etiquette.

In a Montessori lower elementary classroom for six to nine-year-old students, small-group lessons geared toward the needs and ability of specific students are given more frequently than lessons to the whole class. However, whole-class lessons are an essential aspect of the curriculum. These lessons introduce students to the broader concepts they will study in their smaller groups throughout the semester, and they are used for class meetings to build community and address issues that may arise. For lessons to make the most significant impact and transpire smoothly and efficiently, children need to respect the space of others and wait for a turn to talk until the discussion phase of the lesson.

These critical social skills cannot exist without fostering positive peer interactions, motivation, and self-regulation. According to Montessori and Vygotsky, culture and environment are vital components in motivation, self-regulation, and social interactions (Montessori, 1967; Shunk, 2012). Children need to be in a learning environment which cultivates scaffolded learning, respect, and choice in order to

accomplish these complex social skills. Students must be taught which behaviors are acceptable in certain situations. It is necessary for them to “buy-in” to why these behaviors are important and thus be motivated to choose those behaviors. Students also must self-regulate to perform these necessary tasks and support each other through positive peer interactions. Observations of a Montessori lower elementary classroom of six to nine-year-olds showed that during whole-class lessons, the children struggled with many of these essential social skills. The children were observed talking to each other, touching each other, interrupting the teacher, and tattling during large group lessons.

Positive Peer Reporting (PPR) has shown great results in nurturing positive peer interactions and lessening disruptive behaviors in students (Skinner, Neddneriep, Robinson, Ervin, & Jones, 2002; Murphy & Zlomke, 2014; McHugh, Tingstom, Radley, Barry, & Walker, 2016; Cihak, Kirk, & Boon, 2009; Lambert, Tingstrom, Sterling, Dufrene, & Lynn, 2015). PPR is a method used with children to help them see the good in others around them. PPR was initially introduced to include a student who had been ostracized by their peers or who exhibited disruptive behaviors.

In 2000, Skinner et al. introduced a modified version of PPR called Tootling. Instead of making the focus of praise just one student, Tootling encouraged all students to notice each other’s positive behaviors and report them at a designated time each day by writing Tootles. The students received rewards as a class, such as extra recess if they reached a chosen goal of a specific number of Tootles in a designated time. To stay in alignment with Montessori and other philosophies that report long-term adverse effects on students’ intrinsic motivation from the use of external rewards (Montessori, 1967; Kohn, 2004; Lillard, 2005; Bear, Slaughter, Mantz, & Farley-Ripple, 2017), the

researcher chose to see if Tootling would still produce positive results for whole-class lesson behaviors without the use of external rewards.

Negative behaviors during whole-class lessons such as tattling, interrupting the teacher, and other actions of disrespect were observed in a Montessori lower elementary classroom. In order for whole-class lessons to be impactful, students need to understand expectations and become intrinsically motivated to follow those expectations. For this research, Positive Peer Reporting with Tootling was utilized during whole-class lessons with 6 to 9-year-old students in a Montessori classroom. It was conducted without external rewards to see if the same effects were achieved using intrinsic motivational methods.

Theoretical Framework and Review of Literature

The link between positive peer interactions, self-regulation, and motivation is an important topic in educational research (Bear, Slaughter, Mantz, & Farley-Ripple, 2017; Kohn, 2004; Shunk, 2012; Skinner, Neddneriep, Robinson, Ervin, & Jones, 2002). Research debates if rewards assist in motivation and positive peer interactions, and whether improvement is for the short-term or long-term (Montessori, 1967; Kohn, 2004; Lillard, 2005; Bear et al., 2017). Evidence suggests that the ability to self-regulate and have positive peer interactions is enhanced when coaching on self-regulation and proper communication with peers is used in an educational setting (Shunk, 2012).

This research followed the principle that supporting the development of positive peer interactions, self-regulation and motivation is possible through the use of techniques that encourage pro-social behavior and through the satisfaction of a group effort to improve one's environment (Montessori, 1967; Kohn, 2004; Lillard, 2005; Bear et al.,

2017; Shunk, 2012). Vygotsky's Sociocultural Theory and Montessori's philosophy of motivation and rewards were the theoretical frameworks for this research.

Vygotsky focused on the social environment as being the most critical factor in development and learning. He found that humans have the ability to change their environment to suit their needs. The importance of language and social interactions in learning and the need for socially meaningful activities were the main emphasis in Sociocultural Theory (Shunk, 2012).

Furthermore, a healthy environment that meets children's physical needs along with healthy social interactions that make children feel valued is critical to learning. Emphasis is placed between persons and their environment. Vygotsky felt that schooling was vital because it gave students the opportunity to learn about their heritage and how they can contribute to their communities, therefore becoming leaders in society. (Shunk, 2012).

The Zones of Proximal Development (ZPD) is an essential aspect of Vygotsky's theory. The ZPD is a measurement of the developmental level of a person and how much help from an adult or more experienced peer a learner needs. Shunk states, "In the ZPD, a teacher and learner work together on a task that the learner could not perform independently" (2012, p. 244). The learner's own experiences can affect the outcome of a lesson. As the teacher and learner interact, the collaboration causes internalization of the information by the learner (Shunk, 2012).

Another tenet of Sociocultural Theory is peer collaboration. Once the teacher has given the children the tools to complete a task, the teacher should provide children with opportunities for further learning with peers. Peer collaboration occurs when

students work on tasks together as they socially interact. Through this social interaction, children teach and learn concepts to and from each other (Shunk, 2012).

Self-regulation is addressed in Vygotsky's theory through activities like planning, synthesizing and forming concepts. These activities do not happen without the influence of children's social environment and culture. Self-regulation happens gradually as children internalize language and concepts through the use of talking things out for themselves, and other cognitive tools, like lessons where the student and teacher interact to achieve a skill (Shunk, 2012).

Montessori (1967) also recognized children's need to interact and collaborate with their peers and their teacher socially. Teachers carefully prepare the physical environment and social-emotional environment with the students in mind. Elementary classrooms are set up to encourage children to move freely through the environment by placing work materials on the shelves. Children are also free to choose where they wish to work and with whom they wish to work as long as work is productive. The environment fosters collaboration with tables for multiple people to sit together and through small and whole group lessons where children are encouraged to share their ideas. The ability of children to balance social interactions, self-regulation, and motivation is fostered by the teacher. Teachers continually self-evaluate their interactions with children, give lessons on character development, conflict resolution and how to be polite, and observe the children's peer interactions ensuring that students have the tools to solve problems for themselves (Montessori, 1967).

