INCREASING POSITIVE PEER REPORTING AND ON-TASK BEHAVIOR USING A PEER MONITORING INTERDEPENDENT GROUP CONTINGENCY PROGRAM WITH PUBLIC POSTING

By

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The purpose of this study was to empirically evaluate the effects of a positive peer reporting package, namely the "Duck, Duck Tootle Intervention Program" on on-task behavior of target students and classwide on-task behavior. An ABAB withdrawal design was used to evaluate the effects of the tootling package on classwide and target students' rates of positive peer reporting and on-task behavior. Cluster sampling was employed to select a total of 10 classes for this study. Five intact regular education elementary classrooms were chosen across grade levels to serve as the experimental group. Two target students identified by each classroom teacher as having behavior and/or academic difficulties were participants in the study. This 21-day intervention was implemented in a Chapter I elementary school, located within a low-income suburb in a large metropolitan area in the southwestern United States. The students were in kindergarten through fourth grade and ranged in age from 5 to 9.6 years. Specific target behaviors were identified for each participant (e.g. out-of-place behavior, inappropriate

noise). The collected data for each of the 10 elementary school target students in this study included (a) percentage of on-task behavior, (b) percentage of target behavior, and (c) individual tootle counts. Also included in data collection were classwide tootle counts. Teacher procedural integrity data was also obtained. Results revealed that during the tootling intervention phase, in which group contingency and feedback procedures were implemented, on-task behavior increased and the mean number of individual and classwide tootles increased. Decreases in on-task behavior and mean tootles were observed during the second baseline phase. Limitations associated with the current study, implications for implementation in alternative education settings and future research are discussed.

DEDICATION

I dedicate my dissertation work to my family and loved ones. In loving honor of my grandparents, Jessie Lewis and the late Viola Lewis, Canary Shelton and the late, Charlie Shelton, Sr., I dedicate the hard work and long suffering that has resulted in a job well-done. To my grandparents-in laws, the late William and Mary Lou Lee, I dedicate the strength that it took to overcome. To my Great Aunt, the late Katie Mae Gladney, I dedicate the spirit of perseverance, that this project required event when, "times were hard". To my spiritual father, Bishop Shelton Bady, I dedicate the vision of this project that set forth the foundation for its completion. To my wonderfully loving parents, Roy and Patricia Shelton, for instilling the importance of hard work and self-confidence, whose words of encouragement, unyielding support and belief in me, with the words, "my baby can do anything", I dedicate the purpose and value of my dissertation.. To my brothers, Jonathan (Jon-Jon) and Dexter (Dex), who have been my cheering section, deeming me the big sister-super woman, "Mommy Dan-Dan" who can do anything, I dedicate the tenacity and unmovable devotion that sustained this project through it all.

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INTRODUCTION

Overview

Behavior problems in classrooms take a great deal of a teacher's allotted class time and often detract from instruction in schools. Furthermore, problematic classroom behavior continues to be the single most common reason why students are removed from the regular classroom (Cohn, 2001). Increasingly, it has become clear that the previous interventions of choice, consisting of harsh punishment and zero tolerance policies have been ineffective at improving behavioral climate in schools or preventing behavioral difficulties (Cohn).

In light of increased emphasis nationally on academic success for all children, it is critical that every student has optimal amounts of time on task. In addition, with increased awareness of the power of positive reinforcement, teachers must continue to place an emphasis on rewarding appropriate/desired behavior. Moreover, researchers and professionals suggest that teaching would be more fulfilling, rewarding, and effective and that teacher-student relationships would improve with the employment of external reinforcement (Skinner, 1968).

Skinner, Cashwell, and Skinner (2000) reported an effective and relatively simple means of improving classroom behavior in an elementary school setting. Termed

"tootling" this technique relies on a peer-monitored group contingency program. Tootling can be considered a positive form of "tattling" in that children are expected to report the behavior of their peers when they see them doing something desired. Researchers in this study (Skinner et al., 2000) trained fourth grade students in an intact general education classroom to observe and report peer prosocial behaviors. Although this study revealed that interdependent group contingencies and public posting increased rates of peer reporting, it failed to employ some important components. Specifically, researchers in this study failed to operationalize target behaviors to account for congruency across observations. Particularly, target behaviors were defined as being *helping and friendly behavior* opposed to having a more concrete and observable description, which may have compromised the accuracy of observations. Furthermore, this study did not identify target students to determine the effect of tootling on individual student behavior or its effect on classwide conduct and class cohesion. In addition, this study solely relied on student hand-written reports to track incidences of target behaviors observed. Utilization of hand-written reports alone, with failure to employ direct observations, may have compromised the integrity and validity of student reporting rates (i.e., inflation or deflation of peer reports). Limitations in recording may further fail to account for discrepancies in rates based on the legibility of hand-written reports. Finally, this study neglected to employ quantitative measures of teacher acceptability to examine teacher attitude about the time and effort required to run the tootling program. In a follow-up, Cashwell, Skinner, and Smith (2001) extended the research on the tootling program by exploring the impact of direct instruction, group reinforcement, and progress feedback on peer reporting of prosocial behaviors of second grade students. This study extended the

research on tootling by exploring the impact of direct instruction, group reinforcement, and progress feedback on peer reporting of prosocial behaviors of second grade students. Findings of the study revealed that direct instruction, group reinforcement, and progress feedback increased incidences of positive peer reporting.

Others have explored the applicability of a similar program, the Duck, Duck, Tootle Intervention package, in classrooms of younger students (i.e., second graders) and demonstrated that interdependent group contingencies and publicly posted feedback could be used to increase and maintain rates of tootling. Shelton-Quinn, Bowers, Slay, Anderson, Serio, and Henington (2002) initially introduced the Duck, Duck, Tootle intervention package, a modification of "Tootling" (Skinner, 1998). The term "Duck, Duck, Tootle" was adapted from the game, "Duck, Duck, Goose" in which children sit in a circle facing each other. One person is "it" and walks around the circle. As they walk around, he or she taps people's heads and says whether that individual is a "duck" or a "goose". Once someone is the "goose", she or she gets up and tries to chase "it" around the circle. The goal is to tap the it person before he or she is able sit down in the "goose's" spot. Shelton-Quinn et al. (2002), examined the effects of the Duck, Duck, Tootle Intervention Package, which added several components to Tootling implemented by Skinner et al. (2000) including: (a) independent contingencies (tootles as individual reinforcers) for each individual in the class; (b) individual tootle charts taped to each students' desk, which served as publicly posted individual feedback and as a means of monitoring the behavior of all children in the class; (c) stickers which were implemented as reinforcers for students observed to be following classroom rules, posted in the classroom, and also served as progress trackers to document incidences of on-task

behavior on tootle charts of all students; and (d) a simplistic, user-friendly teacher procedural checklist used to measure intervention procedural integrity. The intent of the additional procedures, relative to Skinner et al., was to enhance the success of the intervention by increasing rates of positive peer reporting. The Shelton-Quinn et al. (2002) study also noted additional desired by-products. In particular, the researchers found that, as students worked toward a common goal, class cohesion was enhanced such that students with poorer peer acceptance showed improvement in this area and the overall class climate was also improved. Unlike previous studies, the study completed by Shelton-Quinn et al. (2002), employed a more formal and structured instructional component for training students. Specifically researchers in this study implemented two 20-minute tootle training group instruction sessions and implemented specified criteria for peer reports and observed behaviors (i.e., the behavior had to be that of another classmate, peers could only report when a classmate helped another classmate or themselves, and the behavior had to occur at school). Although researchers in this study implemented observational criteria, researchers still maintained broad criteria and failed to operationalize target behaviors, which may have compromised accuracy. Additionally, the time needed for students to physically write peer behaviors may have compromised students' ability to maintain focus and concentration on assignments or instruction.

The Duck, Duck, Tootle intervention package was replicated in 2008(Shelton-Quinn, Bowers, Jones, Carpenter, Henington, & Wyatt, 2008), which examined the utility of the Duck, Duck, Tootle Intervention Package as a Tier 2 intervention for response to intervention (RtI). Findings revealed that the Duck, Duck, Tootle Intervention Package was successful at identifying students whose progress lagged behind peers and thus

involved more targeted prevention and remediation (i.e., positive peer reporting [PPR] to increase time on-task and decrease problem behavior) within the general education setting (Shelton-Quinn et al., 2008). Each of the studies to date has examined the impact of interdependent group contingencies (See Definitions and Terms, Appendix A) and public posting on positive peer reporting of incidental acts of prosocial behavior, and have found that students can be taught to engage in positive peer reporting, and that tootling increases rates of positive peer reporting. However, the impact of positive peer reporting on the on-task behavior of specific students or of entire classrooms has not yet been investigated. Studies to date have also negated the need for employing operational definitions with specific observable characteristics. Furthermore, the need to quantify tracking of instances of target behaviors observed, as well as the need to quantify teacher acceptability of the Duck, Duck Tootle Intervention program, continues to exist.

The present study is intended to extend the research on tootling as an intervention program for improving on-task behavior of targeted students using a classwide modification. For the purpose of this study, the modified intervention under investigation is termed the Duck, Duck, Tootle Intervention Package also referred to as the tootling intervention package and the tootling package.

Statement of the Problem

Despite the plethora of empirical and practical behavioral interventions, classroom management remains a top concern of educators and public school administrators (Mitchem, Young, West, & Benyo, 2001). The reason for this concern and continued focus on effective techniques for classroom management is the impact of

disruptive classroom behavior on academic learning time not only for the disruptive student, but for all students within the class. One of the most common reasons for referrals to school support personnel is the off-task behavior of students who are inattentive, distractible, and/or fail to complete assignments (Roberts, 2001). Furthermore, many educators believe that there is a collateral relationship between the difficulty level of academic tasks and off-task classroom behavior (Roberts). Thus, teachers are forced to devote a great deal of time and energy to the amelioration of disruptive behaviors rather than focusing on the facilitation of the academic and social development of their students (Theodore, Bray, & Kehle, 2004). As teachers spend more time with managing disruptive behaviors (e.g., non-compliance, inattention, off-task behaviors), instructional time and, eventually, academic achievement are adversely affected (Stage & Quiroz, 1997). Furthermore, with passage of No Child Left Behind and the latest version of Individuals with Disabilities Education Act (IDEIA; P.L. 108-446) teachers are faced with increased accountability, pressure to implement data-based interventions in least restrictive environments, and the need to ensure that all children progress through the curriculum. Thus, these multiple demands are added to teachers' already overwhelming responsibilities (e.g., attend to disruptive behavior, deliver curricula, assess student learning, and manage large classes). Consequently, classroom teachers often lack sufficient time to monitor children closely (Brown, Topping, Henington, & Skinner, 1999). Moreover, many interventions currently employed in classrooms tend to focus on unacceptable behaviors, target the behavior of individual students, and are often time consuming and impractical for teachers to implement (Skinner, Cashwell, & Dunn, 1996). Studies further indicate that traditional, reactionary

school discipline procedures (i.e., punishment-based & exclusionary) are generally ineffective in either reducing challenging behaviors or increasing desired behavior (Morgan-D'Atro, Northrup, LaFleur, & Spera, 1996). In light of increasing frequency and intensity of disruptive behaviors in schools nationwide (Martin, Lloyd, Kauffman, & Coyne, 1995), policymakers and school practitioners alike are increasingly considering the benefits of teaching and supporting prosocial behaviors to decrease disruptive behaviors and increase academic success.

As a result of these events, empirically-based programs such as Positive Behavioral Intervention Supports (PBIS), an empirically validated function-based approach to eliminating challenging behaviors, has gained national attention and are purported to encourage replacement of these problematic behaviors with prosocial skills (Cohn, 2001). Consequently, emphasis on such approaches indicates a continuing need for proactive, positive discipline procedures for all students (Sugai, Sprague, Horner, & Walker, 2000). Particularly, studies indicate that urban schools tend to face challenges with limited resources and large numbers of students, many of whom are living in poverty or violence-prone environments (Netzel & Eber, 2003). Furthermore, growing research on PBIS has shown successful results in urban elementary school settings (Netzel & Eber; Warren et al., 2003). As well, the significant changes to the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, have focused more attention on pre-referral interventions, with schools allowed to allot 15% of IDEIA funding to pre-referral interventions.

One approach to teacher-monitoring of student problem behaviors is to train students to manage their peers' behaviors. It is apparent that this research is influenced

by common educational practices. For example, some teachers may use classroom leaders to monitor peers; whereas, others may separate or pair students in their discipline plans or teaching accommodations. Ervin, Miller, and Friman (1996) formally evaluated a strategy sometimes used by teachers of children who are neglected or rejected in their classrooms (i.e., asking other students to "be nice" or show interest in the targeted children). The program, coined as positive peer reporting (PPR), involved teaching and rewarding classmates for providing descriptive praise to socially isolated youth during structured daily sessions. PPR is a relatively simple procedure that has been used to enhance peer interactions of students who are socially rejected or neglected (Bowers, McGinnis, Ervin, & Friman, 1999).

Grieger, Kaufman, and Grieger (1976) published the first study in a line of research documenting the benefits of having peers report prosocial behavior of peers. This study examined kindergarten students' ability to identify a peer who had done something nice for them during play period. Students, who were identified by their peers for doing something nice, were allowed to select a happy face. Findings of this study revealed that opportunities for peers to report prosocial behaviors resulted in increased cooperative play and decreased aggression in target children. Peer monitoring may be intended to either reduce inappropriate behaviors (i.e., tattling) and/or increase appropriate behavior (i.e., tootling). With slight modification to accommodate classwide implementation, tootling may be such an approach. It is likely that this modified version of tootling will allow teachers to intervene with students who are demonstrating problem behaviors and/or academic difficulties, and teach all children skills that promote

responsible and appropriate classroom behavior; thus addressing the greater need for empirically validated interventions that proactively promote positive behavior.

Purpose of the Study

As problem behavior in the classroom continues to be the single most common reason students are removed from regular education classrooms (Cohn, 2001), the need for empirically validated, efficient and effective pre-referral interventions that increase prosocial behavior or appropriate classroom behaviors persist. Tootling, a type of PPR intervention package, is one that has been found to be effective in teaching children to identify and report instances of positive peer behavior. The purpose of the current study was to determine the efficacy of the Duck, Duck Tootle Intervention Program, which consists of employing interdependent group contingencies to reinforce PPR of on-task behaviors and public posting to increase students' reporting of their classmates' on-task behavior in individuals and in classwide settings, and to increase the occurrence of on-task behaviors in target students.

Objectives of the Study

The present study was designed with the following objectives in mind related to measurement of the effectiveness of tootling, interdependent group contingencies, public posting, and on-task behavior:

1. to extend the research on the Duck, Duck Tootle Intervention Package and its utility in the classroom setting,

2. to evaluate the impact of interdependent group contingencies and public posting on rates of PPR of on-task behaviors in a general education classroom setting,
3. to investigate the impact of interdependent group contingencies and public posting on rates of positive peer reporting on individual target children's on-task behaviors,
4. to investigate the impact of tootling on the incidence of on-task behavior in target children in a general education classroom setting,
5. to investigate the impact of the Duck, Duck, Tootle Intervention Package on on-task behavior across grade levels in general education settings,
6. to investigate the impact of the Duck, Duck, Tootle Intervention Package on on-task behavior of an entire class, and
7. to investigate the feasibility and acceptability of the Duck, Duck, Tootle Intervention Package in a general education classroom setting.

Significance of the Study

School psychologists are at the forefront of providing assistance to teachers in the development of effective practices both to prevent and remediate behavior and academic problems in the classroom (Little, Little, & Gresham 2004). Without effective behavior management, a positive and productive classroom environment is impossible to achieve (Little et al.). Despite the existence of effective, research-based behavior management tools, the need for empirically studied, cost-efficient, and time-effective intervention

strategies that are acceptable to teachers and feasible to implement in classroom settings remains a priority for school psychologists working in school settings.

Summary

Inappropriate and disruptive behavior inside and outside the classroom is of concern to educators, psychologists, parents, and the general public. Such behavior can escalate into violence, for example, and, at a minimum, inhibits the learning and social activities of others. Historically, some researchers have investigated the reasons behaviors occur (e.g., the function of the behavior) to assist them in developing an intervention that would encourage the individual to seek appropriate means for dealing with the problematic situation in the future. The current study, therefore, presented an intervention that may resolve problem behavior in the classroom in a proactive manner.

The Study

The present study used a peer-monitoring interdependent group contingency program with public posting to increase positive peer reporting and on-task behavior in general education students, identified as having behavioral and or academic difficulties in the classroom. The intervention selected was the Duck, Duck Tootle Intervention Program. During each phase of the intervention, the number of tootles for the target children and the entire class was monitored. Additionally, the on-task behavior of the target students and a comparison peer was also tracked.