Montessori's philosophy on rewards and self-regulation argues that when an environment is in place that promotes self-advocacy and freedom of choice, students will

learn to do what is right because it pleases them; there is no need for an external reward. Montessori (1967) warns that giving students rewards based on performance can harm intrinsic motivation. Children will either not be interested in the reward or perform just for receipt of the reward.

Both Vygotsky's theory and Montessori's philosophy emphasize the importance of culture and environment for learning to take place. Positive peer interactions, motivation, and self-regulation are acquired by giving children only the amount of assistance they need and scaffolding the learning to eventual independence. Applying these theories to the intervention, Tootling without external rewards in a lower elementary classroom assisted the students with positive peer interactions, self-regulation, and motivation. All are needed to accomplish the goal of becoming a more accepting and respectful classroom community.

Much research has been conducted on the effects of Positive Peer Reporting (PPR) and PPR with Tootling in classroom settings (Skinner et al., 2000, 2002; Murphy & Zlomke, 2014; McHugh et al., 2016; Cihak et al., 2009; Lambert et al., 2015). PPR alone is typically administered to encourage inclusion of one child or a small group of children within a larger group of peers. Children took turns offering compliments to a child who had been socially rejected. Rewards were given after children provided compliments.

PPR with Tootling (Skinner et al., 2000; Murphy & Zlomke, 2014; McHugh et al., 2016; Cihak et al., 2009; Lambert et al., 2015) consists of all students in a class focusing on each other's positive behaviors. It is presented to the students as the opposite of tattling. The class receives rewards such as extra recess or a pizza party if they meet a

goal by completing a desired number of Tootles. Conversely, many researchers have suggested that rewards prove to be a hindrance to children's intrinsic motivation and can negatively impact their aspiration to continue a desired behavior over a long period of time (Montessori, 1967; Kohn, 2004; Lillard, 2005; Bear et al., 2017).

This literature review inspects Tootling as a method for classroom management. The review will look at the development of Tootling, how it was taught and administered, and the results of the research. The discussion will also include a review on the use of rewards, the short and long-term effects, and what theorists have to say about rewards' impact on intrinsic motivation.

Positive Peer Reporting Defined

Research suggests Positive Peer Reporting (PPR) improves peer connections and peer perceptions of students who face social rejection and it has been used in a variety of settings. Most PPR research has been conducted in classrooms (Skinner et al., 2000; Murphy & Zlomke, 2014; McHugh et al., 2016; Cihak et al., 2009; Lambert et al., 2015). The PPR method is implemented as follows: Students are coached by the researcher or teacher on what PPR is and how to observe positive behaviors. A student is randomly drawn or chosen by the teacher, students are encouraged to pay positive comments to the chosen student, the students who share a positive comment earn rewards (points or activities) for reporting positive behaviors. This particular model assisted with acceptance of individual children who were faced with rejection by peers in the classroom setting or other social settings (Skinner et al., 2002).

PPR with Tootling

Tootling is a modified form of PPR that is used class-wide; no individual students are chosen. Skinner, Cashwell, and Skinner (2000) developed the Tootling program. By utilizing Tootling, students were encouraged to report on each other's positive behaviors. The researcher or the teacher chose the number of Tootles required to reach a goal. All students in the class were rewarded through special activities when they attained their goal. The rewards were usually decided by the teacher (Skinner et al., 2000, 2002; Cihak et al., 2009; Murphy & Zlomke, 2014; Lambert et al., 2014; McHugh et al. 2016).

Studies that used the Tootling method and tracked behaviors found it enhanced peer relationships and diminished the number of disruptive behaviors that occurred in classrooms while the intervention took place (Murphy & Zlomke, 2014; McHugh et al., 2016; Cihak et al., 2009; Lambert et al., 2015; Sherman, 2012). Research showed that this method worked with typically developing children as well as children with learning differences (Cihak et al. 2009). Studies also indicated that the Tootling method has been useful for elementary aged to high school-aged children (Murphy and Zlomke, 2014).

Typically, Tootling was introduced by an outside researcher who was not connected to the classroom. Observations of the children's behaviors were taken by the researcher or other trained observers. The researcher or the teacher educated the children about what Tootling was and how to report Tootles. The researcher collected data through observations and the number of Tootles delivered. Most studies used the ABAB design method where (A) baseline data was collected; (B) the intervention was administered then (A) taken away, then (B) reintroduced (Skinner et al., 2000, 2002; Cihak et al., 2009; Murphy & Zlomke, 2013; Lambert et al., 2014; McHugh et al. 2016).

Other research used a multiple baseline comparing PPR and PPR with Tootling (Sherman, 2012).

Implementation of Tootling in the classroom follows several steps (Skinner et al., 2000, 2002; Cihak et al., 2009; Murphy & Zlomke, 2013; Lambert et al., 2014; McHugh et al. 2016). Students were taught in two to three 20-minute sessions about what Tootling is, how to record Tootles, and where to place Tootles after recording. Students were instructed that Tootles are the opposite of tattles; they report when other students act appropriately. The students were then given examples of appropriate actions such as: sharing materials, telling the truth, complimenting others, and working quietly. Often students were allowed to share examples of Tootling. The adult leading the lesson told the children if their examples of Tootles were correct or incorrect based on the criteria set by the researcher. On another day, children were taught how to write a Tootle on an index card. Students were instructed to list the name of the classmate, how the classmate helped, and whom they helped. Students were also given practice time to write Tootles on cards and get feedback from the instructor. The children were told to place their Tootles in a specific place, usually, a box that was easily accessible. (Skinner et al., 2000, 2002; Cihak et al., 2009; Murphy & Zlomke, 2013; Lambert et al., 2014; McHugh et al. 2016). In most cases, the teacher or researcher shared what the goal and reward would be before giving students the index cards to report Tootles (Cihak et al., 2009; Lambert et al., 2014; McHugh et al. 2016).