The following steps were implemented during the study. Phase 1 involved the collection of baseline data (i.e., percentage of on-task behavior per target child and peer

comparison). In Phase 2, students and their teacher were taught to identify on-tasks behaviors and employ the PPR component (i.e. tootling) of the tootling package across four days. Phase 3 involved implementation of the complete Duck, Duck Tootle Intervention Program (i.e., tootling, group contingencies, and public posting).

Hypotheses

The following hypotheses were tested:

1. Classwide rates of PPR will increase when the Duck, Duck Tootle Intervention Program is implemented.
2. The Duck, Duck, Tootle Intervention Package will effect positive change in each of the 10 target students:
    a. total PPR for target students will increase following intervention implementation for target students,
    b. disruptive behavior will decrease,
    c. on-task behavior will increase following implementation, and
    d. target behavior of referred student will approximate the behavior of non-referred students.

CHAPTER II

LITERATURE REVIEW

INTRODUCTION

Identifying effective interventions for behavior problems exhibited by school-age children within the school setting continues to be a top priority of school psychologists and educators (Freeman & Dexter-Mazza, 2004). School psychologists, as a group, continue to remain committed to identifying, preventing, and remediating behavior problems in students (Reschly & Ysseldyke, 1995). To this end, mental health professionals have developed a number of classroom interventions to improve classroom behavior (Mitchem, Young, West, & Benyo, 2001).

Although various interventions have been designed to promote classroom management, many believe the most effective model for producing behavior change and preventing the development of maladaptive behavior is the behavioral model (Wielkiewicz, 1995). In addition, behavioral approaches have been found to be very effective in developing effective instructional strategies (Akin-Little, Little, & Gresham, 2004). Furthermore, behaviorally based instructional strategies and practices continue to warrant teacher preference because they tend to produce desired outcomes more often and consistently than do other instructional strategies (Morgan & Jenson, 1988).

Consequently, teachers continually request training in classroom management techniques based on behavioral approaches from school psychologists (Maag, 1999; 2001).

The following sections provide an overview of behavioral approaches to behavior and behavioral intervention that may be used in the classroom and by teachers to improve student behavior and academic performance.

Rule-Governed Behavior versus Contingency-Governed Behavior

Verbalizations can have either verbal or nonverbal consequences; nonetheless, the consequence is usually a change in the listener's behavior (Catania, 1998). Behavior which is mainly determined by verbal antecedents is called verbally-governed behavior, rule-governed behavior or instruction-following-behavior and are those behaviors in which contingencies operate as a result of following of instructions. According to Skinner (1974) rules can exert rapid control over behavior; and, following instructions, heeding warnings, and obeying laws (all examples of rule-governed behavior) are themselves influenced by consequences. Contingency-governed behavior or operant behavior is defined as behavior that has been shaped by its consequences (Skinner, 1969). Contingency-governed behavior is often used to describe responding that is not occasioned by verbal behavior (i.e., verbally governed behavior; Catania, 1998). Studies further suggest that a person following instructions may behave differently from a person who has been exposed to contingencies described within instructions (Skinner, 1974). Contingency-governed behavior is based on the ideology that instruction following can be controlled by its consequences. Particularly, Bandura (1969) argued that the communicator's influence depends on the likelihood that the source's behavioral

recommendations will lead to favorable consequences. For the purpose of the current study, tootling represents a contingency-governed behavior, based on the concept that students' behavior, including rule or instruction-following is based on consequences (i.e., tootles, classwide reinforcement). Having laid this foundation for contingency-governed behavior, the following section provides information on relative behavioral interventions.

Behavioral Interventions

Behavioral interventions, according to Kazdin (1988), are based on operant learning principles and have a long history of documented use in addressing behavior problems in children (Kadzin). Such interventions have been successful in reducing disruptive behavior and off-task behavior, while increasing academic productivity (Rapport, Murphy, & Bailey, 1982). Further, it has been hypothesized that behavioral interventions increase the overall level of appropriate classroom behavior by "capturing" children's attention through enhancement of the stimulation or motivational value of the task at hand (DuPaul & Stoner, 1994). These behavior strategies are characterized by one of two approaches: (a) consequent-based interventions or (b) antecedent-based interventions. These two approaches are discussed in the following sections.

Consequent-based Behavioral Interventions

A great many interventions have long been characterized as consequent approaches (Kern, Choutka, & Sokol, 2002). Many consequent-based strategies foster positive classroom behaviors. These interventions include token economies, contingency contracts, cognitive-behavioral therapy, response cost, peer-mediated interventions,

social skills interventions, family involvement, and time-out (National Information Center for Children and Youth with Disabilities [NICHCY], 1999). Consequent-based interventions take into account the events, stimuli, and activities that follow and maintain behaviors.

In efforts to alleviate behavior problems in the classroom, many educators employ interventions in the classroom setting that are intended to focus attention and consequences on inappropriate behavior (Skinner et al., 2000). Specifically, in most classroom and school settings, interventions are aimed at preventing or reducing instances of student antisocial behaviors (Skinner et al.). Often punishment-based in nature (i.e., interventions intended to decrease incidences of inappropriate behavior), these systems are typically composed of rules and regulations describing unacceptable behaviors and punishment procedures for students who engage in such behaviors. In other words, most punishment programs used by educators focus on incidental inappropriate behaviors, and often times students are used to help implement these programs by monitoring and reporting classmates' behaviors--tattling (Skinner et al.). Although shown to be effective, these proactive punishment systems have many limitations and negative side effects, such as maladaptive strategies for avoiding punishment (e.g., absenteeism, unnecessary visits to the counselor; Martin & Pear, 1992). An alternative approach to behavior management is antecedent-based interventions.

Antecedent-based Behavioral Interventions

Labels that have been applied to behavior guided by verbal antecedents are verbally governed and rule governed. Unlike consequent-based interventions, antecedent-

based interventions, although also considered proactive and preventive approaches, are used to reduce the probability of the occurrence of problem behaviors by manipulating aspects of the environment, rather than imposing a consequence following a behavior (Kern et al; 2002; Luiselli, 1998). Such environmental manipulation involves altering variables or conditions that occur antecedently or prior to, occurrence of the problem behavior so that those conditions are no longer present in such a way that provokes or facilitates the problem behavior (Kern et al.). In other words, antecedent interventions focus on the events, stimuli, objects, and activities that precede and trigger behaviors (Duhaney, 2003). Further strengthening the efficacy of this approach is the fact that it can reduce or delineate the need for punitive consequential procedures as an added boost to the intervention procedure (Kern et al.).

Researchers investigating the effectiveness of antecedent-based interventions have shown that these interventions decrease problem behaviors. Investigators have manipulated antecedent conditions such as the student's preferences for classroom activities, interests, curricula, and academic assignments to increase on-task behavior (Horner, Day, Sprague, O'Brien, & Heatherfield, 1991; Kern et al., 2002). For example, interspersing additional brief—thus, conceivably easier—math problems among more complex ones has been shown to increase on-task behavior during independent seatwork of an elementary school student (McCurdy, Skinner, Grantham, Watson, & Hindman, 2001). Researchers have also found that on-task levels and accuracy of responding improved when academic stimuli were delivered at a more rapid pace (Darch & Gersten, 1985).

Other antecedent-based interventions have focused on manipulation of classroom activities and academic variables. Manipulating the response activity, such as the use of briskly paced guided practice, choral responding, and response cards, seems to be effective in reducing behavior problems (Munk & Repp, 1994). Adjustments to the difficulty or interest level of the task are also likely to reduce negative behavior. Such manipulations as intermixing easier (Skinner, Hurst, Teeple, & Meadow, 2002) or more preferred items (Noell, Whitmarsh, VanDerHeyden, Gatti, & Slider, 2003) with more difficult or less preferred items within a task or modifying the task effort (Kern et al., 2002) appears to reduce inappropriate behavior as well. Giving students choices (Dunlap et al., 1994) and embedding low-probability with high-probability tasks (Belfiore, Lee, Vargas, & Skinner, 1997) have all been shown to increase on-task behavior and correct work completion while decreasing inappropriate behavior (Witt, VanDerHeyden, & Gilbertson, 2004).

Pre-Referral Interventions

Implementation of pre-referral interventions has become a standard practice in addressing problem behavior in the regular education classroom. Prior to the evaluation of a student evidencing behavior problems, effective interventions are tried and the results are used to clarify needed intervention qualities to promote change and to make identification and service delivery decisions. Particularly, 34 out of the 50 states require or recommend some form of pre-referral intervention prior to placement in special education (Graden, Zins, & Curtis, 1988). Furthermore, the convergence of several reforms within special education has channeled focus on the provision of services in

regular education classrooms. Specifically, implementation of pre-referral interventions help to ensure that children are educated in the least restrictive environment and that every effort has been made to accommodate children in the general education setting. Furthermore, utilization of a pre-referral intervention helps to reduce the possibility that teacher referral, the single most variable contributing to special education placement, does not derive from whim or lack of tolerance (Witt, 1990). Recently with the passage of No Child Left Behind, educators have embraced the tiered model. Brown-Chidsey and Steege (2005) and the National Association of State Directors of Special Education (National Association of State Directors of Special Education [NASDE]; 2005) have identified pre-referral interventions as Tier II and Tier III interventions.

Positive Behavioral Intervention Supports

Positive Behavior Intervention Supports (PBIS), also known as Positive Behavior Supports, is an empirically validated, function-based behavioral systems approach to design effective environments for teaching and learning to occur (Cartwright & Boyle, 2006). PBIS focuses on creating and sustaining school-wide (primary), classroom (secondary), and individual (tertiary) supports that improve results for all students by making problem behavior less effective, efficient, and relevant, and desired behavior more functional (Cartwright & Boyle). The goal of PBIS is to eliminate challenging behaviors and replace them with prosocial skills (Cohn, 2001). Reports reveal that PBIS reduces the need for more intrusive or aversive interventions that can lead to both systemic as well as individualized change (Cohn). According to IDEA 1997, PBIS is the recommended form of intervention for dealing with challenging behavior in children with

disabilities. PBIS is designed to target individuals or entire schools, as its focus is on contexts and outcomes of behavior. In particular, PBIS can be implemented on one of three levels (i.e., primary, secondary, and tertiary). Level One of PBIS is implementation of a school-wide intervention, which is termed primary intervention (Cartwright & Boyle). Intervention at this level is designed to be more proactive in preventing problem behavior occurrences, thus creating a climate and culture that supports and promotes positive student behavior. Primary interventions address behavior under a school-wide approach, in which all levels of the school system, including physical locations (i.e., classroom, cafeteria, gym, playground) and personnel (i.e. teachers, administrators, paraprofessionals, support staff) are involved in the prevention efforts (Cartwright & Boyle). The next level of PBIS is secondary, in which interventions are implemented in the classroom where targeted group interventions are put into place for the small number of students who need more support (i.e., small group re-teaching, small group social skills instruction).Tertiary involves implementation of intensive, individualized interventions. Such interventions may include individualized education plans (IEPs) and/or individualized behavior support/intervention plans (BIPs) that are developed based on functional behavioral assessment (FBA). Due to the fact that tertiary interventions are student-specific, there are no specific intervention strategies for tertiary prevention efforts (Cartwright & Boyle).

PBIS emphasizes aspects of the student and a change in environmental variables such as physical setting, task demands, curriculum, instructional pace, and individualized reinforcement (Cohn, 2001). The most crucial aspect of PBIS is the FBA, which reveals critical information about the antecedents, consequences, and frequency of challenging

behavior. Research over the past 15 years has found PBIS to be effective in promoting positive behavior in students in schools (Cohn, 2001). Furthermore, schools that implement system-wide interventions report increased academic engagement time and improved academic performance. Further studies report that schools employing system-wide interventions for problem behavior prevention indicate a twenty to sixty percent decrease in office referrals (Cohn). During 2001, the Texas Behavior Support Initiative (TBSI) was designed to build capacity in Texas schools for the provision of positive behavioral supports to all students, especially those with challenging behavior problems (Texas Behavior Support Initiative, 2005).

Responsiveness to Intervention

Although it is beyond the scope of this manuscript to provide a detailed exploration of the RtI model, it is important to recognize tootling as either a tiered intervention within the RtI model. The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA; 2004) provides school districts with a choice to use a version of RtI when making special education decisions. RtI is a multi-tiered service-delivery model designed for organizing planned sequences of prevention and empirically validated interventions ordered by intensity (Barness et al., 2006). Notably, RtI is most frequently viewed as a three-tiered model, similar to those used for service-delivery practices such as positive behavioral support (National Research Center on Learning Disabilities, 2005). Tier I refers to primary instructional and behavioral supports for all students in the general education classroom. Tier II is small group intervention for students whose progress lags behind peers and thus involving more targeted prevention

and remediation within the general education setting. Finally, Tier III is when a comprehensive evaluation of the effectiveness of an intensive intervention is conducted. If this intensive intervention fails to adequately address concerns, a referral is made for a comprehensive assessment (sometimes referred to as tier by some states and/or models) to determine special education eligibility and related services (National Joint Committee on Learning Disabilities, 2003). Thus, in an RtI model, a student is exposed to a high quality, evidence-based intervention and the student's responses are documented (Ardoin, 2006).

In summary, the RtI framework focuses on prevention, which is used in the following two ways: (a) long-term prevention of risk and (b) specific prevention of challenging behaviors through instructional and antecedent environmental interventions (Nielsen & McEvoy, 2004). At the heart of sound RtI programming are classwide interventions, which are based on effective instruction and applied behavior analysis (Wolery, 2005). See Brown-Chidsey and Steege (2005) and NADSE (2005) for specifics of the RtI model.

Effective Behavior Interventions

Many studies have documented the efficacy of a wide range of classroom interventions (Abramowitz & O'Leary, 1991). Extensive research has clearly demonstrated that positive reinforcement is highly effective in addressing problem behaviors (Dawson, 1995). Many studies investigating behavioral interventions are based on contingency management, while several deal with antecedents, namely modification of the task and of the classroom environment (Abramowitz & O'Leary, 1991). Specific

behaviors that have responded successfully to positive reinforcement interventions include sustained attention, activity level, time on-task, response accuracy, disruptive behavior, and social skills (Fiore, Becker, & Nero, 1993). Several factors influence the use of specific behavioral interventions. Particularly of consideration is the acceptability of treatment procedures to teachers, time efficiency and cost-effectiveness (Mueller, Edwards, & Trahant, 2003). Previous research has suggested that positive reinforcement strategies are acceptable to teachers (Gresham, 1989; Lentz, Allen, & Erhardt, 1996; Witt, Martens, & Elliot, 1984). Various reinforcement interventions that have shown effectiveness will be discussed below.

Token Economies

Token economies employ the use of secondary "token" reinforcers for demonstrating appropriate target behaviors, within which the teacher gives immediate feedback regarding performance (Filcheck, 2003). This reinforcement system allows teachers to use more flexibility as to what rewards can be earned and when they will be given. It can be used with an individual student or with groups of students, with different target behaviors and reinforcers assigned to each student (Filcheck). Particularly, tokens are awarded to, or removed from (as in a response-cost version of token economy, see below for more detail), children contingent upon demonstration of desired behaviors or no demonstration of undesirable behaviors (Abramowitz & O'Leary, 1991). These tokens or points are later exchanged for activities, objects, or privileges (Filcheck).

Token economies can be used as overall management approaches for an entire classroom or as special programs for selected children who are experiencing difficulties.

In addition, token economies can encompass a wide variety of academic and social behaviors or can specifically target one or two selected behaviors (Filcheck).

Token economies, used in conjunction with group contingencies, have also shown success. For example, the Good Behavior Game developed by Barrish, Saunders, and Wolf (1969), is an interdependent group contingency often used for decreasing disruptive behavior in the classroom, that has been shown to be effective (Harris & Sherman, 1973; Medland & Stachnik, 1972). This technique involves a class to be divided into two teams with a point given to a team for any inappropriate behavior displayed by one of its team members. The team with the fewest number of points at the game's conclusion each day wins the group reward An academic modification of the Good Behavior Game, termed, Good Classwork Game, was found to be effective in increasing work completion and decreasing off-task behaviors in elementary students (Mudgal, 2004). Research indicates that GBG is an effective, easy to implement, time efficient, and widely used classwide intervention (Barrish et al., 1969; Sherman, 1973).

Response Cost

Response cost is a behavioral intervention in which earned tokens are withdrawn when undesirable behaviors occur. This intervention has been found to be particularly effective in increasing attention to task and work completion, and appears to be particularly effective when used in conjunction with medication (Fiore et al., 1993). Rapport, Murphy, & Bailey (1982) examined a response cost system where teachers and students were supplied with a card stand or an electronic apparatus that served to display point totals earned by the child. Points were earned for on-task behavior on a fixed-

interval schedule and deducted following incidents of off-task behavior. The teacher then awarded or deducted points by flipping the cards on a card stand (or by pressing a button on a remote control device). The children afterward changed their respective card to match the teacher's, such that the students automatically received or lost points on the electronic apparatus. Thus, "token" delivery and deduction were employed via remote, allowing the teacher to continue to engage the class in academic instruction. At the end of the academic period, each student's total points were cashed "cashed in" for various exchange reinforcers such as free time (DuPaul, Stoner, Tilly, & Putnam, 1991).