Once students received lessons on how to Tootle, they started the day with index cards taped to their desks. In most cases, students were encouraged to get a new card to fill out once the previous card was full. (Skinner et al., 2000, 2002; Cihak et al., 2009;

Murphy & Zlomke, 2013; Lambert et al., 2014; McHugh et al., 2016). Due to individual teacher preferences or time limitations, there were some cases where teachers limited students' access to the cards to only one card per session, or for brief amounts of time during class (Lambert et al. 2014; McHugh et al. 2016).

Tootles were recorded and displayed in classrooms in various ways. Some researchers used a poster with a thermometer and colored it in to show progress each week (McHugh et al., 2016; Lambert et al., 2014). Murphy and Zlomke (2014) reported that other teachers or researchers used posters with ladder rungs to fill in, pyramids with bricks, or an empty night sky to be filled with stars.

The goals for the number of Tootles to be reached and over what period of time also differed for each study. Beginning class goals ranged from 65 to 100 Tootles per day and increased to as much as 150 Tootles. Studies were conducted over several days, weeks or months (Skinner et al., 2000, 2002; Cihak et al., 2009; Murphy & Zlomke, 2013; Lambert et al., 2014; McHugh et al., 2016).

In the first Tootling study conducted by Skinner et al. (2000), the goal was to increase positive peer interactions through Tootling. Negative or disruptive behaviors were not recorded. Positive interactions were the only observations collected.

Positive and negative behaviors were both recorded and defined in other studies. In the research conducted by Sherman (2012), inappropriate behaviors were considered to be students getting out of their seats, off-task behaviors, and making noises (either nonsense vocalizations or talking). Appropriate behavior consisted of looking at the teacher during instruction, working with peers when requested, completing assignments when instructed, and talking about academic progress with the teacher.

Research conducted by Cihak et al. (2009), McHugh et al. (2016), and Lambert et al. (2015) stated the following were disruptive behaviors: talking out or making noises, being out of their seat without teacher's permission, and motor behavior that interfered with other students' learning. Positive behaviors entailed students being actively involved in teacher instruction, classroom activities, or other on-task behavior. Both positive and disruptive behaviors were selected based on desired outcomes that the teachers shared with the researchers. (Cihak et al., 2009; McHugh et al., 2016; Lambert et al., 2015).

Results of research that measured behaviors showed an increase in positive peer interactions and positive behaviors, and a decrease in negative behaviors. Cihak et al. (2009) found during the baseline phase negative behaviors averaged 23.2 per day by all students. When Tootling was implemented negative behaviors averaged 8.4 per day. McHugh et al. (2016) reported a mean of observed disruptive behaviors ranging from 34.79% to 54.24% of observed class time during the baseline phase. When Tootling was applied, the disruptive behaviors dropped between 18.9% to 13%. For Lambert et al. (2015) the study showed results for two classrooms. Of the baseline data collected during the researchers' 20-minute observation times, 26.6% and 27.3% of recorded behaviors were disruptive behaviors. With the implementation of Tootling, disruptive behaviors dropped to 9.4% of recorded behaviors in one classroom and 7.5% in the other. Sherman's (2012) research was conducted on four students and utilized PPR alone as well as PPR with Tootling. Sherman's results showed that during the baseline phase, students displayed negative behaviors during 33% to 50% of the classtime. This amount decreased to between 10% to 14% during PPR with Tootling.

External rewards were used in all studies. The rewards were given to the class once they reached a goal. Some rewards given included candy, a pizza party, and extra recesses (Cihak et al., 2009; McHugh et al., 2016; Lambert et al., 2015; Murphy and Zlomke 2014). These rewards were a group contingency and considered a significant motivator for the students to participate in the Tootling process. Skinner et al. (2000) established that the reward of extra recess increased the amount of Tootles reported by the children. This study did not include whether this increase in Tootles caused a decrease in undesirable behaviors from the children.

Studies reported that teachers found the intervention easy to implement and many chose to continue using the Tootling method after the study was complete (Skinner et al., 2000; Lambert et al., 2015). There has been little research to see if the trend of reduced negative behaviors continued once the Tootling cards were removed or lasted more than a short time. Most researchers noted that limitations included a need for more research on Tootling, a larger group to study, and that the increase in positive peer interactions could not be narrowed down to just Tootling since other factors were involved, such as a group reward (Lambert et al., 2015; Cihak et al., 2014; McHugh et al., 2016). A review of PPR and Tootling studies by Murphy and Zlomke (2014) states, “practitioners should be cautious that PPR interventions run the risk of becoming less effective over time...For example, Cashwell et al. (2001) identified notable decrease in praise reports following the class receiving an award” (2014, p. 134).

Criticism of External Rewards

According to many researchers, rewards prove to be a hindrance to children’s intrinsic motivation (Montessori, 1967; Kohn, 2004; Lillard, 2005; Bear et al., 2017).

Research showed that children who were intrinsically motivated were more likely to show social-emotional stability. Bear et al. (2017) discovered that rewards and praise worked for extrinsic motivation, but only for a short time. The researchers found that if rewards were used in a socially controlled manner, intrinsic motivation was negatively affected.

Montessori (1967) observed that children, who were given freedom of choice and educated about how to help themselves, became indifferent to external rewards, and that external rewards could decrease children's inner motivations. She observed that children found the most academic and social success without the use of external rewards.

Alfie Kohn stated that rewards are, "a way of doing something to children to get them to comply with our wishes" (2004, p.106). He argued that praising children and giving them rewards caused children to be dependent on them; therefore, children will do something in order to receive a reward instead of doing it because it is the right thing to do. The more children are rewarded for doing something, the more likely they are to lose interest in doing it (Kohn, 2004).

Lillard's (2005) research showed that positive social interactions were negatively affected by the use of praise and rewards. Lillard cited a study by Cockenburg and Bryant in 1978 where children who were not praised by their mothers after engaging in positive social interactions were more likely to spontaneously engage in positive social acts, such as saying, "thank you." Lillard's research also found that children who were not rewarded for acting charitably were more likely to feel altruistic than those who received a reward for their good deeds (2005).