Peer Mediated Behavioral Interventions

Studies have shown that students often selectively attend to peers who are misbehaving, inadvertently reinforcing the child's misbehavior (Christy, 1975; Solomon & Wahler, 1973). Further findings reveal that children as young as preschool-age can accurately fulfill a wide range of intervention duties including: (a) observing and evaluating target children's responses (Carden-Smith & Fowler, 1983), (b) modeling desired behaviors (Peck, Apolloni, Cook, & Raver, 1978), and (c) providing social antecedents (Strain, Shores, & Timm, 1977). Peer-mediation, a behavioral technique that uses peers to improve behaviors of classmates, is particularly promising as an intervention to promote prosocial behaviors (Kamps, Gonzalez-Lopez, Potucek, Kravits, Kemmerer, & Garrison-Harrell, 1998) Research findings indicate that peer mediated interventions have become increasingly popular in education settings (Strain, 1981). Thus, research in this area has generated a number of exciting and promising findings (Kohler, Schwartz, Cross, & Fowler, 1989).

Peers have been described as ideal agents for implementing behavioral interventions given their large numbers, continual presence and probable effectiveness (Strain, Cooke, & Apolloni 1976). Furthermore, in the natural classroom environment, peers are one of the most powerful sources of behavioral change agents in academic and social settings (Gable, Arllen, & Hendrickson, 1994). Change agents may serve as a cue or as an aversive stimulus to facilitate academic accomplishments, reduce instances of deviant and disruptive behavior, increase work and study skills, enhance work production and efficiency, and teach social interaction skills (Greenwood & Hops, 1981; Salend, Reeder, Katz, & Russell, 1992; Salend, Reid-Jantzen, & Giek, 1992). In addition, studies indicate that when peer attention is manipulated for purposes of intervention, sizeable positive behavior changes can result (Cardin et al., 1984; Solomon & Wahler, 1973; Strain et al., 1976).

Thus, peer monitoring has been shown to be an effective behavior technique to address classroom behavior. The following section describes peer monitoring and several nuances of that monitoring process.

Peer Monitoring. Peer monitoring, a peer mediation strategy that entails training students to monitor another's behavior and to reinforce positive behavior, has been shown to be equally effective, or superior to teacher-administered procedures (Greenwood, 1981), and is less obtrusive, more cost-effective, and more generalizable than individualized teacher-directed procedures (Krouse, Gerber & Kaufman, 1981). Furthermore, peer monitoring programs are not only time-efficient, but also allow teachers to reduce their management role and increase their teaching and planning time

(Fowler, 1986). Peer monitoring can take many different forms, yielding different types of recording procedures, such as: (a) event recording, when a monitor notes if a specified event occurs; (b) frequency recording, when a monitor keeps tally of the number of event occurrences; (c) duration, when monitors note the amount of time a subject spends responding appropriately; and (d) narrative, when monitors provide verbal descriptions of observed events.

A series of studies conducted by Smith and Fowler (1983) and Fowler (1986), in which kindergarten children were assigned as team captains and distributed points on cards depicting pictures of transitions to peers and to themselves, for appropriate behavior, showed peer monitoring procedures to be effective in decreasing disruptive behaviors during transition activities. In another study of peer monitoring, a procedure termed Checking Chums, a simplistic peer monitoring procedure was used to examine the effect of peer monitoring on learning behaviors and was found to increase observed on-task behavior in target children from 45% to 85% (Brown et al., 1999).

Thus, peer monitoring has been shown to be effective in increasing appropriate behavior in the classroom. The following section describes a refined version of peer monitoring which includes peer reporting.

PPR. PPR is a peer monitoring technique that is based on peer approval, which is a powerful source of prosocial influence. PPR is a teach and reward procedure in which classmates provide descriptive public praise to socially isolated peers in structured daily sessions (Moroz & Jones, 2002). PPR was formally evaluated by Ervin et al. (1996), who examined its effects on increasing the social acceptance of an adolescent girl in a

classroom setting. Students were given points, using a token economy system, for making positive reports of the peer. Findings of the study revealed that positive interactions and peer acceptance increased, while negative interactions were nearly eliminated during the intervention phases. Jones, Young, and Friman (2000) showed the positive impact of PPR on social acceptance in three adolescents exhibiting delinquent behaviors in a classroom setting, revealed an increase in prosocial behaviors and social status. Additionally, the study examined the social validity of PPR with classroom teachers and found it to be highly acceptable and easily implemented.

In summary, PPR successfully gives rejected students an incentive to behave appropriately for positive attention while encouraging other students to note the target student's "good" or appropriate behaviors rather than simply focusing on negative actions (Ervin et al., 1996). PPR also teaches the social skill of learning to praise others. The next section describes a peer reporting technique which incorporated a number of additional behavior techniques.

Tootling. Tootling is a form of PPR that consist of an intervention package that uses, interdependent group contingencies (see the next section for specifics on group contingencies), independent contingencies, and public posting, to teach students to observe and report peers prosocial behaviors (Skinner et al., 2000). Tootling is derived from the term "tattling," which has negative connotations. In tootling, students report their classmates' prosocial–positive–behaviors (Skinner et al.). Colloquially, tootling is similar to tooting one's own horn in that positive behaviors are mentioned and reported;

however, tootling, as a behavioral intervention, is a report by an individual of the behavior of a peer rather than of his or her own behavior (Skinner et al.).

The premise of tootling is that it indirectly reinforces higher rates of PPR of incidental prosocial as opposed to antisocial behaviors (Cashwell et al., 2001), a critical necessity in classrooms. It has further been suggested that a tootling program may also help prevent and remedy relationship difficulties and social skill performance problems by supporting prosocial behaviors within educational environments and enhancing students' perceptions of their peers (Cashwell et al.).

Skinner and colleagues (Cashwell et al., 2001; Skinner et al., 2000) conducted formal tootling programs with second and fourth grade students. They found that students engaged in tootling behavior when an interdependent group-oriented contingency is in place. Specifically, Skinner et al. noted that the following components contributed to increased tootling in fourth grade students: (a) direct instruction in peer monitoring of prosocial behaviors, (b) interdependent group contingencies as reinforcers of peer reporting, and (c) public progress posting.

Cashwell et al. (2001) reported that second grade students were taught to tootle–identify and report the day-to-day prosocial behaviors of peers while interdependent group-oriented reinforcement and progress feedback procedures were used to increase PPR of incidental prosocial behaviors. Results indicated that direct instruction could be used to teach second grade students to report peers' prosocial behaviors and that interdependent reinforcement and public posting procedures increased and maintained these behaviors (Cashwell et al.).

Contingency Management of Behavior

Over the years, contingencies have been used to reinforce desired behavior in classroom settings (Skinner, Skinner, & Cashwell, 1998).). A contingency may be thought of as a three-term behavioral construct consisting of an antecedent stimulus (A), a response or target behavior (B), and a consequence (C). Effectiveness is the key component holding these three concepts together and accounting for their effectiveness (Skinner, Skinner, & Cashwell, 1998). The effectiveness of the contingency can also be conceptualized as an "if-then" relationship (Albers & Greer, 1991; Sulzer-Azaroff & Mayer, 1986). In other words, *if* the target behavior is achieved in the presence of appropriate antecedent stimuli conditions, *then* a consequent event follows. If this consequent event is punishing, then it decreases the probability that the target behavior will be achieved (Skinner et al., 1998).

Three types of contingencies or consequences were described by Skinner, Skinner, & Cashwell (1998).: (a) individual contingencies, (b) independent group-oriented contingencies, and (c) interdependent group-oriented contingencies. Both independent and interdependent group-oriented contingencies such as popcorn parties, movies, and extra recess time have been used in educational settings for a long time (Skinner et al, 1998). Each of these types of contingencies will be described below.

Individual contingencies. An individual contingency allows each aspect of the three-term contingency– ABC– to vary across students, with contingencies based on each child's unique needs (Skinner, Skinner, & Cashwell, 1998). Although use of individual contingencies permits both antecedent and consequential variables to be tailored to meet

an individual student's idiosyncratic needs, goals, strengths, weaknesses, and interests, several problems are evident when trying to implement individual contingencies in a school setting.

The greatest problem in implementing individual contingencies in the classroom are the managerial difficulties that arise from simultaneously managing many different individual contingencies opposed to those used with the entire class (Fantuzzo & Rohrbeck, 1992; Salend & Lamb, 1986). Further, such individualized teacher-directed procedures typically require teachers to spend precious time policing interactions within the class (Schmuck & Schmuck, 1997). Additionally, individual contingencies tend to be less cost-effective and more intrusive and less generalizable than other procedures (Krouse, Gerber & Kauffman, 1981). The unwelcomed idea of seemingly preferential treatment may also arise amongst students as they become aware of selected children's individualized reward system for behavior modification (Davies & Witte, 2000). For example, establishing contingencies for one student but not for others can make students and their behaviors conspicuous; possibly resulting in derogatory labeling (e.g., suggesting the student lacks intelligence or academic ability). Additionally, some peers may consider it unfair for a classmate with behavior problems to be rewarded while other students without behavior problems are ignored (Skinner et al., 1996). Treating students differently can also cause problems among educators, students, and students' families as individual students may feel picked on, their parents may resent the time necessary to meet with educators, and evidence of racial or ethnic bias may appear (Skinner, Skinner, & Cashwell (1998). Furthermore, studies indicate that teachers prefer interventions that are used with the entire class and require less time (Fantuzzo & Rohrbeck, 1992;

Kratochwill, Elliot & Rotto, 1995; Tankersly, 1995). For example, the task of monitoring, tracking, evaluating, and refining many different independent contingencies to manage each child's behavior appears to be extremely difficult. Finally, most educational administrators lack both the time and resources necessary to monitor, record, analyze, and deliver individual contingencies to each pupil (Davies & Witt, 2000; Kerr & Nelson, 1989; Skinner, Skinner, & Cashwell, 1998).

Independent group-oriented contingencies. In the implementation of behavior management programs, many teachers prefer contingencies that are used with the entire class because they seem to minimize preferential treatment of those selected children who require behavior modification in the classroom (Davies & Witte, 2000; Salend, Whittaker, & Reeder, 1992). Under a group contingency, students work toward a common goal such as earning extra time to work on a special project. This intervention strategy also provides opportunities to develop cooperation, accountability, and responsibility in students (Barbetta, 1990).

An independent group-oriented contingency requires that four items be held constant across students before receiving access to consequent stimuli: (a) antecedent stimuli, (b) consequent stimuli, (c) target behavior(s), and (d) target behavior criteria. The consistent application of some or all of these components across students represents the group aspect of the contingency; whereas, the fact that each student receives access to reinforcing stimuli that is contingent upon his or her own behavior represents the independent aspect of the contingency (Litow & Pumroy, 1975). For example, the grading system used in schools is an example of this type of contingency. Specifically, all

students are given the same instruction (i.e., antecedent stimuli) and target behaviors and criteria are held constant across students (e.g., assignments). Finally, all students receive the same consequences (e.g., grade) dependent upon meeting the same criteria or goals under the same conditions or stimuli (Skinner et al., 1998).

The advantages of implementing independent group-oriented contingencies using the same antecedent and consequent stimuli, target behaviors, and criteria across all students may address several of the problems related to perceived fairness resulting from individual contingencies. Furthermore, group interventions may make it easier to manage contingencies when the antecedents, targeted behaviors, criteria, and reinforcers are the same for each student (Pumroy & McIntire, 1991). New problems may arise, however, that are specific to independent group-oriented contingencies. For example, contingencies that are effective for some students may not be effective for others. As a case in point, teacher verbal praise may be reinforcing for one student, but may be aversive to or have no impact on another student.

Although considered the fairest of contingency interventions, independent group-oriented contingencies may have negative social side effects (Cashwell, Skinner, Dunn, & Lewis, 1998; Greenwood & Hops, 1981). Like individual contingencies, independent group-oriented contingencies tend to encourage students to label one another. Further, because all students know the behaviors and criteria associated with earning reinforcers, labeling may be even more likely with independent group-oriented contingencies. Specifically, when independent contingencies are used with tokens, candy or other tangibles, each student's performance must be checked and reinforcers distributed to some students, but not to others (Gresham & Gresham, 1982). Consequently, when

students do not earn access to reinforcers, other students are aware of the exact goals they have failed to achieve, sometimes resulting in labeling as failures or mistreatment of those students not receiving reinforcers by their peers (Barkley, 1990; Skinner, Skinner, & Cashwell, 1998). Additionally, keeping students from sharing their success when they do earn reinforcers may weaken the effectiveness of reinforcers by reducing incidental reinforcers such as social praise that often accompanies success (Seymour & Stokes, 1976).

Interdependent group contingencies. An interdependent group-contingency requires that each member of a group receives access to reinforcement based on some aspect of the entire group's behavior (Davies & Witte, 2000; Skinner, Skinner, & Cashwell, 1998). This type of group contingency is beneficial for several reasons. For example, if several students in the class require behavior management, interdependent group contingencies would eliminate the need to deliver individual consequences to each pupil (Kerr & Nelson, 1989). In addition, the same response contingencies are simultaneously in effect for all group members, so each individual's outcome depends on the group's performance (Davies & Witte, 2000). By creating linked goals, the students learn that they can work together toward their goal, and rewards are given equally to the entire group. Additionally, group members serve as reminders to one another of what needs to be done or improved upon in their group.

In an interdependent group contingency, a positive association exists among the achievement of all students because their behavior either works for or against group goals (Davies & Witte, 2000). Another positive side effect associated with interdependent

group contingencies may be improvement in classroom climate because students are dependent upon each other's performance to meet their common goal. In other words, employing an interdependent group contingency may build cohesion that emphasizes cooperation rather than competition as classmates work together to try to achieve a common goal (Skinner et al., 1996; Slavin, 1991). As students' fates are intertwined, interdependent group contingencies may encourage students to assist one another in achieving common goals. This may reduce the probability of students' isolating themselves from other students who are different in some way (Skinner et al.; Slavin, 1987).

Unlike individual or independent contingencies, the practical applicability of interdependent contingencies allows reinforcers to be expanded to include events and activities such as field trips. Event or activity reinforcers are not typically used during individual contingencies because it is often difficult to deliver these types of reinforcers to some students and not to others (Skinner, Skinner, & Cashwell, 1998). Interdependent contingencies also reduce the negative reactions of teachers and parents regarding tangible rewards which they may perceive as "bribes" (O'Leary, Poulos, & Devine, 1972). Even more advantageous with interdependent group contingency is the opportunity to (a) conserve resources such as costly tangible reinforcers, (b) reduce theft of reinforcers such as tokens or candy, and (c) reduce the concerns of teachers and parents regarding tangible awards. Most important, the use of group contingencies has generally elicited positive reactions from students, with many students asking if they could "use the system" in other classes (Davies & Witte, 2000).

Interdependent group-oriented contingencies benefit both students and educators. For example, researchers have found that interdependent group-oriented contingencies increase discussion among students regarding target behaviors and consequences (Gresham & Gresham, 1982). School administrators and teachers who implement interdependent group-oriented contingencies may (a) reduce teacher burn-out, (b) reduce teacher attrition, (c) reduce teacher stress-related illness or absences, and (d) improve recruitment of teachers (Skinner, Skinner, & Cashwell, 1998).

Dependent contingencies. Dependent contingencies are those in which the group receives access to consequent stimuli based on the performance of one individual or a subset of students meeting the criterion (Kelshaw-Levering, Sterling-Turner, Henry, & Skinner, 2000; Litow & Pumroy 1975). In their detailing the use of contingencies in social interaction experiments, Weingarten and Mechner (1966) explained that independent contingencies are those imposed by the experimenter. Dependent contingences were defined as behaviors that occur as a result of the imposition of independent contingencies. Weingartenen and Mechner report, "One task of experimental research on social interaction is to determine what, if any, dependent contingencies various types of independent contingencies produce" (p. 449). In the present study, dependent contingencies would be those behaviors not expected from participants as a result of tootling.

Measuring Effectiveness: Goal Setting and Performance Feedback

Goal setting and performance feedback may be added to an intervention to measure effectiveness. Goal setting can be defined as "the process of identifying a desired outcome, determining the steps needed to do it, and working toward specific objectives to achieve that outcome" (Indiana Department of Education, 2004, p. 37). This strategy, when used in combination with other interventions, enhances performance and increases on-task behavior and academic productivity (Maag, Rutherford, & DiGangi, 1992; Ruth, 1994; Sagotsky, Patterson, & Lepper, 1978). This section provides detail on two additional behavioral techniques (goal setting and feedback) to be included in the current study.