Research on the use of Tootling in the classroom showed favorable results with positive peer interactions and a decrease in negative behaviors among children in all studies reviewed. There was no research on Tootling without an external reward once children attained a goal, or without a goal at all. Much research argues that the use of extrinsic rewards hinders children's intrinsic motivation and negatively effects positive peer interactions over time (Montessori, 1967; Kohn, 2004; Lillard, 2005; Bear et al., 2017). In consideration of these findings and with a strong belief in the Montessori method, the decision to research the effects of Tootling on negative behaviors during group lessons without external rewards and group goals was chosen for this research.

Methodology

This study utilized qualitative and quantitative research methods. Observations, tallies and notes of disruptive behaviors were collected during whole-class lessons (see Appendices A and B). A pre and post-intervention behavior self-assessment designed to measure how students felt they and their peers acted during whole-class lessons was given (see Appendix C). Finally, the children's Tootles were tallied and recorded at the end of each week (see Appendix D). Though most of the research conducted on Tootling followed an AABA format, the researcher chose to continue the intervention and not have a withdrawal period. The reasoning behind this decision was a desire to provide consistency for the students.

This research took place at a private, non-profit, American Montessori Society (AMS) accredited Montessori school. This school is in the Southeast region of the United States. The demographics of this area include a median household income of \$56,325 and 83% identifying as white (United States Census Bureau, 2010).

The participants in this study were 24 students in a lower elementary classroom. The children were ages six to nine years, and as is traditional in a Montessori setting, grouped in one classroom. The classroom consisted of 13 girls and 11 boys, with 10 six-year-olds, 8 seven-year-olds, 5 eight-year-olds, and 1 nine-year-old. The demographics of the area were reflected in the classroom. Three of the children received outside assistance for hyperactive, social/emotional, and academic support. Two other students were in the process of finding additional support needed for hyperactive and social/emotional behavior.

This research was collected two weeks into the beginning of the school year. The researcher recorded observational data regarding the type of lesson given, how many children were present, type of weather, visitors, and “other” (see Appendix A). The researcher kept track of disruptive behaviors using a tally mark system with the initials of each student. Disruptive behaviors noted were interrupting, talking to others, touching neighbors, in neighbors’ space, and tattling (see Appendix B). For this study interrupting was defined as answering questions without being called on, making loud noises, and behaviors that required the teacher’s direct attention, therefore interrupting the lesson. Talking to others was defined as any talking that occurred with peers either through quiet whispering or regular conversation. Touching neighbors included any time a child purposefully touched another child. Being in a neighbor’s space was defined as sitting in a way that either crowded another child or caused another child to have difficulty seeing the lesson. Tattling was considered when a child chose to report to the teacher on another child’s disruptive behavior.

During the first week of research, the researcher observed whole-class lessons once per day during designated lesson times. The data collected included the behavior tally sheet and observation notes (see Appendices A and B).

During the first day of the second week of research, the children filled out a self-assessment form. They answered questions about how they felt they and others behaved during group lessons (see Appendix C). The researcher then led a discussion with the children about appropriate group lesson behavior. Children were encouraged to offer what they had already learned regarding group lesson etiquette and add their opinions of why those rules were necessary. Proper etiquette was established as students keeping their hands to themselves, raising their hands for a turn to talk, sitting on their bottoms at the edge of the rug, only talking when it was their turn to talk, and looking at the person who was talking. Following the discussion, the whole class practiced inappropriate and appropriate lesson etiquette through role-playing.

The next day the researcher and the children reviewed the appropriate established etiquette for a whole-class lesson. The researcher then presented the lesson, *Black Elk's Vision for Peace* (McFarland, 2004). This lesson shares a vision that Black Elk had as a child, which symbolized peace and pro-social behavior for his people. The goal of this lesson was to help children see how pro-social, kind behaviors affect the peacefulness in their classroom. The lesson ends with a tree filled with flowers, which symbolizes how peace blooms in the classroom when we contribute peaceful, pro-social behaviors.

On the following day, the children and the researcher again reviewed appropriate whole-class lesson etiquette, followed by the researcher reading, *Have You Filled a Bucket Today?* by Carol McCloud (2016). The children were encouraged to share

examples of times when people filled their bucket or when they filled someone else's bucket. A discussion then commenced about how telling others when we notice their good behaviors helps fill their bucket.

On the fourth day, the final lesson was given. This lesson discussed that Tootles are a way to show someone we notice their good behavior, help peace bloom, and fill someone's bucket. The researcher showed the children how to Tootle; at the top of the Tootle, write the person's name who is receiving the Tootle, what they did, and write your own name at the bottom (see Appendix D). We practiced Tootles together verbally, and then the children practiced writing down Tootles. The researcher showed the children how to place the Tootles in a bucket when finished and place a flower on the tree to see peace blooming in the classroom from noticing each other's positive actions during whole-class lessons.

The researcher then collected observational data for five weeks. Observations were collected Monday through Friday, unless the teacher was unable to be at school, or other conflicts arose, such as field trips. The researcher observed a total of 19 whole-class lessons on a variety of subjects. The teacher gave most lessons between 11:00 and 11:30, except for Wednesdays, which were between 1:15-1:45, following the children's recess. Lesson lengths varied between 10 and 30 minutes, depending on the content of the whole-group lesson; therefore, the researcher divided the tallied behaviors to find a 10-minute daily average when analyzing the data. The observations included notes and tally marks of inappropriate lesson behavior. Data analysis consisted of examining observations, counting, and averaging the tallied behaviors from each day.

On most Fridays, the researcher sat with the children and discussed how many Tootles occurred that week, who and what the Tootles were about, and gave the children opportunities to share any positive whole-class lesson behaviors that they witnessed verbally. During data analysis, the researcher checked to see if the number of Tootles each week showed a relationship with the number of negative behaviors observed.

During the first days of the intervention, the researcher observed that most children were not writing and placing Tootles in the bucket after the whole-class lesson. The researcher and teacher decided that the teacher would remind children at the beginning of the lesson to look for behaviors to Tootle about, and at the end of the lesson, remind the children that they may choose to Tootle.

On the final day of observations, the researcher had the children fill out the self-assessment form. 15 of the children chose to participate in the post-intervention assessment. The researcher compared the pre and post-intervention self-assessments to analyze if students' opinions had changed.

Data Analysis

Data collection consisted of quantitative and qualitative information in the form of observations, negative behavior tally sheets, student self-assessments, and the students' Tootles. The researcher compared the student self-assessments pre and post-intervention to examine if the students' opinions of their whole-class lessons had changed. The negative behaviors tallied from each week were counted and divided, depending on the lesson's length to find a 10-minute average count of negative behaviors observed during each lesson. The differences were then compared to the baseline data collected to examine if there was a decrease in negative behaviors. The researcher

compiled the observation notes and looked for trends between external factors and behaviors to see if outside factors might play a role in the number of behaviors recorded. Additionally, the researcher counted and divided each type of behavior to find a 10-minute average to see whether the intervention assisted more with some behaviors than others. The researcher then reviewed the average number of Tootles collected each week to determine if the number of negative behaviors had any relationship with the number of Tootles.

Results

This research was conducted to determine if the use of Tootling without external rewards affected negative behaviors during group lessons in a lower elementary classroom. The researcher began the intervention with group lessons after baseline data was collected. The lessons consisted of proper lesson etiquette and lessons on being a peaceful, supportive classroom community. A mixed method research design was used, and data collection consisted of student self-assessments pre- and post-intervention, the researcher's observation notes, tally marks of observed negative behaviors, and the Tootles that children filled out to report each other's positive behaviors during group lessons.

This research took place at a private, non-profit, Montessori school in the Southeast region of the United States. The participants were 24 students in a lower elementary classroom. The children's ages ranged from six to nine years and consisted of 13 girls and 11 boys (see Table 1). Five of the children were either receiving outside support for social/emotional or academic needs or were in the process of gaining additional support.

*Table 1**Classroom Population According to Age and Gender*

<i>Age</i>	<i># of Boys</i>	<i># of Girls</i>
6	3	7
7	6	2
8	2	3
9	0	1

The Effects of Tootling on Negative Behaviors

The question this research explored was to what extent would the use of Tootling without external rewards affect negative behaviors during whole group lessons in a lower elementary classroom. To answer this question, the researcher first collected baseline data of tallied behaviors and observation notes during group lessons for five days, followed by administering a pre-intervention student self-assessment form. Students answered questions designed to measure how they felt they acted and how they felt their peers acted during whole-class lessons.

Next, the researcher conducted a series of group lessons focused on group lesson etiquette, the importance of a supportive classroom community, and how to write and submit Tootles after the whole-class lessons. To assess how the intervention affected whole-class lessons, the researcher kept track of negative behaviors through a tally mark system once per day for 19 days. The researcher offered the same self-assessment again after the final whole-class observation.

The researcher then analyzed the results of the data collected. The researcher compared the student self-assessments pre- and post-intervention to examine if the students' opinions of their whole-class lesson behaviors had changed. The negative behaviors tallied from each week were counted, averaged, and compared to the average baseline data collected. The researcher analyzed observation notes to see if any external factors played a role in the number of behaviors recorded. Additionally, the researcher counted and averaged each behavior to see whether the intervention assisted more with some behaviors than others. The researcher then analyzed the number of Tootles collected each week and determined if the number of negative behaviors had any relationship to the number of Tootles.

Analysis of Data

Student Self-Assessments

All 24 students chose to participate in the pre-intervention self-assessment. When the researcher administered the post-intervention self-assessment, nine students chose not to participate. For this reason, the researcher chose only to analyze the 15 self-assessments which showed results from pre- and post-intervention. The self-assessments included questions about students' opinions of their own behavior (see Table 2), and their opinions of their peers' behavior (see Table 3).

Table 2

Students' Opinions About Their Own Behavior Pre and Post-Intervention

<i>Statement</i>	<i>Pre-Intervention</i>			<i>Post-Intervention</i>		
	<i>Y</i>	<i>S</i>	<i>N</i>	<i>Y</i>	<i>S</i>	<i>N</i>
<i>I keep my hands to myself during group lessons.</i>	11	3	1	15	0	0
<i>I tell neighbors when I need them to give me space during group lessons.</i>	8	4	3	11	3	1
<i>I am quiet and do not visit with others while someone else is talking during group lessons.</i>	11	3	*	12	3	0
<i>I raise my hand for a turn to talk during group lessons.</i>	13	2	0	15	0	0
<i>When a classmate does something wrong during group lessons, I tell my classmate or wait until the teacher is available.</i>	9	3	3	8	3	4

Key: Y=Yes, S= Sometimes, N=No, *= 1 Unanswered

Review of the students' self-assessments presented some insight into the students' opinions of their own behaviors pre- and post-intervention. When reviewing the data from Table 2, all statements show an increase in answering "yes," except for the last question, which decreased by 1. Of the 15 participants, 11 (73%) students believed that they kept their hands to themselves pre-intervention. After the intervention, 100% felt they kept their hands to themselves. Another found increase to 100% was with the statement, "I raise my hand for a turn to talk during group lessons." The increase was

13% for this statement. The statement, “I am quiet and do not visit with others while someone else is talking during group lessons.” remained relatively the same, with a slight increase to “yes” by 1 more person and “sometimes” remained the same. One student did not answer on the pre-self-assessment and 0 students answered “no” for the post-self-assessment. When answering the statement, “I tell neighbors when I need them to give me space during group lessons,” 53% of students reported “yes” before the intervention, and 73% reported “yes” following the intervention. The final statement, “When a classmate does something wrong during group lessons, I tell my classmate or wait until the teacher is available.” showed little movement going from 60% to 53% answering yes, the answer “sometimes” remained at 20%, and “no” moved up from 20% to 27% of children.