Goal setting. Goal setting is a useful tool. According to Hayes, Rosenfarb, Wulfert, Munt, Zettle, & Korn (1985), a socially available standard against which individuals can assess themselves is a desirable component of goal setting. In a review of empirical literature, Locke and Latham (1984) deduced that goal setting improved task performance by (a) focusing and directing the subjects, (b) regulating their efforts, (c) enhancing their persistence on a given strategy or task, and (d) promoting the development of new strategies for improving the subjects' task performance. However, Locke and Latham also concluded that in order for goals to be effective, they must be (a) specific, (b) challenging, (c) persistent, and (d) accepted by the individual to ensure commitment (Locke & Latham).

Performance feedback with public posting. Goals must be attainable and include performance feedback components (Locke & Latham, 1984). Further, most consistent effects on treatment implementation and success have been observed in studies employing performance feedback (Reid, Green, & Schepis, 1991; Harchick, Sherman, Sheldon, & Strouse, 1992). In addition, Hayes et al. (1985) found that goal setting is strengthened when the goals are made public.

Performance feedback has been defined as a method of providing information or knowledge of processes and results to promote transfer or maintenance of skills and behaviors as well as to determine if the goals that were set had been met (Arco, 1991; Hawkins, Burgio, Langford, & Engel, 1992). Public posting combines performance feedback to the individual with the results of the individual's performance also provided to the entire group as public information (Brobst & Ward, 2002). Balcazar, Hopkins, & Suarez (1985) reported that feedback with public posting was effective in 53% of reviewed studies. Furthermore, some form of written feedback was found to be more effective than individual oral feedback alone. Furthermore, in a study of workplace behavior, Fleming and Sulzer-Azaroff (1989) found that a performance feedback package consisting of written instructions, demonstrations, and verbal feedback on-the-job led to the greatest increases in targeted behaviors.

Summary

The current study sought to determine if the Duck, Duck, Tootle Intervention Package, in which a number of behavioral techniques were combined would increase on-task classroom behavior in target students, within the general education population, who

were referred to the school psychologist for behavior problems. Interdependent group contingencies combined with public posting, classwide goal setting, and performance feedback were make up the tootling intervention package which was used in this study.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study was to determine if the Duck, Duck, Tootle Intervention Package, consisting of interdependent group contingencies to reinforce peer reporting of on-task behaviors and public posting could be used to (a) increase students' reporting of their classmates' on-task behaviors and (b) increase the occurrence of on-task behaviors in target students. The intervention selected for the present study was tootling. Tootling is a positive peer reporting (PPR) intervention that consists of interdependent group contingencies and public posting to increase prosocial or desired behaviors.

Participants and Setting

Cluster sampling was used to obtain participants from a Chapter I elementary school located within a low-income area of a southwestern suburb in a large metropolitan area. This study was conducted during the summer school session beginning in June. Summer session consisted of regular education students who were enrolled per parent requests. Due to the short duration of summer sessions, teachers were not required by the school district to implement individualized data-derived classroom behavior

management programs under the tiered model. Demographically, the chosen school was comprised of non-minority and minority youth of low socio-economic status. A total of five intact regular education elementary classrooms were chosen across grade levels (i.e., kindergarten through fourth grade) to serve as the experimental group. Ten non-special education target students, two from each class, were selected via teacher referral for concerns regarding behavior difficulties and analysis of data obtained through observations conducted by the researcher. Parent consent was obtained for each target students. Target students were identified as general education students (not special education eligible). Participants included both boys and girls across ethnicities. The demographic information of participants by grade is presented in Table 3.1. Information includes ethnicity, age, and targeted problem behaviors for each student. The ethnic breakdown of target students was as follows: (a) kindergarten (two Hispanic males, mean age 5.5 years); (b) first grade (two Caucasian females, mean age 6.4 years); (c) second grade (two African American males, mean age 7.4 years); (d) third grade (one African American male and 1 African American female, mean age 8.25); and fourth grade (two African American females, mean age 9.6 years).

Table 3.1

Target students' demographics and target behavior

Student	Ethnicity	Gender	Age	Target Behaviors
		Kindergarten		
Diego	H	Male	5.5	(a) out- of place, (b) noise
Jesus	H	Male	5.6	(a) noise, (b) out of place
		First Grade		
Angela	C	Female	6.3	(a) inattention, (b) noise
Dalia	C	Female	6.5	(a) inattention, (b) noise
		Second Grade		
Deandre	AA	Male	5.5	(a) out of place, (b) inattention
Elias	H	Male	7.5	(a) inattention, (b) out of place
		Third Grade		
Darius	AA	Male	8.5	(a) out of place, (b) aggression
Jasmine	AA	Female	8.5	(a) noise, (b) inattention
		Fourth Grade		
Brandy	AA	Female	9.6	(a) noise, (b) inattention
Tonya	AA	Female	9.4	(a) noise, (b) inattention

Note. H=Hispanic, C=Caucasian, AA=African American.

Target Students

This section provides a detailed description of each target student included in this study. Target behaviors are also described in this section.

Kindergarten

Diego. Diego was a 5 year-old Hispanic male in a general education kindergarten program. Teacher report indicated that Diego was frequently out of his seat, walking around the classrooms to peers desk and learning centers (i.e., computer center) without teacher permission. Diego also had a tendency to stand during instruction time, which was often distracting to other students. During large group instruction, the teacher reported that Diego frequently talked to peers adjacent to his seating area. Diego was often made to sit adjacent to the teacher due to his engagement in inappropriate behaviors. Diego had been sent to the behavior intervention class three times due to disruptive behaviors (e.g., walking to peers desks and learning centers and distracting classmates). It is important to note that during summer school the behavior intervention classroom was used as a time-out or in-school-suspension setting.

Jesus. Jesus was a 5 year-old Hispanic male in a general education kindergarten program. Teacher reports indicate that Jesus frequently made inappropriate noises in which he often blurted out unrelated words or statements during large group and engaged in talking without permission during independent seat work. His teacher also stated that Jesus frequently got out of his seat without permission, walked to peers desk, stood at his

desk, and danced during instruction time. Jesus often received verbal reprimands and in-class timeout (removal from group and seated in a desk adjacent to the teachers' desk). Jesus was sent to the behavior intervention classroom two times this school year, which involved blurting out during independent seat work. Jesus was being monitored at the time of this study, to determine the need for eligibility testing for special education services.

First grade

Angela. Angela was a 6 year-old Caucasian female in the first grade. Teacher reports indicated that Angela was frequently off-task, looking around the room and playing with items at her desk (i.e., pencil, erasers) during independent seat work and direct instruction. Angela also spent a great deal of time talking to peers during independent seat work. Angela was frequently redirected with verbal prompts and seated in a desk adjacent to the teacher in front of the class to complete independent seat work. Angela's teacher further indicated that she often repeated instructions for Angela, due to frequent talking while the teacher was talking and inattentiveness. Angela received frequent redirection. Angela had received one in-class time out and has been sent to the behavior intervention classroom once.

Dalia. Dalia was a 6 year-old Caucasian female in first grade. Teacher reports indicated that Dalia frequently engaged in inattentive behaviors, looking around the classroom and out the adjacent window. Her teacher also indicated that Dalia spent a

great deal of time talking to her peers throughout the day during independent seat work and large group work. Dalia was typically redirected by her teacher to address her misbehavior. Dalia had received two in-class time-out reprimands due to off-task behavior (i.e., looking around the classroom and out the window) had been sent to the behavior intervention class once due to class disruptions (i.e., talking continually despite redirection).

Second grade

Deandre. Deandre was a 7 year-old African American male in second grade. Teacher reported that Deandre frequently got out of his seat, crawled on the floor, was non-compliant, and refused to complete class assignments. Deandre often reported, "I don't know what to write. I'm not writing nothing" in response to verbal instructions given by the teacher. Deandre's teacher also reported that Deandre talked without permission. At the time of this study, Deandre received frequent verbal redirections, and was sent to the principal's office on three occasions (all for non-compliance and work refusal) where he spent a majority of the class period completing instructional assignments.

Elias. Elias was a 7 year-old Hispanic male in the second grade. Although prescribed medication for Attention Deficit Hyperactivity Disorder, Elias was being educated as a student in the general education program. Elias was being monitored by the campus core team at the time of this study to determine whether a referral for special

education was warranted. Elias' teacher reported that he was often inattentive, looking around the room, and playing with objects (i.e., school supplies, his hands and fingers), which was often distracting other students in the class. Elias also frequently got out of his assigned seat, walked around the room, and stood at his desk despite being instructed to be seated. Elias received verbal redirections and in-class time-outs for playing at his desk. Elias had been sent to the behavior intervention class room three times.

Third grade

Darius. Darius was an 8 year-old African American male in the third grade. Darius was somewhat larger than his peers, often engaged in bullying his peers and behaved aggressively towards them. Darius' teacher frequently used verbal redirection and in-class time out to address Darius' problem behaviors in the classroom (see description below). When Darius' behavior escalated, his teacher sent him to the behavioral intervention classroom. When Darius' behavior escalated in the behavior intervention classroom, Darius was given an office referral. Darius had two physical fights with peers during the year, of which he was suspended for two days. Darius also frequently engaged in out-of-seat behavior, where he stood at his desk during independent seat work. Darius also tended to respond aggressively to peers, exhibiting verbal aggression and by fighting. Darius was sent to the behavior intervention class for verbal aggression, had one office referral for using profanity, and received two office referrals for fighting.

Jasmine. Jasmine was an 8 year-old African American female in the third grade. Jasmine's teacher reported that she frequently talked without permission and threatened peers. Jasmine was not well-liked by her peers and often responded negatively and aggressively toward them. Jasmine frequently made aggressive threats to peers during unstructured class time and transitions. Jasmine's teacher typically used verbal redirection to address Jasmine's frequent talking. To address her verbal aggression, Jasmine is directed to in-class time out. Jasmine was sent to the behavior intervention class once for verbal aggression and received two office referrals for threatening to beat up other students.

Fourth grade

Brandy. Brandy was a 9 year-old African American female in the fourth grade. Brandy's teacher reported that she often engaged in out of seat behavior, in which Jasmine stood at her desk and talked to peers. Her teacher also indicated that Brandy was frequently off-task, looking around the room and writing notes to classmates. She reported that Brandy frequently got into verbal disputes with peers, many times becoming verbally aggressive. Brandy's teacher also reported that Brandy often talked to her peers without permission, during independent seat work. Brandy was sent to the behavior intervention class once and had one office referral.

Tonya. Tonya was a 9 year-old African American female in the fourth grade. Tonya's teacher reported that Tonya often talked without permission to peers during large

group, small group, and independent seat work, and frequently failed to complete classroom assignments. Her teacher further reported that Tonya was frequently off-task, playing with items at her desk (i.e., pencil, paper) and her clothing. Prior to the intervention, Tonya was sent to the behavior intervention class once for off-task behavior and failure to complete her test and had one office referral for disrupting the class by constant talking.

Setting & Classroom Demographics

This section describes the settings for each of the target students and the composition of the classrooms used in this study. The two students at each grade level were in the same classroom.

Kindergarten

This section provides a description of each classroom included in this study. The kindergarten class consisted of 14 students. The students were seated at desks positioned to make rectangular tables. The classroom had academic and activity centers placed in each of the four quadrants of the room. In particular, the class consisted of (a) the computer center, (b) the art center, (c) the calendar center, (d) and the reading center. Also at the front of the classroom was a white dry-erase board, an easel for large group reading and spelling instruction and a color-coded copy for children to sit in pods or color defined groups. Students were typically directed as cohort pods. The students (7 boys, 7 girls), were diverse with 30% of the class of Hispanic decent; 30% of African American

decent; and 40% of Caucasian decent. The teacher, in her first year of teaching, was very energetic and excited to have a behavior intervention for her class.

First grade

The first grade class consisted of 9 students (4 girls, 5 boys) with 40% of the class of Hispanic decent; 20% of African American descent; and 40% of Caucasian decent. The students were seated at rectangular tables with three students per table. The classroom had abundant natural light through a bank of windows. The class was arranged with shelving for several manipulative centers. The first grade teacher had been teaching for more than 30 years. The first grade class had minimal structure; however, the teacher was eager to participate and expressed immediate concern regarding the target children in her class.

Second grade

The second grade class consisted of 10 students (5 girls, 5 boys) with 10% of the class of Hispanic decent; 50% of African American decent; and 40% of Caucasian decent. The students were seated at individually arranged desk throughout the classroom. Desks were arranged with ample space between each desk to discourage chatter and interaction during independent seat work. A color coded carpet was arranged at the front of the class where students sat for large group instruction. The class had minimal visual stimuli and was fairly structured, with clearly defined limits and expectations. The teacher had 3 years of experience and appeared to have a firm foundation in behavior management.

Third grade

The third grade class consisted of 7 students (3 girls, 4 boys) with 30% of the class of Hispanic decent; 60% of African American decent; and 10% of Caucasian decent. The third grade students were seated at desk arranged in dyads, referred to as the students' offices. The third grade teacher had 5 years of teaching experience and focused on creating a community atmosphere in the classroom. This class was fairly structured, with consistency across times of activities with clearly defined limits and expectations. The teacher was excited about having an opportunity for this intervention to be implemented in her class.

Fourth grade

The fourth grade class consisted of 12 students (6 girls, 6 boys) with 40% of the class of Hispanic decent; 50% of African American decent; and 10% of Caucasian decent. Students were arranged at tables of three. This class appeared to present with frequent inconsistency in structure due, in part, to the fact that this class was team taught, with two teachers who split the day. One teacher taught the morning segment (8-11 am) and the other taught the afternoon segment (1-3 pm).

Collection of Observational Data

This section provides a description of observational procedures used to examine the target behaviors of students in the study. Observational data for all students' behavior was obtained using the chosen school district's Systematic Observation Form (see

Appendix B) utilized in the pre-referral process. The Systematic Observation Form divided observed behavior into five categories: (a) On Task, (b) Making Noise, (c) Out of Place, (d) Engaging in Physical Contact, (e) Off-Task Behavior, and (f) Variable1/Variable 2 for tracking specific behaviors not listed on the form.

The Systematic Observation Forms defined the observable target behaviors as indicated below. On task behavior included all behaviors compliant with teacher directives. Making noise, according to the Systematic Observation Form included any sounds created by the child, which distract either another student or the teacher from the business at hand. The noise category included sounds generated vocally (including talk outs or unintelligible sounds) or non-vocally (tapping pencil or snapping fingers). Out of place included any movement beyond either explicitly or implicitly defined boundaries in which the child is allowed movement. If the child was seated at his/her desk, then the movement of any sort of the seat was rated as out of place. Physical contact was defined as any contact with another person or another person's property which is unacceptable to that person. Kicking, hitting, pushing, tearing, breaking and taking are categorized as physical contact. Off-task behavior was defined as any movement off of a prescribed activity which did not fall into one of the three previously defined categories. Looking around, staring into space, doodling or any observable movement off of the task at hand was included. Variable 1/Variable 2 included any other observable and defined behaviors targeted by the teacher and/or observer. The Systematic Observation Form allowed the observers to obtain the percent of intervals of appropriate and inappropriate behavior. Intervals of observed target behavior were recorded, summed, and divided by the number of intervals observed then multiplied by 100 to obtain a percentage of

occurrences per target behavior. The Systematic Observation form consists of 100 intervals for observation of the target child and 100 intervals for observations of a comparison peer. For the purpose of this study, target children and composite comparison children were observed for a total of 50 intervals (8.33 minutes) per observation session. Observations were conducted using 10-second partial interval recording. The Systematic Observation form allowed the observer to alternate between the target child in one interval and the comparison peer, to obtain a composite comparison, in every other interval. Each minute was divided into six 10-second intervals with three intervals for the target child and three intervals for the comparison child. Observations of target and comparison children were conducted on an alternating schedule with the comparison child observed every other interval. Behaviors were recorded using a partial interval observation method, in which a behavior is recorded if any occurrence of the behavior occurs at any point during the interval. Specifically, during each interval, the primary researcher looked at the student being observed , determined whether the student was on-task, out of place, off-task, making noise, engaging in physical contact, or displaying target behaviors designated as Variable 1 or Variable 2. If a target behavior was observed at any time during the interval, it was indicated at that moment by circling the letter or the letter of the target behaviors indicated above.

Procedure

Tootle Training

This section provides a description of the Duck, Duck, Tootle Intervention training procedures implemented in each classroom (see Appendix C), to teach students and teachers to employ tootling. Tootle training procedures were conducted within each classroom over a total of 4 days, with the first two training sessions for 15-minutes each, the third training session for 20 minutes, and the fourth session, also 20 minutes which consisted of tootling practice in each of the target classrooms. Students and teachers in each target class were taught to tootle by the investigator, using tootle training procedures as outlined by Skinner et al. (2000). A tootling procedural script was created for the purpose of consistency across training sessions (see Appendix C). A strict adherence to this script was maintained during each training session. Documentation of training was recorded at the end of each training sessions, as the primary researcher and teacher, upon completion of each training session initialed and dated in a space designated on the protocol upon completion of each training session. Training sessions were conducted at approximately the same time of day across a 4 day period, for the purpose of employing time-consistency with the regular classroom schedule and to avoid time conflicts and disruptions during scheduled activities.