Table 3

Students’ Opinions About Their Peers’ Behavior Pre and Post-Intervention

<i>Statement</i>	<i>Pre-Intervention</i>			<i>Post-Intervention</i>		
	<i>Y</i>	<i>S</i>	<i>N</i>	<i>Y</i>	<i>S</i>	<i>N</i>
<i>My classmates keep their hands to themselves during group lessons.</i>	3	11	1	6	9	0
<i>My classmates tell their neighbors when they need neighbors to give them space during group lessons.</i>	5	7	1**	7	6	2
<i>My classmates are quiet and do not visit with others while someone else is talking during group lessons.</i>	2	11	2	5	9	1

<i>My classmates raise their hand for a turn to talk during group lessons.</i>	5	9	*	7	8	0
<i>When a classmate does something wrong during group lessons, my classmates tell that person or wait until the teacher is available.</i>	5	6	4	8	6	1

Key: Y=Yes, S= Sometimes, N=No, *= 1 Unanswered

When students answered statements about peers, minimal movement occurred in their opinions post-intervention. The second statement, “My classmates tell their neighbors when they need neighbors to give them space during group lessons.” was unanswered by two students. The most significant difference was statement 3, “My classmates are quiet and do not visit with others while someone else is talking during group lessons.” with 20% of students shifting to the different opinion of “yes.” With the statement, “When a classmate does something wrong during group lessons, my classmates tell that person or wait until the teacher is available.” the answer “no” showed the most notable decrease post-intervention, moving from 4 students to 1 student. Overall, there is a consistent increase in answering “yes” about their peers, with the percentage rising between 13% and 20%. For the answers of “sometimes,” students’ opinions showed a decrease of 1 or 2 students or stayed the same.

Negative Behavior Tallies

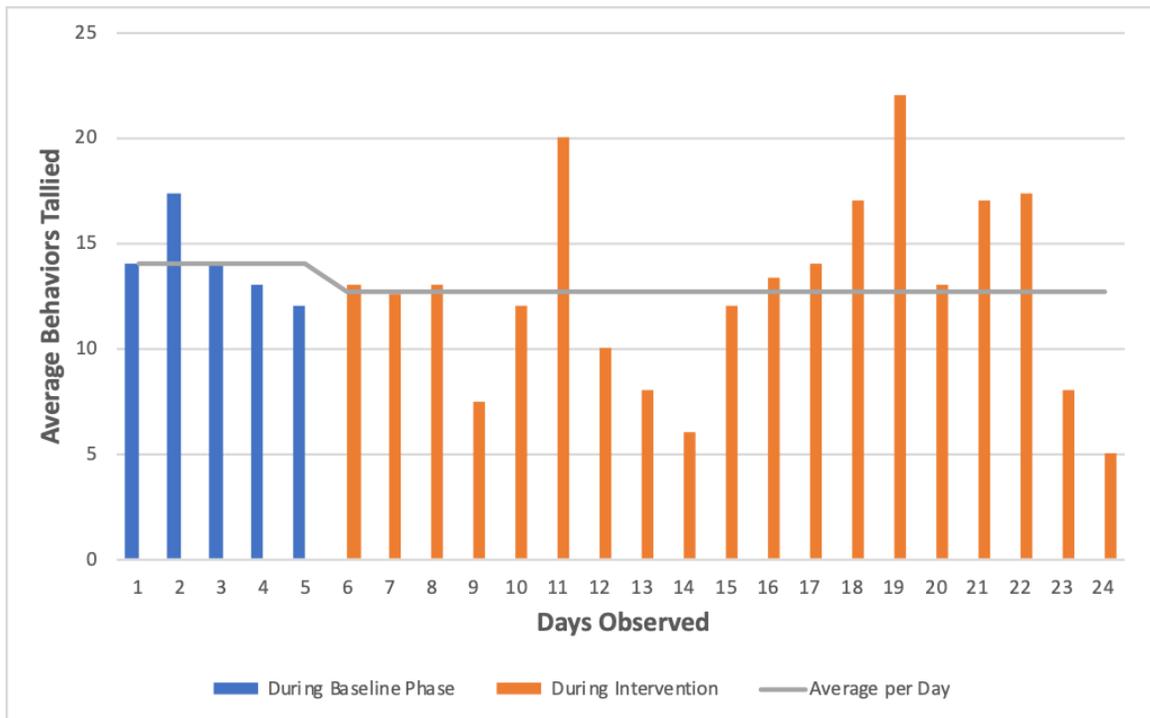


Figure 1. Behaviors Tallied Per Day with Averages. Collected data of behaviors suggests a minimal average decrease in negative behaviors after the intervention was in place.

Each lesson lasted between 10 and 30 minutes. Because of the variation in the length of lesson times, negative behavior tallies were counted for each day and averaged by 10 minutes. The most negative behaviors observed (see Figure 1) in one sitting after averages were in place, were 22 and happened on the 19th day of observation during the intervention. A close second was on day 11 during the intervention, with an average of 20 negative behaviors tallied. When the total negative behaviors were averaged for the 5-day baseline collection, the average was 14 negative behaviors per observation day. The 19 days of intervention showed an average of 12.7 per observation day, which is a decrease of 9.3% in negative behaviors.