The investigator instructed participants in each classroom to identify and report instances of on-task behavior. Four on-task classroom behaviors were identified for this study and are defined operationally as follows: (a) *sitting quietly*–the student's bottom was in his or her seat, and the child was not talking; (b) *paying attention*–the student's

eyes were on either the teacher or the chalkboard, as appropriate, and the child is not talking; (c) *completing written assignment*–the student had a writing implement in hand, and the point of the implement was touching the paper; and (d) *completing reading assignment*–the eyes of the student were fixed on either the book or the paper, as appropriate. Target behaviors were identified and operationally defined for each target kid, as indicated via analysis of teacher interview and observational data.

Day 1 Tootle Training

To begin the first training session, the students and the teacher were introduced to the investigator. Next, students were asked, "What does it mean to be 'a good student?'" The desired response was along the lines of "one who does what he or she is told and does not disrupt the class." A discussion then ensued regarding the difference between appropriate classroom behavior and inappropriate classroom behavior with examples and non-examples provided. This resulted in making a distinction between a negative behavior–tattling, defined as "telling the teacher when a classmate was not on-task or when a classmate did something wrong" and a positive behavior, (criteria for tootling), and reporting when a classmate has behaved appropriately or followed the class rules (i.e., tootling).

The concept of tootling, with its positive connotation, was then introduced as "telling the teacher something a classmate did right" or "something a classmate was doing that he or she was supposed to be doing or on-task behavior." Students were then provided examples of on-task behavior and asked to verbalize their own examples of on-

task behavior. The investigator provided verbal feedback (e.g., praise) for correct answers and corrective feedback for incorrect responses.

Day 2 Tootle Training

On the second day, the second session of tootle training was conducted. The primary goal of this session was to review the definitions and criteria for the on-task behaviors identified for this study. For example, the desired response to the question, "How do you know if a classmate is doing his or her work?" would be "You can tell when classmates are busy doing their work or paying attention if they are not playing with their pencils or talking to each other without permission." During this session, the investigator utilized the tootle charts and stickers to teach students to give tootles to classmates when prompted by the researcher. Students were then provided additional opportunities to practice tootling with prompting. Pictorial images respective of on-tasks behaviors consistent with classroom rules, were employed in the training and posted on the walls for the duration of the study. A prompt in this situation was defined as the point at which the investigator hands a tootle sticker to the student.

The investigator provided feedback to the students so they would know if they were correctly tootling. Prompted students were asked to state which of the four target behaviors led to the reward of the tootle. When student responses were correct, the investigator offered verbal praise; when incorrect; students were provided corrective feedback and explained the differences between correct and incorrect observations.

Day 3 Tootle Training

The third day of tootle training consisted of a 15-minute practice session with verbal prompts. In addition, during this session, the students were asked about the tootling concept and procedure, and examples were again solicited from the class. Praise and corrective feedback were rendered accordingly.

Tootle charts were introduced on the third day. The investigator distributed copies of blank grids or tootle charts to the students to track their behavior (see Appendix C). The teacher was also instructed in the tootle chart procedure and procedural checklist for 10-minute durations, during each planning period (See Appendix C). During classwide training, students were taught to record goals for themselves and observations of peer behavior each day on the tootle charts. Oval stickers or tootles served as primary reinforcers of individual contingencies, to reinforce observed on-task behaviors. These tootles also served as behavior trackers for target behaviors. On the third day of tootle training, following tootle practice, students were engaged in an activity allowing them to assist in decorating a box to collect their tootles, the tootle box. The decorative tootle box was used to collect and store classwide tootle charts on a daily basis.

For additional feedback and reinforcement, on the final day of tootle training, individualized graphics were displayed in each class via public posting on the classroom bulletin board. Graphics were used to provide each class with a visual representation of their anticipated classwide goals for tootling and feedback on their progress. Specifically, in the kindergarten class, a graphic depicting Winnie the Pooh going from tree to tree, in which trees represented criterion markers; by displaying the number of, tootles the class achieved per tree with a goal of reaching the pot of honey. The first grade class displayed

a graphic of a bus passing through traffic lights (criterion markers) which indicated the number of tootles with a goal of reaching the school. The graphic posted in the second grade classroom was a race car traveling to the finish line with flag markers indicating the number of tootles the class achieved. The graphic posted in the third grade class was a hot air balloon with clouds representing the criterion markers indicating the number of tootles achieved. The graphic posted in the fourth grade classroom was Put-Put golf with putting holes representing criterion markers, which indicated the number of tootles the class achieved. The graphic displays were pre-selected by the examiner, who supplied all of the components for students to assist in creating the cardboard graphic displayed in each class.

Students were then allowed to practice tootling with the teacher's prompting. Practice was implemented during the last 5 minutes of each training session over the 4 day training period.

On Day 3, after the students completed decorations for the tootle box/basket, it was placed on the teacher's desk or in central part of the classroom for students to have access and for teacher monitoring. Students were instructed to put their tootle charts in the tootle box at the end of the training session. Students whose tootles filled their tootle chart prior to the end of the day were instructed to obtain another blank tootle chart and record a new goal at the lower left hand corner of the chart. Classrooms were allowed to keep their tootle box/basket following the completion of this study, as a momentum for their hard work.

Day 4 Tootle Training

The final training day, in which training occurred for 20 minutes, was a day for students to practice independently as the primary researcher observed for procedural integrity. Teachers used the procedural checklist to facilitate tootles, as students independently tootled throughout the training session (Appendix D) as the researcher observed for procedural integrity also using the Procedural Checklist. Students also assisted the investigator with constructing the graphic display, which was pre-selected by the researcher. As tootle charts were filled with tootles, teachers instructed their students to place their tootle charts in the tootle box/basket and begin a new chart. Teachers were then provided Daily Tootle Recording Sheets to record daily tootle totals, both classwide and for the target children in their classes (See Appendix E). At the end of Day 4 training, each teacher tallied classwide and target-child tootles as indicated on the procedural checklist and recorded it on the Daily Tootle Recording Sheet. Each teacher was also given pre-dated manila folders to store the tootle daily charts, Daily Tootle Recording Sheet, and Procedural Checklist, which was picked up by the primary investigator at the end of each day. Following the training session, the investigator met with the teacher to offer verbal praise and provide corrective feedback, as appropriate.

Collection of Tootle Data

This section describes the process by which classwide and target child tootle counts were obtained. Following training, each teacher collected tootle count data for their respective classroom and target students. Data consisted of the numbers of tootles awarded per target child and classwide. Teachers also completed and submitted

procedural checklist daily. This information was given to the investigator each Friday for analysis.

Measuring Initial & Secondary Baseline

This section describes the processes used to measure initial and secondary baseline tootle frequency data. Two baselines were employed to enhance the strength of the study. This section provides a description of the procedures used in Baseline 1 and Baseline 2, to obtain observational data. Observational data for target students' behaviors and composite comparison students was obtained using the chosen school district's Systematic Observation Form (See Appendix B) utilized in the pre-referral process. The Systematic Observation Form allowed observers to obtain a frequency count for the following behavioral categories: (a) on task (OT); (b) making noise (N); (c) out of place (OP); (d) engaging in physical contact (PT); (e) off-task behavior (OT) and; (f) variable1/variable 2 (V1/V2). Intervals of observed target behaviors were converted into percentages for each observation session.

Observations were conducted during both Baseline 1 and Baseline 2, using partial interval recording with 10-second intervals. Comparison children were observed every other interval. Three baseline observations were taken for each target child during baseline phase.

Tootling Baseline

The A-B-A-B withdrawal design of the study required a measurement of target behavior, including the (a) the number of classwide tootles, (b) the number of the target students' tootles, (c) comparison-student tootles, and (d) the systematic observation form percentages for the target-student and comparison-student at during each phase. As mentioned previously, this study consisted of two baseline periods, initial baseline (A1) and secondary baseline (A2). The baseline phase continued until the number of tootles stabilized for each target child, as evidenced by consistent pattern in level and trend across the students. See Data Analysis for a discussion of these characteristics. Stability was determined by the establishment of a consistent numerical pattern. The rate and trend of PPR (i.e., the number of tootles) served as baseline for each class and target child.

Baseline 1(A1). During initial baseline, students were introduced to tootling. Initial baseline measurement immediately followed the completion of training. During this phase, students were prompted by their teacher to provide their peers with tootles for instances of on-task behavior as defined in training. The teacher was instructed to follow daily tasks on the Procedural Checklist Form (See Appendix C) verbatim, initialing each completed daily objective upon completion. Each day thereafter, upon entrance into the classroom, students were instructed to put their name and the date on their tootle chart that the investigator had taped to their desks. Kindergarten classrooms received monogrammed tootle charts, due to potential difficulty with fine motor skills which may have affected the legibility of their names. At the beginning of the school day, the

teachers were to remind students to record their daily tootle goal at the lower left hand corner of their tootle charts.

Throughout the day, teachers delivered tootle prompts intermittently and recorded the time of each prompt on each procedural integrity form for the respective day. Students, who filled their tootle charts, were instructed by the teacher to obtain another monogrammed tootle chart, put their name and date in the appropriate spot, and record a new goal at the lower left corner of the chart.

At the end of the day, the students were instructed to place their tootle charts in the tootle box. The teacher retrieved the tootle charts from the tootle box and counted the number of tootles for each chart completed by each child to allow for those students who complete more than one tootle chart. Each teacher also completed a classwide tootle count for that day by totaling all tootles for all students in the class. After counting classwide tootles, each teacher recorded the classwide total on the Daily Tootle Recording Sheet attached to the front of the pre-dated manila envelope (See Appendix D). The teacher was also responsible for indicating the total number of tootles per target child each day. The teacher then placed the pre-dated procedural checklist with teacher-initialed objectives, the Daily Tootle Recording Sheet, and all tootle charts for that day in the pre-dated manila envelope. Each teacher followed this protocol daily. Integrity for procedures is reported in the Integrity section of this chapter.

Tootling Baseline 1 lasted until the data stabilized, with the maximum initial baseline period lasting 7 days.

Baseline 2(A2). Following the initial intervention phase, the secondary baseline phase began. The secondary baseline (or withdrawal) phase was implemented for a duration of 5 days, in which the graphic display for each class, was removed along with reinforcer criteria and performance icons. Facilitation of positive peer reporting, however, continued during that 5-day period, with students being provided tootle charts and prompted with stickers to tootle. During Baseline 2, tootle charts were provided and students were instructed to put their name and the date on their tootle chart that the investigator had taped to their desks. As in the initial baseline phase, teachers delivered tootle prompts intermittently and recorded the time of each prompt on each procedural integrity form for the respective day. At the end of the day, the students were instructed to place their tootle charts in the tootle box. The teacher retrieved the tootle charts from the tootle box and counted the number of tootles for each chart completed by each child to allow for those students who complete more than one tootle chart. During Baseline 2, teachers continued to record a classwide tootle and the total number of tootles per target child each day on the Daily Tootle Recording Sheet attached to the front of the pre-dated manila envelope (See Appendix D). The teacher then placed the pre-dated procedural checklist with teacher-initialed objectives, the Daily Tootle Recording Sheet, and all tootle charts for that day in the pre-dated manila envelope. Each teacher followed this protocol daily. Integrity for procedures is reported in the Integrity section of this chapter.

Intervention Phase

This section describes the intervention conditions implemented in this study. The study employed two intervention phases (B1 and B2). The first intervention phase (B1)

lasted 5 days which consisted of a cumulative tootle goal (including tootles obtained during Baseline 1) of 500 tootles. Intervention 2 phase (B2) lasted 3 days, with a cumulative tootle goal (including tootles obtained from Baseline 1, Treatment 1, Baseline 2 and Treatment 2) of 1,000 tootles. The following subsections will describe the detailed procedures employed during the intervention phases of this study.

Constructing and Implementing Group Contingencies

Prior to the intervention phase, on the final day of Baseline 1 data collection and during the last 30 minutes of class, a preparation session for the intervention phase was employed. During this preparation session, each class agreed on a classwide reward that could be earned through meeting tootling criterion. Specifically, in this session the primary researcher explained the interdependent group contingency (i.e., all or none of the students in a group receive access to the same consequence on the basis of some aspect of the groups behavior; Watson & Skinner, 2004) to the students, using simple terms. The researcher also solicited suggested plausible group reinforcers (e.g., an activity or tangible item) were solicited from the students and teachers in the classroom.

Students were told that reinforcers should be reasonable, inexpensive tangible items or activities that everyone in the class would enjoy. The primary researcher assisted in brainstorming reinforcers by providing several examples. The primary researcher, in cooperation with the teacher, selected a set of classwide reinforcers from those provided by students. Selected reinforcers included an extra 10 minutes at recess, 10 minutes of extra free-time, a popcorn party, an ice cream party, and various tangibles including special pencils and gender specific-toy baskets. Each reinforcer was paired with an

identified daily goal for classwide tootles and a cumulative class goal. Daily classwide tootle goals were set at 100, due to the high rates of positive peer reporting during baseline, with a cumulative goal of 500 for Intervention 1 and a final goal of 1,000 at the end of Intervention 2. It is important to note that the classwide tootle goal for the second grade class was increased to 2000 tootles, due to significantly high initial tootling rates, dissimilar from the other 4 classrooms. Students, teachers, and the primary researcher decided that each class would receive earned reinforcers on Friday of the week they met their goal. If a goal was obtained on a Friday, the reinforcer was presented on the following Monday.

Public Posting

Public posting has been defined as *public*, pictorial, or numerical *feedback* on an individual's performance (Blount & Stokes, 1984; Gross & Ekstrand, 1983; Van Houten, Nau, & Marini, 1980). In order to display feedback to each class regarding their respective progress towards each goal, a publicly posted graphic design with a performance icon to show classwide tootling progress and tootle goals for the class marking daily progress was prominently displayed in each classroom. Students were told that each morning their teacher would announce the previous day's tootle totals and pass out tootle charts. Teachers also posted the daily feedback each morning. For example, the number of tootles received on Tuesday was posted on the following Wednesday morning. The performance icon used to show performance achievement was placed at the bottom of the display with a Velcro patch this allowed the performance icon to be attached at the obtained goal and moved up according to each daily number of tootles.

Tootling

The following section will describe procedures used to implement the tootling intervention phases, namely Tootling Intervention 1 phase, which lasted 5 days and tootling Intervention 2 phase, which lasted 3 days. Teachers were provided pre-dated manila folders containing pre-dated Teacher Procedural Checklists (See Appendix C). On the cover of each folder were the following three data queries: (a) total tootles, (b) tootle charts enclosed, (yes/no), and (c) procedural checklist enclosed (yes/no). Teachers were instructed to complete the queries daily.

The objective of the Teacher Procedural Checklist was to measure procedural integrity. The checklist measured the following behaviors that teachers were instructed to engage in: (a) placed pre-dated posted tootle charts on each students desks, (b) facilitated tootling, (c) collected tootle charts and , (d) counted classwide tootles. Teachers were instructed to facilitate tootling by walking around the classroom and passing out stickers to students to tootle their peers, throughout the day. On days when students reached a goal, the number of tootles received and the reinforcer paired with that reinforcer was announced to the class. Teachers were provided incremental time indicators on the Teacher Procedural Checklist to indicate times of day each class was to actively engage in tootling. The second intervention phase was implemented following the second baseline (withdrawal) phase using the exact same procedures. Tootling under Intervention 2 phase continued in each class until the final classwide goal of 1,000 was achieved.

The researcher gathered tootle data at the end of each day, and arranged for each class to receive the predetermined reinforcers as goals were met. When classes reached their final goal and were presented the final reinforcer, the researcher withdrew materials from the classroom and ceased involvement in the tootling program. However, some teachers chose to continue tootling on their own.

Dependent Variables

Four dependent variables were examined in this study. The first dependent variable examined was the daily number of *classwide tootles* per class during baseline and intervention phase. Second, the daily *number of tootles per target child* was examined. The third dependent variable investigated was the *number of tootles for composite comparisons*. The last dependent variable examined was the percentage of appropriate and inappropriate behavior for target children. For the purpose of this study inappropriate behaviors (e.g., physical contact, out of place behavior, aggression, inattentive behavior, and inappropriate noise) were combined into one category termed, disruptive behavior.

Percentages of on-task and inappropriate behaviors were calculated as follows: the number of instances of on-task behavior was divided by the total number of intervals. That amount was then multiplied by 100 to derive the percentage of on-task behavior demonstrated by individual target and alternate kids. The formula is provided below.

$$\frac{\text{Raw Number of On-Task Behavior}}{\text{Total Number of Intervals}} \times 100 = \text{Percentage of On-Task Behavior}$$

Design

An ABAB withdrawal design was used to evaluate the effects of the tootling intervention program on appropriate and problem behaviors. This design was chosen because it established three demonstrations of the experimental effect at three points in time through demonstration that behavior change covaries with manipulation (introduction and removal) of the independent variable between Baseline and Intervention phases. Three demonstrations of an experimental effect are documented by changes observed from (a) baseline to intervention, (b) intervention to baseline, and (c) baseline to intervention.. This ABAB withdrawal design further provided an internal validity check on simple phase change while providing control over extraneous variables (e.g., pre-treatment effects, selection bias, reactivity, and maturation). It is important to note that for the purpose of this study, baseline conditions for each grade were continued until tootle data stabilized for both target children in each class.

One concern of using this design is that using multiple series designs can result in an excessively long baseline. Generalization may be problematic from a pure research perspective, but a desirable effect from a treatment perspective.

Data Analysis

Once the data was collected during all phases it was analyzed using visual analysis. Visual analysis is the process of looking at a graph to determine whether an intervention has altered the subjects' pre-intervention patterns. The data was plotted on line graphs allowing the variability of the conditions to be examined for trend, level and

variability (Hayes, Barlow, & Nelson-Gray, 1999). Each of these characteristics is discussed below.

Trend is the direction of change from the beginning of a series of data points to the end of the series of data points. The current study sought an increasing trend for the number of tootles obtained by target kids during the intervention phase as to indicate that target students were improving in demonstrating on-task behavior. This increasing trend during the intervention phase of the public posting and interdependent group contingencies would have the effect of increasing positive peer reporting. A decreasing trend in percentages of observed off-task behavior during the intervention phase was also desirable, indicating that target students teacher-identified problematic target behaviors decreased.

Level is the average value or mean performance during a condition (i.e., phase) of the study, which reveals whether the amount of the target variable has changed from baseline to intervention period (Engel & Schutt, 2005). Level may be determined by inspecting the actual data points or, alternatively, be summarized by drawing a line at the typical score (mean or median) for each phase separately. Changes in level are typically used when the observations fall along relatively stable lines (Engel & Schutt, 2005).

Variability refers to the spread of data points around the level and trend. The more variability in a given phase, the more difficulty exists in identifying a student's true level of off-task behavior. A large amount of variability within a phase typically suggests the influence of other extraneous variables (e.g., distractions illness). On the other hand, more stability in the data during intervention, as opposed to baseline conditions, suggests an important intervention effect, despite changes in level and trend (Hayes et al., 1999).

Hence, it may be acceptable and necessary at times to proceed with implementing the intervention phase, even when data presents as less stable in baseline.

The effects of the treatment conditions were determined by the rates of positive peer reporting during treatment conditions versus baseline conditions, and the percentages on-task behavior of target kids during treatment conditions versus baseline.

Procedural and Treatment Integrity

Treatment integrity is the degree to which procedures or treatments are accurately and consistently implemented (Sterling-Turner, Watson, & Moore, 2002). Procedural integrity can be assessed through direct observations of instruction or by audio- or video-taping sessions and coding them later (Ehrhardt, Barnett, Lentz, Stollar, & Reifin, 1996). Failure to assess treatment integrity compromises explanations of treatment effects, making it difficult to determine if change demonstrated in the dependent variable is due to the treatment or failure to accurately implement the treatment (Gresham, Gansle, Noell, Cohen, & Rosenblum, 1993; Watson, 2000). Poor procedural integrity may result inaccurate findings and compromise validity of the overall outcome of the study. Therefore, a Procedural Checklist (See Appendix C) of required steps for implementation of the tootling program was designed and completed by each teacher daily. For the purpose of this study, treatment integrity data consisting of direct observation and teacher completion of the Procedural Checklist. Treatment integrity was calculated by the number of items of the checklist completed correctly divided by the total number of items on the checklist and multiplied by 100. An average was calculated for each teacher's

treatment integrity during both the baseline and treatment phases. The formula is presented below.

$$\frac{\text{Number of items completed correctly}}{\text{Number of items total}} \times 100 = \text{Treatment Integrity}$$

Treatment integrity for baseline 1, treatment 1, baseline 2, and treatment 2 was 100% according to teacher averages for the self-reported checklists and across phase observations. A review of all of the checklists was completed as a measure of treatment integrity to determine the degree with which the interventions were implemented as prescribed by the primary researcher.

Interobserver Agreement

Interobserver agreement (IOA) is the percent of agreement between two raters of the same instance. For 80% of the sessions, across all phases, a second observer was employed to observe child behavior, as investigated in this study. In order to obtain inter-observer agreement, the additional researcher observed target children and composite comparisons during every third observation session per phase. IOA for the treatment integrity of observations of on-task behavior was calculated by dividing the number of agreed upon instances of on-task behavior and disruptive behavior observed for each session by the number agreements plus disagreements, and multiplying this ratio times 100. The formula is presented below.

$$\frac{\text{Number of Agreements}}{\text{Number of Agreements + disagreements}} \times 100$$

Interobserver agreement ranged from 92% to 100%, *M*=96% for all phases.

Interscorer Agreement (ISA)

Using one sheet of paper, the number of tootles were recorded by the teacher for each target child and their respective class. The primary researcher, then independently recorded the same data on 100% of the tootles. A third scorer then independently recorded the same data on 50% of the tootles. Interscorer agreement was 100% for tootle count accuracy for target children and their respective classes. The formula is presented below.

$$\frac{\text{Number of Agreements}}{\text{Number of Agreements + disagreements}} \times 100 = \text{ISA}$$

CHAPTER IV

RESULTS

The purpose of the current study was to improve and extend research on a program designed to increase appropriate behavior using an ABAB withdrawal design, referred to as the "Duck, Duck, Tootle Intervention Package". Data were collected in the following phases: (a) Baseline 1, (b) Treatment 1, (c) Baseline 2, and (d) Treatment 2. The data were visually analyzed for changes in level, trend, and variability between baseline and the treatment conditions (see Chapter III for a discussion of these concepts; Hayes et al., 1999). The following sections will first address individual data (i.e., appropriate behavior, inappropriate behavior, and tootle data) for each target student in respect to each research hypothesis. The median and range of scores for each individual will be used to examine individual responsiveness to the intervention. Within each section, the data of a composite comparative peer will also be presented. Following the individual data, classwide data relevant to the research hypotheses will be presented.

Individual Data by Student

Each student's tootle rates, percentage of inappropriate behaviors (i.e. target behaviors) and off-task behavior percentages will be presented in this section.

Percentages for composite comparisons will also be presented following data for each target student. Individual student data will be presented in order relative to their grade level (i.e., kindergarten, first grade, etc.). The percentage of observed appropriate behavior (i.e., on-task) will be presented first, followed by the target behaviors observed, across each phase first for the target child and then respective the composite comparison peer. The individual data will also be presented in a summative table for each grade. It is important to note that observations for each child were taken using partial interval recording with 10-second intervals for a total of 50 intervals per observation session, with each student being observed for 8.33 minutes per session. Each student was observed across three observation sessions per phase with an alternating method used for the target child and the comparison peers (i.e., every other interval was the target child). Baseline and treatment phases were staggered across each class; thus, each set of target children per grade. The duration of each phase may have been different due to time required for stabilization of the data within data sets.

Kindergarten

The following sections will provide data for the kindergarten class composed of two students, Diego and Jesus and their composite comparison peers (referred to as peers). Kindergarten phases were implemented according to the following duration periods: Baseline 1 was 3 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days.

Diego

Diego was a 5.5-year-old Hispanic kindergartener whose referral concern was out-of-place behavior and inappropriate noise. Diego and his peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following sections present the data for appropriate behavior (i.e., on-task) for Diego and his peer. Data is depicted in graphic and tabular form. Figure 4.1 displays the appropriate behavior exhibited by Diego and his peer during each baseline and intervention condition.

During Baseline 1 phase, Diego exhibited on-task behavior during 30%, 40%, and 30% (*Mdn*=30*)* of the observed intervals. During Treatment 1, Diego exhibited on-task behavior during 50%, 60%, and 60% (*Mdn*=60%) of the observed intervals. During Baseline 2, Diego exhibited on-task behavior during 30%, 30%, and 30% (*Mdn*=30%) of the observed intervals. During Treatment 2, Diego exhibited on-task behavior during 70%, 70%, and 70% (*Mdn*=70%) of the observed intervals.

During Baseline 1, Diego's peer exhibited on-task behavior during 70%, 60%, and 70% (*Mdn*=70%) of the observed intervals. During Treatment 1, Diego's peer exhibited on-task behavior during 90%, 100%, and 100% (*Mdn*=100) of the observed intervals. In Baseline 2, composite comparisons exhibited on-task behavior during 70%, 70%, and 60% (*Mdn*=70) of the observed intervals. During Treatment 2, Diego's peer exhibited on-task behavior during 100%, 100%, and 100% (*Mdn*=100) of the observed intervals.

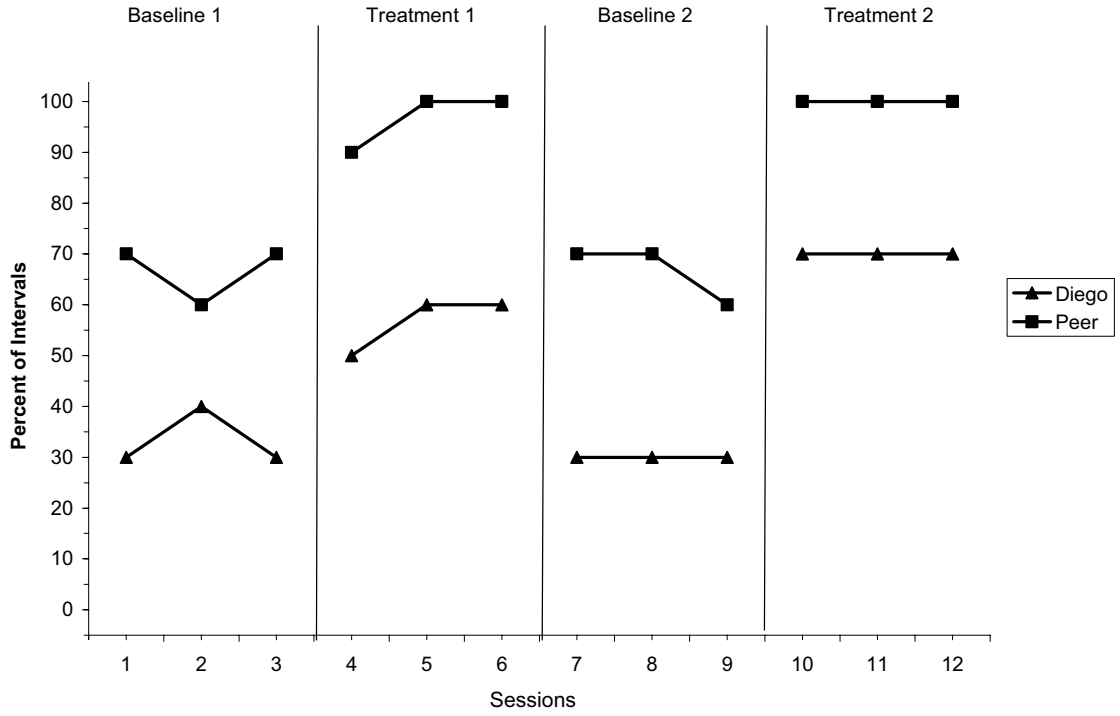

Figure 4.1

Appropriate behavior for Diego and his peer across all phases

Note. Peer = composite comparison peer.

Inappropriate behavior. The following section presents the data for inappropriate behaviors. The identified inappropriate behaviors were (a) out of place behavior (i.e., standing during instructional time, and walking around the classrooms to peers desk and learning centers); and (b) inappropriate noise (i.e., talking to peers during their desks during instruction time). Data is depicted in graphic and tabular form. Figure 4.2 displays the inappropriate behavior exhibited by Diego and his peer during each baseline and intervention condition.

During Baseline 1, Diego exhibited the out-of-place behavior during 70%, 60%, and 70% (*Mdn*=70%) of the observed intervals, and inappropriate noise during 60%, 70%, 60% (*Mdn*=60%) of the observed intervals. During the Treatment 1 phase, Diego exhibited out-of-place behavior during 30%, 40%, and 40% (*Mdn*=40%) of the observed intervals; and inappropriate noise was observed during 40%, 30%, and 20% (*Mdn*=30%) of the intervals. During the Baseline 2 phase, Diego exhibited out-of-place behaviors 60%, 60%, and 70% (*Mdn*=60%) of the observed intervals, and inappropriate noise during 70%, 60% and 70% (*Mdn*=70%) of the observed intervals. During the Treatment 2 phase, Diego exhibited out-of-place behavior during 30%, 20%, and 20% (*Mdn*=20%) of the observed intervals, and inappropriate noise during 30%, 30%, and 20% (*Mdn*=30%) of the observed intervals.

During Baseline 1, Diego's peer demonstrated inappropriate noise during 20%, 20%, and 20% (*Mdn*=20%) of the observed intervals, and out-of-place behavior during 30 %, 20% and 30% (*Mdn*=30%) of the observed intervals. During Treatment 1, Diego's peer exhibited out-of-place behavior during 0%, 0%, and 0% (*Mdn*=0%) of the observed intervals, and inappropriate noise during 10%, 0%, and 0% (*Mdn*=0) of the observed intervals. During Baseline 2, composite comparisons demonstrated out-of-place behaviors 20%, 30% and 20% (*Mdn*=20%) of the observed intervals, and inappropriate noise during 10% 20%, and 20%, (*Mdn*=20%) of the intervals. During the Treatment 2 phase, Diego's peer exhibited out of place behavior during 0%, 20%, and 0% (*Mdn*=0%) of the observed intervals, and inappropriate noise during 0%, 0%, and 0% (*Mdn*=0%) of the observed intervals.

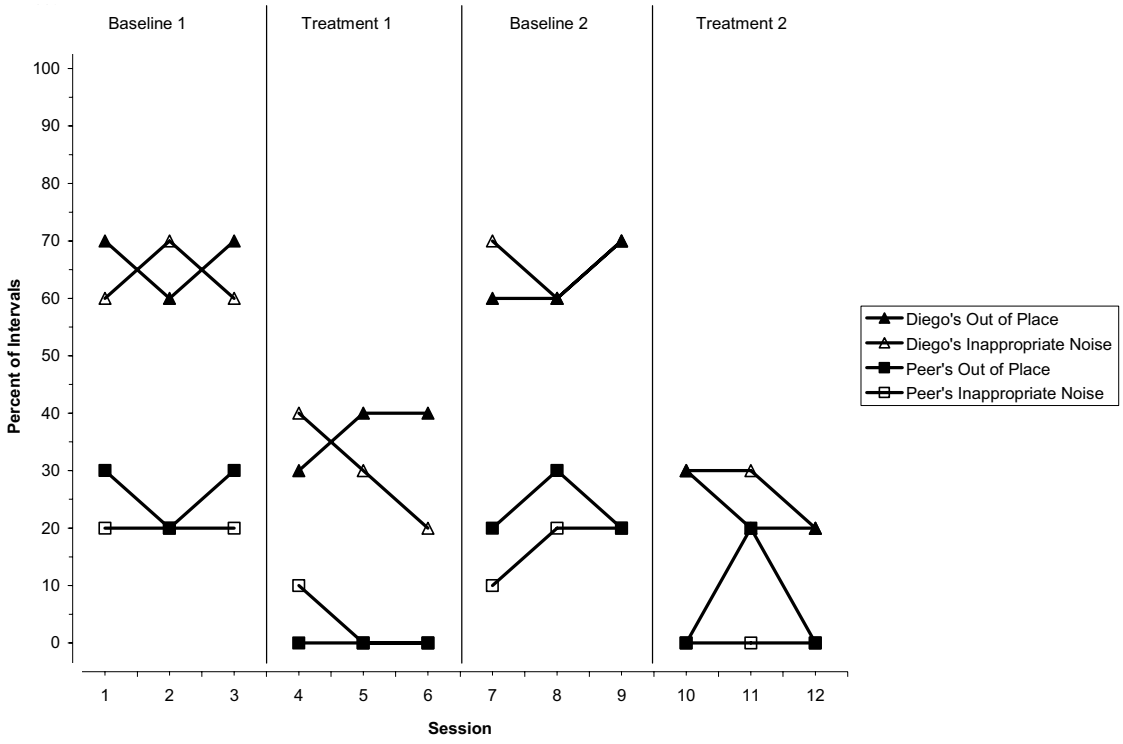

Figure 4.2

Inappropriate behaviors for Diego and his peer across all phases

Note. Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Tootle data. The following section presents the tootle data for Diego and his peer. Daily number of tootles are reported across each phase with mean number of tootles. Data is depicted in graphic form for Diego and his peer in Figure 4.3.