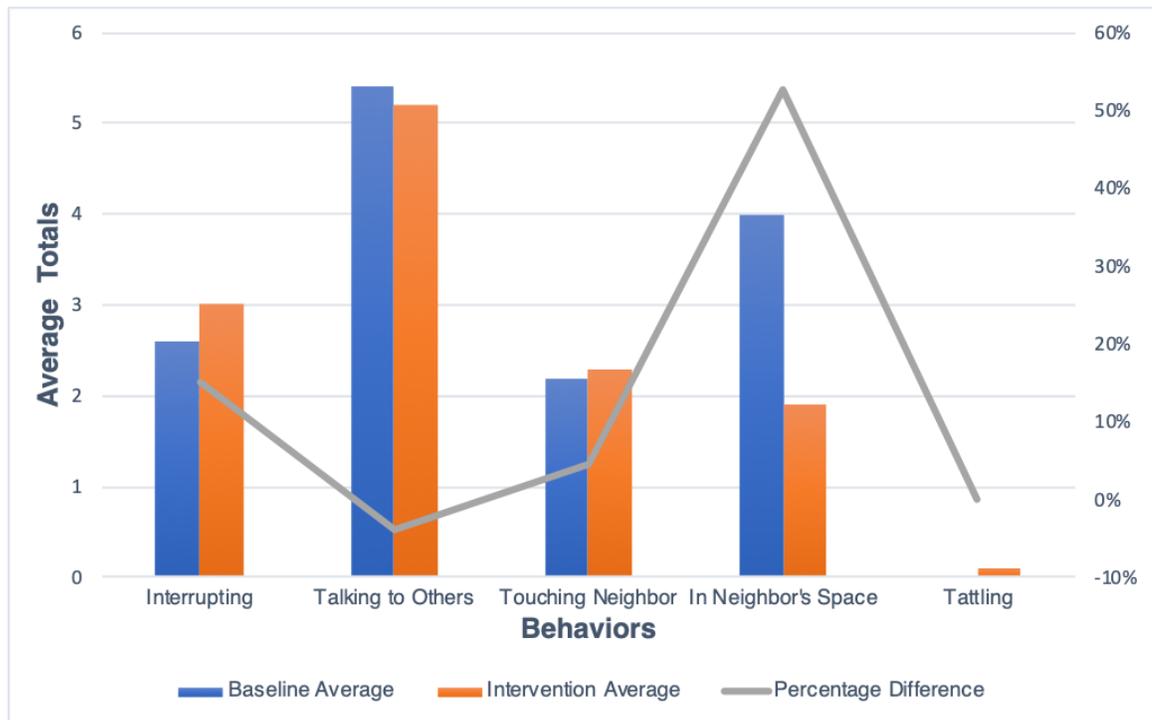


Figure 2. Negative Behaviors Before and After Intervention. Each negative behavior type and amount were compared to baseline data.

When comparing the negative behaviors pre- and post-intervention, a decrease in two negative behaviors was observed (see Figure 2). Talking to others was the behavior observed the most frequently pre- and post-intervention, and the amount decreased by 3.7% during the intervention phase. The most notable decrease was students being in a neighbor's space, which decreased by 52.5%. Interrupting showed an increase of 15%, and touching neighbors showed an increase of 4.5%. Tattling had a marginal increase from 0 to 2 tattles during the intervention, which percentage-wise is unable to be viewed in Figure 2.

Observations

The researcher could not find a correlation between most external factors (weather, visitors, minor distractions) and negative behaviors, except for weeks when the

class was preparing for a special celebration, or there was a field trip. The most significant average number of behaviors during a whole-class lesson occurred (see Figure 1) during Day 19. Day 19 was during a week when the class was preparing for their first field trip. The negative behavior of talking to others received the highest number of tallies. The second-largest occurrence of negative behavior was on Day 11 when the class was getting ready for a whole school celebration of International Peace Day. In preparation, the researcher noted observations of added energy from a few students, and there were fewer whole-class lessons that week. The negative behaviors of interrupting and talking to others were the highest and received the same number of tallies that day.

Other observations noted the days when there were higher amounts of negative behaviors, the relationship related to two main factors. One factor was students sitting next to friends and whispering to each other frequently during the lesson. The second factor was that many days a higher number of negative behaviors occurred with only a few struggling students, with the rest of the class displaying desired lesson etiquette.

Tootles

During the first week of implementing Tootles, the researcher observed that students were not writing and placing many Tootles into the bucket. After a discussion, the teacher and researcher decided that at the beginning of each lesson, the teacher would remind students to look for behaviors to Tootle, and at the end of the lesson, the teacher would remind students about Tootling. After implementing these strategies, the researcher observed an increase in the number of Tootles during the first week. In the remaining weeks, the number of Tootles reduced drastically (see Figure 3), even with the teacher reminding the students most of the time.

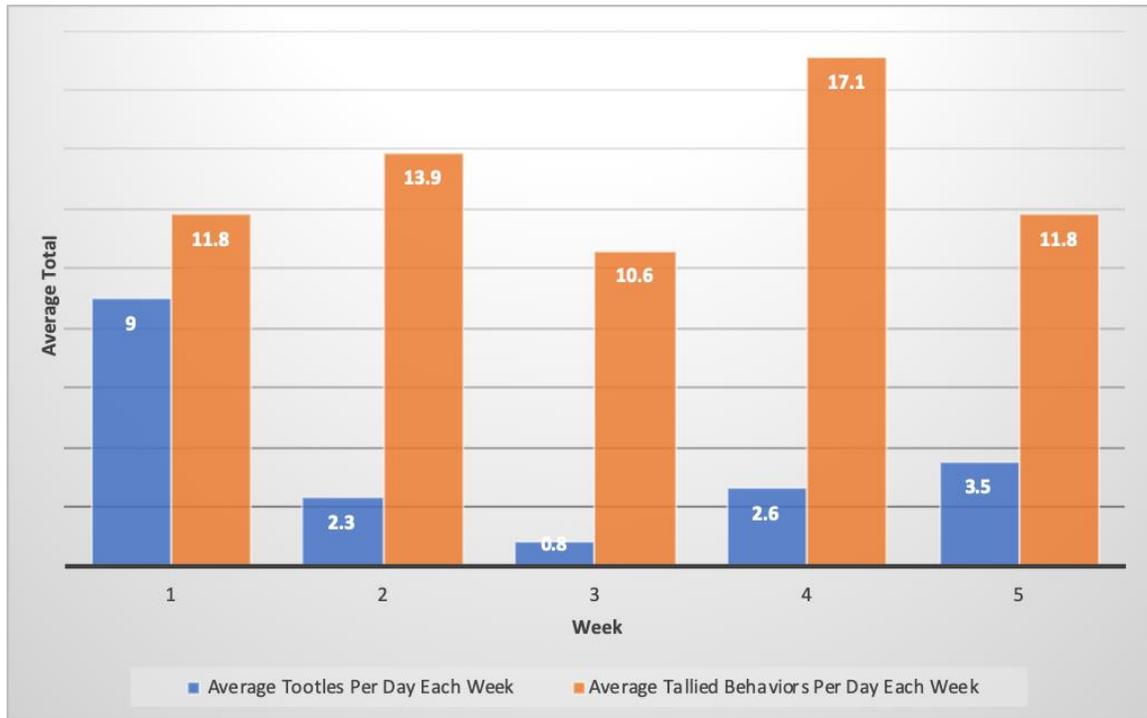


Figure 3. Average Tootles and Negative Behaviors Per Week. A comparison of the average number of Tootles each week compared to the number of negative behaviors.

Tootles were collected and counted each week. The first week produced the most Tootles for a total of 36. During Week 2, 7 Tootles were turned in. Week 3 showed the lowest amount with 4 Tootles, and Week 5 had a total of 14 Tootles given. Because the researcher was unable to observe the same amount of days and times each week, an average number of negative behaviors and Tootles per day was derived (see Figure 3). The researcher compared the data of the average amount of Tootles collected and the average number of negative behaviors observed during the intervention. The researcher discovered no reliable correlation between the two.