During Baseline 1, Diego received 1, 0, and 0 tootle, (*M*=.33). During Treatment 1, Diego received 4, 5, 7, 5 and 6 tootles (*M*=5.4). In Baseline 2, Diego received 0, 0, 1, 0, and 1 (*M*=.40). In Treatment 2, Diego received 4, 6, and 7 tootles *(M*=5.66).

During Baseline 1, Diego's peer received 4, 5, and 3 tootles (*M*=4). During Treatment 1, Diego's peer received 9, 11, 10, 9 and 10 tootles, (*M*=9.8). During Baseline 2, Diego's peer received 3, 4, 3, 4 and 4 tootles, (*M*=3.6). During Treatment 2, Diego's peer received 7, 8, and 10 tootles (*M*=8.33).

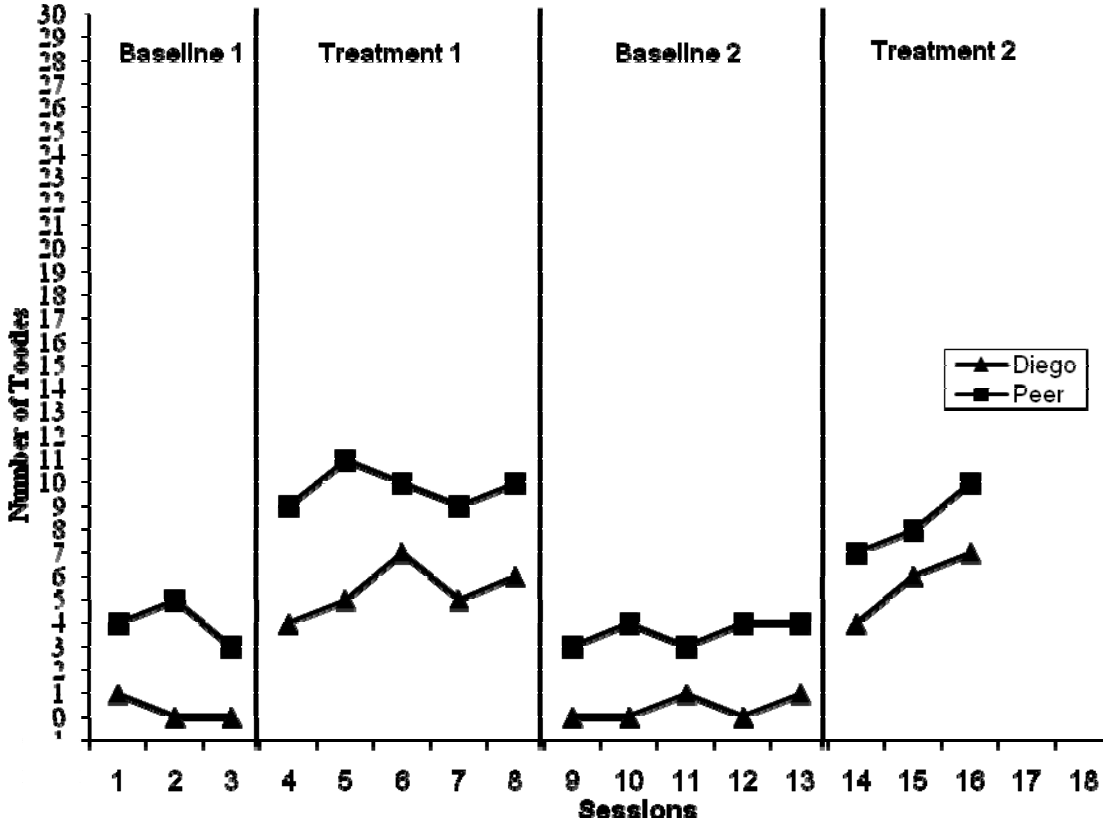

Figure 4.3

Daily number of tootles for Diego and his peer across all phases

Note: Peer = Composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.1 displays the median data (i.e., appropriate and inappropriate behavior and tootles) for Diego and his composite comparison peer (referred to as Diego's peer) during each baseline and intervention condition.

Table 4.1

Diego's and his peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Diego			
Out-of-Place	70%	40%	60%	20%
Inappropriate Noise	60%	30%	70%	30%
On-task	30%	60%	30%	70%
Tootles	.33	5.40	.40	5.66
	Peer			
Out-of-Place	30%	0%	20%	0%
Inappropriate Noise	20%	0%	20%	0%
On-task	70%	100%	70%	100%
Tootles	4.00	9.80	3.60	8.33

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Diego's composite comparison peer.

Jesus

Jesus was a 5.6-year-old Hispanic kindergartener whose referral concern was inappropriate noise and out-of-place behavior. Jesus and his peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following sections present the data for appropriate behaviors for Jesus and his composite comparison peer. Data is depicted in graphic and tabular form. Figure 4.4 displays the appropriate behavior exhibited by Jesus during each baseline and intervention condition.

During Baseline 1, Jesus exhibited on-task behavior during 10%, 0%, and 10% (*Mdn*=10%). During Treatment 1, Jesus exhibited on-task behavior during 60%, 50%, and 60% (*Mdn*=60%). During Baseline 2, Jesus exhibited on-task behavior during 20%, 20%, and 30% of the observed intervals (*Mdn*=20%). During Treatment 2, Jesus exhibited on-task behavior during 80%, 80%, and 90% (*Mdn*=80%) of the observed intervals.

During Baseline 1, Jesus' peer exhibited on-task behavior during 70%. 60%, and 70% (*Mdn*=70%) of the observed intervals. During Treatment 1, the peer exhibited on-task behavior during 80%, 90%, and 90% (*Mdn*=90%). During Baseline 2, the peer exhibited on-task behavior during 70%, 70%, and 70% (*Mdn*=70%) of the observed intervals. During Treatment 2, the peer exhibited on-task behavior during 100%, 90%, and 90% (*Mdn*=90%) of the observed intervals.

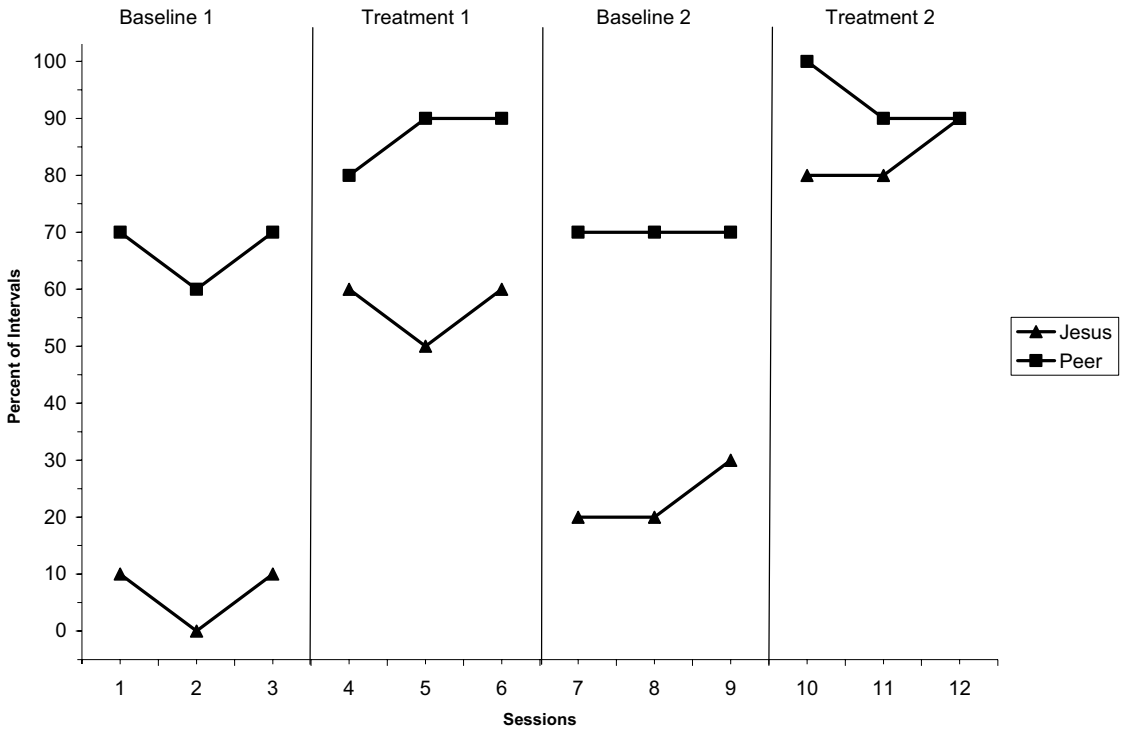

Figure 4.4

Appropriate behavior for Jesus and his peer across all phases

Note: Peer = Composite comparison peer, Tootles=mean number of tootles across days within each phase.

Inappropriate behavior. The following sections present the data for inappropriate behaviors for Jesus and his peer. The identified inappropriate behaviors for Jesus were (a) inappropriate noise (e.g., singing out loud, asking the teacher unrelated questions, talking without raising his hand for permission to speak); and (b) out-of-place behavior (e.g., going to the pencil sharpener, dancing during instructional time, rolling around on the floor during independent seatwork). Data are depicted in graphic and tabular form.

Figure 4.5 displays the inappropriate behavior exhibited by Jesus and his peer during each baseline and intervention condition.

During Baseline 1, Jesus exhibited inappropriate noise during 60%, 70%, 70% (*Mdn*=70%) of the observed intervals; and out-of-place behaviors during 90%, 80%, and 90% (*Mdn*=90%) of the observed intervals. During the Treatment 1 phase, noise was observed during 40%, 40%, and 30% (*Mdn*=40%) of the intervals; and out-of-place behavior was observed during 50%, 40%, and 40% (*Mdn*=40/%) of the observed intervals. During the Baseline 2 phase, Jesus exhibited inappropriate noise during 70%, 80%, and 80% (*Mdn*=80%) of the observed intervals; and out-of-place behaviors were observed during 60%, 60%, and 70% (*Mdn*=60%) of the observed intervals. During the Treatment 2 phase, Jesus exhibited inappropriate noise 40%, 30%, and 40% (*Mdn*=40%) of the observed intervals; and out-of-place behavior during 20%, 30%, and 20% (*Mdn*=20%) of the observed intervals.

In Baseline 1, Jesus' peer exhibited inappropriate noise during 10%, 20%, and 10% (*Mdn*=10%) of the observed intervals; and out-of-place behavior during 20%, 10%, and 10% (*Mdn*=10%) of the observed intervals. During Treatment 1 phase, the peer exhibited noise during 0%, 10%, and 0% (*Mdn*=0%) of the observed intervals; and exhibited out-of-place behavior during 0%, 0%, and 0% (*Mdn*=0%) of the observed intervals. During Baseline 2 phase, the peer exhibited noise during 20%, 10%, and 20% (*Mdn*=20%) of the observed intervals; and demonstrated out-of-place behavior during 20%, 0%, and 10% (*Mdn*=10%) of the observed intervals. In Treatment 2 phase, the peer exhibited noise during 0%, 0%, and 0% (*Mdn*=0%) of the observed intervals; and

exhibited out-of-place behavior during 0 %, 0%, and 0% (*Mdn*=0%) of the observed intervals.

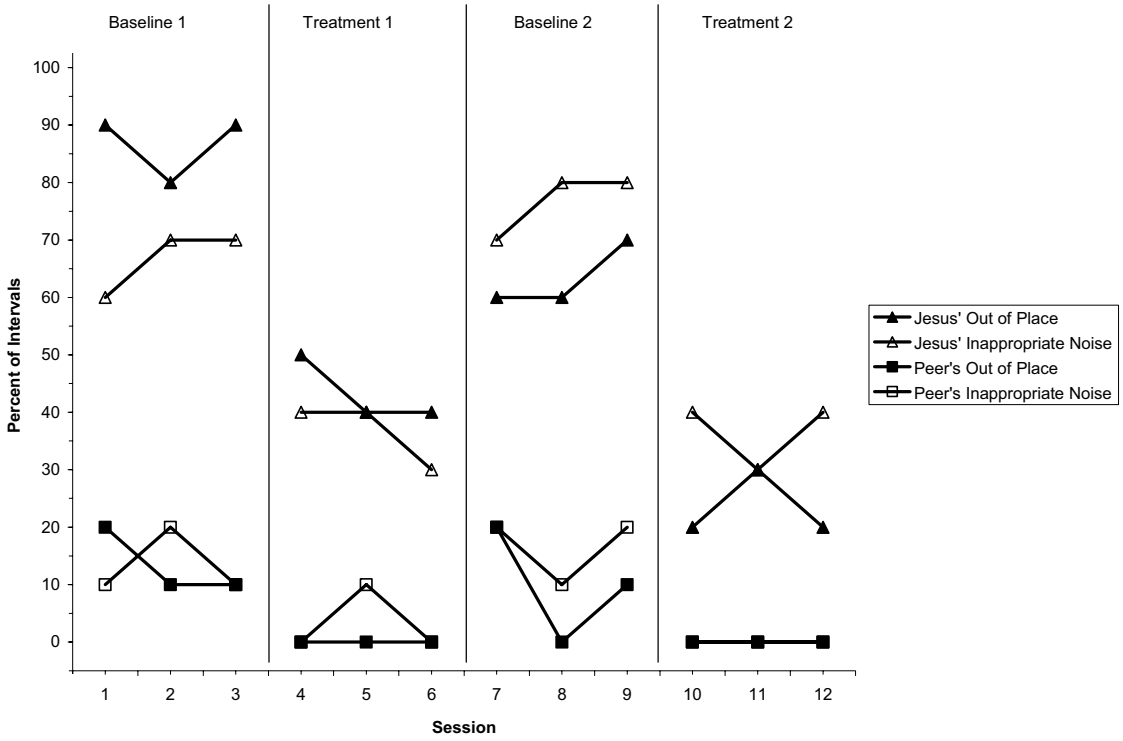

Figure 4.5

Inappropriate behaviors for Jesus and his peer across all phases

Note: Peer = composite comparison peer.

Tootle data. The following section presents the tootle data for Jesus and his peer. Daily number of tootles are reported across each phase. Data are depicted in graphic form for Jesus and his peer in Figure 4.6.

During Baseline 1, Jesus received 0, 0, and 0 tootle, (*M*=0*)*. During Treatment 1, Jesus received 0, 2, 1, 2 and 3 tootles (*M*=1.6). In Baseline 2, Jesus received 0, 0, 0, 0, and 0 (*M*=0). In Treatment 2, Jesus received 1, 2 and 3 tootles *(M*=2).

During Baseline 1, Jesus' peer received 5, 6, and 4 tootles (*M*=5). During Treatment 1, Jesus' peer received 9, 10, 12, 10 and 11 tootles, (*M*=10.4). During Baseline 2, Jesus' peer received 6, 5, 4, 5, and 4 tootles, (*M*=4.8). During Treatment 2, Jesus' peer received 11, 12, and 14 tootles (*M*=12.3).

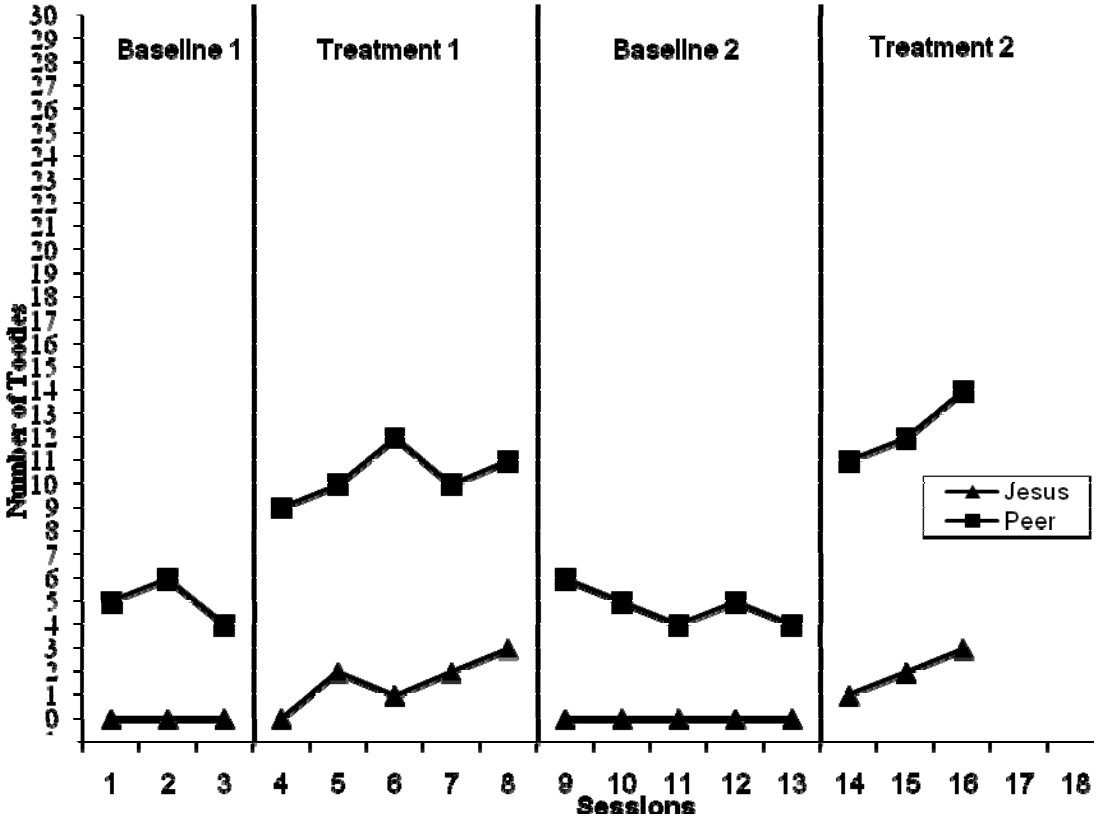

Figure 4.6

Daily number of tootles for Jesus and his peer across all phases

Note. Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.2 displays the median data (i.e., appropriate and inappropriate behavior and tootles) for Jesus and his peer during each baseline and intervention condition.