Discussion

The purpose of this study was to evaluate the effects of Tootling without external rewards on whole-class lessons in a lower elementary classroom. The benefits of

Tootling in schools is extensive (Skinner et al., 2000, 2002; Cihak et al., 2009; Murphy & Zlomke, 2013; Lambert et al., 2014; McHugh et al., 2016). A careful review of past Montessori training and current research guided the implementation of Tootling without external rewards (Montessori, 1967; Kohn, 2004; Lillard, 2005; Bear et al., 2017).

The researcher collected baseline data by observing children's behaviors during whole-class lessons through the tallying of negative behaviors and observation notes. After presentations on whole-class lesson etiquette and how to be a supportive community, the researcher presented how to submit Tootles. The researcher observed and tallied negative behaviors during whole-class lessons for 19 days. The students reported Tootles on each other after each whole-class lesson. They also participated in a self-assessment to see how they felt about their own actions and their peers' actions during group lessons pre and post-intervention.

The researcher could not find a relationship between negative behaviors during lessons and most external factors. An increase in negative behaviors occurred during weeks where the children had the added excitement of a special celebration or a field trip. Additionally, no relationship was derived between the number of Tootles turned in, and the number of negative behaviors observed.

Negative behaviors during whole-class lessons showed a slight overall decline of 9.3% during the intervention. The negative behaviors of "Talking to others" showed a decrease of 3.7%, and "In neighbors' space" showed a reduction of 52.5%. This decrease could be attributed to students learning the appropriate procedure for sitting for a lesson and possibly the idea that someone may Tootle to report they are appropriately sitting. Other behaviors showed a slight increase. The overall decrease of less than 10% in

negative behaviors shows minimal impact from the intervention of Tootling without external rewards.

Several factors may have impacted this study. The focus of the study and tallying of negative behaviors only occurred during whole-class lessons. The research took place during the beginning of the school year. Though this is a good time for students to learn positive social interactions, a lot of emphasis is already placed on social skills at the beginning of the year in a Montessori elementary classroom. Also, the researcher designed this study based on the social norms of the student group from the previous year. Because the classroom is a multi-aged, Montessori classroom, many social dynamics changed as some students joined the group, and some students left from the previous year. For example, tattling was an issue the year before, but as the data shows, it was not an issue this year. For best results, the researcher recommends observations of the current class during the school year and adjusting the behavior tally sheet accordingly before administering the intervention.

The researcher was not the classroom teacher for this action research and, therefore, had limited access to the classroom. The teacher was also introducing a new social curriculum to the students at the same time as this study. The introduction of another pro-social curriculum could have affected the results of this research. Although many other studies on Tootling had an outside researcher (Skinner et al., 2000, 2002; McHugh et al., 2016; Cihak et al., 2009; Lambert et al., 2015), the relationship a teacher establishes with students sets the tone for a supportive classroom community and helps children feel intrinsically motivated. Additionally, teachers could place more emphasis on Tootling if they noticed the need. The Montessori teacher could offer versions of the

lessons on the shelves like *Black Elk's Vision for Peace* (McFarlane, 2003), which might provide more motivation for the students. Tootling studies in a Montessori setting could also include Tootling during work time when the children are choosing their work from the shelves. The teacher of the classroom reported that the class is still using Tootling and that many students still enjoy the activity. Following the intervention, she also decided to assign seats during whole-class lessons and found that it assisted with some of the negative behaviors.

Twenty-four students provides a small sample for research data. Conducting the same study on a larger population and over several classrooms would provide a larger body of data to verify results. Doing this study at a school that has not experienced many pro-social lessons could also give more insight into whether the motivation is from rewards or the novelty of this type of exercise in a classroom community.

The researcher's decision to not use any external rewards to motivate the students appeared to have an impact on the students' desire to submit Tootles. The novelty of the beginning lessons may have heightened the students' awareness of others' positive behaviors, but the motivation to continue the submission of Tootles did not occur. The motivation could have been the lack of a reward, the children possibly viewing the Tootles as a reward, or possibly the act of having to write the Tootle and submit it. The researcher recommends trying this study with verbal Tootles only for the younger children to see if the effects change.

The findings from this study did not suggest that Tootling works without rewards. The children's self-assessments, however, showed an increase in students' positive opinions of themselves and their peers during whole-class lessons. The increase in

positive opinions could possibly be attributed to the students' heightened awareness of others' behaviors due to the intervention. The researcher is hopeful that this study will inspire ideas in educators who want to help children see the value in kindness and support of others without an external reward.

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Appendix A

Observation Notes

Group Lesson Observation Notes:

<p>Date: _____</p> <p>Time: _____</p> <p>Group Lesson Given: _____</p> <p>Number of students present: _____</p> <hr/> <p>Type of weather: _____</p> <p>Other External Factors:</p> <ul style="list-style-type: none"> <input type="radio"/> Visitor <input type="radio"/> Distractions <input type="radio"/> Other 	<p>External Factors Notes:</p>
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General Observation Notes:

Appendix C

Student Self-Assessment

Group Lesson Self-Assessment

Student: _____

Date: _____

Directions:

Circle  (yes),  (sometimes) or  (no) when asked the following questions:

1. I touch my neighbors during group lessons:



2. I tell my neighbors when I need them to give me space during group lessons:



3. I am quiet and do not visit with others while someone else is talking during group lessons:



4. I raise my hand for a turn to talk during group lessons:



5. I yell out to the teacher when a classmate does something wrong during group lessons:



6. My classmates touch others during group lessons:



7. My classmates tell their neighbors when they need neighbors to give them space:



8. My classmates are quiet and do not visit with others while someone else is talking during group lessons:



9. My classmates raise their hand for a turn to talk during group lessons:



10. My classmates yell out to the teacher when a classmate does something wrong during group lessons:



Appendix D

Tootle Cards

Tootling on: _____

What they did:

Your name: _____

Tootling on: _____

What they did:

Your name: _____

Tootling on: _____

What they did:

Your name: _____

Tootling on: _____

What they did:

Your name: _____

Tootling on: _____

What they did:

Your name: _____

Tootling on: _____

What they did:

Your name: _____