Table 4.2

Jesus' and his peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Jesus			
Out-of-Place	90%	40%	60%	20%
Inappropriate Noise	70%	40%	80%	40%
On-task	10%	60%	20%	80%
Tootles	0.00	1.60	0.00	2.00
	Peer			
Out-of-Place	10%	0%	0%	0%
Inappropriate Noise	10%	0%	20%	0%
On-task	70%	90%	70%	90%
Tootles	5.00	10.40	4.80	12.30

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Jesus' composite comparison peer.

First Grade

The following sections will provide data for the first grade class composed of two students, Angela and Dalia. First grade phases were implemented according to the following duration periods: Baseline 1 was 7 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days. Students were observed across 3 sessions per phase.

Angela

Angela was a 6.3-year-old Caucasian first grader whose referral concern was inattention and inappropriate noise. Angela and her peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following sections present the data for appropriate behaviors for Angela and her composite comparison peer. Data is depicted in graphic and tabular form. Figure 4.7 displays the appropriate behavior exhibited by Angela during each baseline and intervention condition.

During Baseline 1 phase, Angela exhibited on-task behavior during 20%, 30%, and 30% (*Mdn*=30%). During Treatment 1 phase, Angela exhibited on-task behavior was during 60%, 70%, and 70% (*Mdn*=70%). In Baseline 2 phase, Angela exhibited on-task behavior during 30%, 40%, and 40% *(Mdn*=40%). During Treatment 2 phase, Angela exhibited on-task behavior during 70%, 80%, and 90% (*Mdn*=80%).

During Baseline 1, Angela's peer exhibited on-task behavior during 60%, 60%, and 60% (*Mdn*=60%). During Treatment 1, Angela's peer exhibited 80%, 80%, and 80%

of on-task behavior (*Mdn*= 80%). During Baseline 2, Angela's peer exhibited on-task behavior during 60%, 50%, and 60% (*Mdn*=60%) of the observed intervals. During Treatment 2 phase, peer on-task behavior was during 90%, 90%, 100% (*Mdn*=90%).

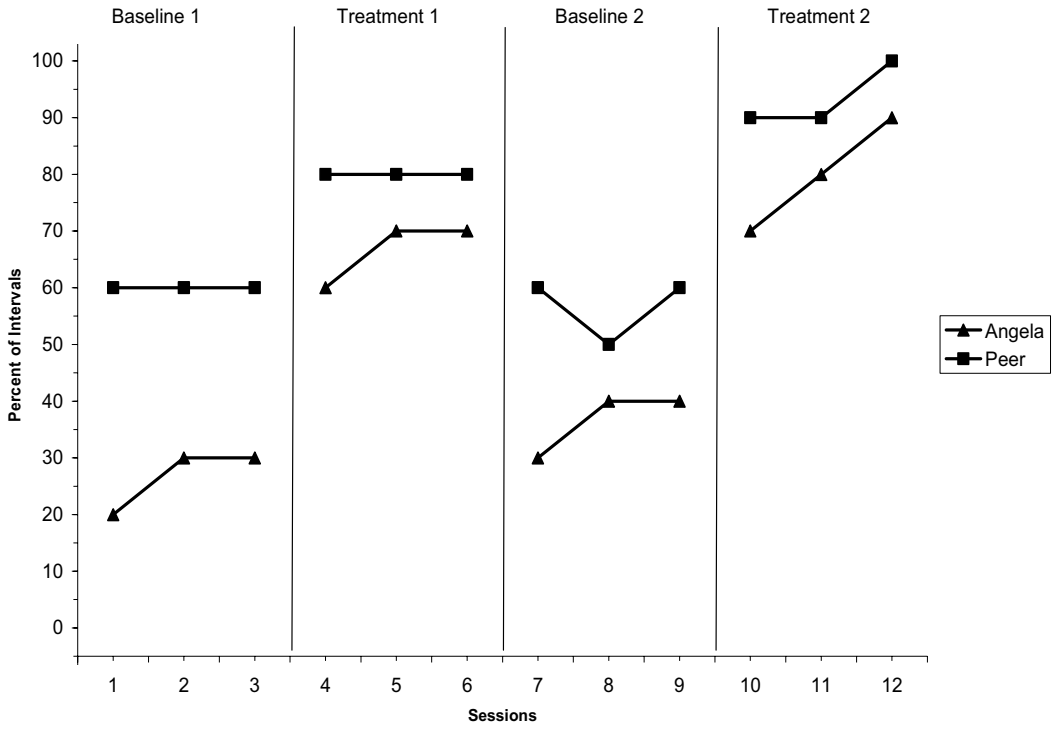

Figure 4.7

Appropriate behavior for Angela and her peer across all phases

Note: Peer = Composite comparison peer.

Inappropriate behavior. The following sections present the data for inappropriate behaviors for Angela and her peer. The following two targeted inappropriate behaviors were identified for Angela (a) inattentive behavior (e.g., looking around the room, playing with supplies during her desk including pencils and erasers, and drawing); and

(b) inappropriate noise (e.g., talking to peers seated in close proximity to her). These behaviors were tracked for Angela and her peer across all four phases and are depicted in graphic and tabular form. Figure 4.8 displays the inappropriate behavior exhibited by Angela during each baseline and intervention condition.

During Baseline 1, Angela exhibited inattentive behavior during 70%, 70%, and 70% (*Mdn*=70%) of the observed intervals; and exhibited inappropriate noise during 40%, 50%, 50% (*Mdn*=50%) of the observed intervals. During the Treatment 1 phase, Angela was observed to exhibit inattentive behavior during 20%, 30%, and 30% (*Mdn*=30/%) of the observed intervals; and noise was observed during 30%, 20%, and 30% (*Mdn*=30%) of the observed intervals. During the Baseline 2 phase, Angela exhibited inattentive behaviors during 60%, 60%, and 70% (*Mdn*=60%) of the observed intervals; and inappropriate noise was observed during 60%, 70%, and 60% (*Mdn*=60%) of the intervals. During the Treatment 2 phase, Angela exhibited inattentive behavior during 20%, 30%, and 30% of the observed intervals (*Mdn*=30%); and inappropriate noise during 40%, 30%, and 30% (*Mdn*=30%) of the observed intervals.

Angela's peer demonstrated inattentive behavior during 30%, 40%, and 30% (*Mdn*=30%) of the observed intervals; and she exhibited inappropriate noise during40%, 40%, and 40% (*Mdn*=40%) of the observed intervals. During Treatment 1, the peer exhibited inattentive behaviors during 10 %, 0%, and 10% (*Mdn*=10%) of the observed intervals; and exhibited inappropriate noise during 20%, 20%, and 10% (*Mdn*=20%) of the observed intervals. During Baseline 2, the peer engaged in inattentive behavior during 40%, 30%, and 40% (*Mdn*=40%) of the observed intervals; and demonstrated inappropriate noise during 30%, 30%, and 30%, (*Mdn*=30%) of the intervals. During the

Treatment 2 phase, the peer exhibited inattentive behaviors during 0%, 10%, and 10% (*Mdn*=10%) of the observed intervals; and exhibited inappropriate noise during 10%, 0%, and 0% (*Mdn*=0%) of the observed intervals.

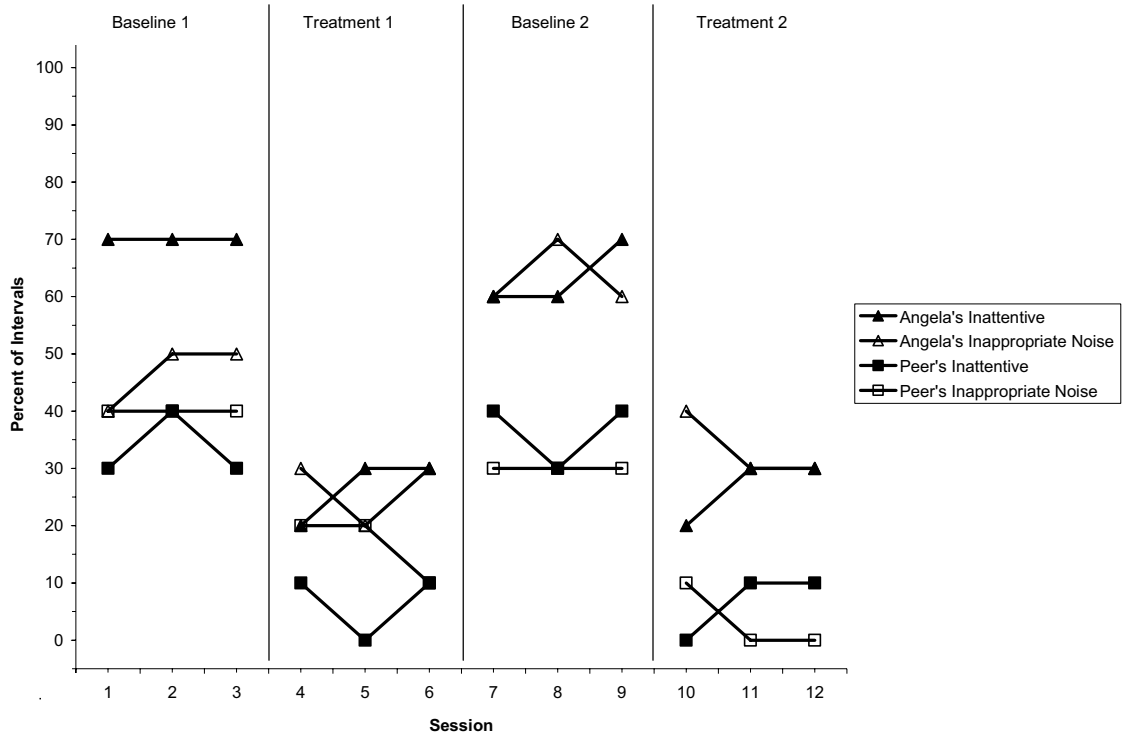

Figure 4.8

Inappropriate behaviors for Angela and her peer across all phases

Note: Peer = Composite comparison peer.

Tootle data. The following section presents the tootle for Angela and her peer. Daily number of tootles are reported across each phase. Data are depicted in graphic form in Figure 4.9.

During Baseline 1, Angela received 1, 0, 0, 0, 0, 0 and 0 tootle, (*M*=.14*)*. During Treatment 1, Angela received 1, 1, 1, 2 and 2 tootles (*M*=1.4). In Baseline 2, she received 0, 0, 0, 0, and 0 (*M*=0). In Treatment 2, she received 2, 1, and 3 tootles *(M*=2).

During Baseline 1, Angela's peer received 7, 8, 6, 5, 6, 6, and 4 tootles (*M*=6). During Treatment 1, her peer received 10, 12, 13, 11, and 15 tootles, (*M*=12.2). During Baseline 2, the peer received 6, 5, 6, 5, and 4 tootles, (*M*=5.2). During Treatment 2, the peer received 12, 15, and 16 tootles (*M*=14.3).

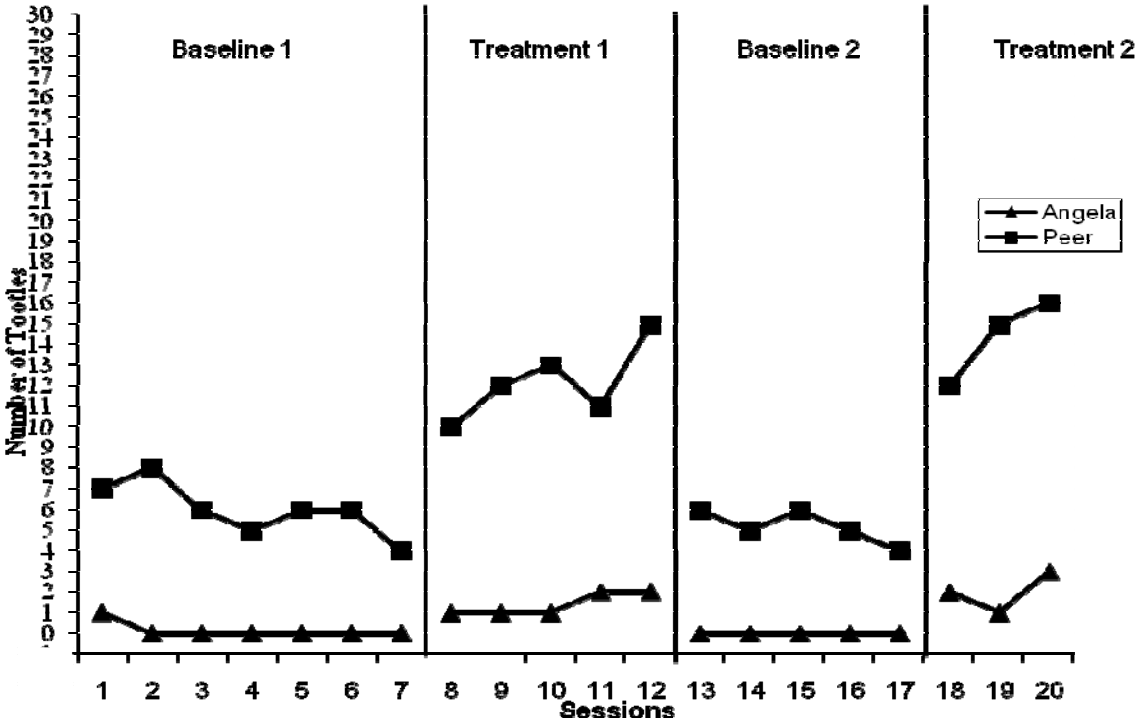

Figure 4.9

Daily number of tootles for Angela and her peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.3 displays the median data (i.e., appropriate and inappropriate behavior and tootles) for Angela and her peer during each baseline and intervention condition.

Table 4.3

Angela's and her peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Angela			
Inattentive	70%	30%	60%	30%
Inappropriate Noise	50%	30%	60%	30%
On-task	30%	70%	40%	80%
Tootles	.14	1.40	0.00	2.00
	Peer			
Inattentive	30%	10%	40%	10%
Inappropriate Noise	40%	20%	30%	0%
On-task	60%	80%	60%	90%
Tootles	6.00	12.2	5.20	14.3

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Angela's composite comparison peer.

Dalia

Dalia was a 6.5-year-old Caucasian first grader whose referral concern was inattention and inappropriate noise. Dalia and her peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following section present the data for appropriate behaviors for Dalia and her composite comparison peer. Data is depicted in graphic and tabular form. Figure 4.10 displays the appropriate behavior exhibited by Dalia and composite comparisons during each baseline and intervention condition.

During Baseline 1, Dalia exhibited on-task behavior during 40%, 40%, and 30% (*Mdn*=40%). During Treatment 1, on-task behavior was during 60%, 60%, and 60% (*Mdn*=60%). During Baseline 2, Dalia exhibited on-task behavior during 40%, 50%, and 40% *(Mdn*=40%). During Treatment 2, Dalia exhibited on-task behavior during 60%, 80%, and 80% (*Mdn*=80%).

During Baseline 1, the peer exhibited on-task behavior during 70%, 60%, and 60% (*Mdn*=60%). During Treatment 1, composite comparisons exhibited on-task behavior during 70%, 70%, and 80% of on-task behavior (*Mdn*= 70%). During Baseline 2, composite comparisons exhibited on-task behavior during 70%, 60%, and 70% (*Mdn*=70%) of the observed intervals. During Treatment 2 phase, composite comparisons on-task behavior was during 100%, 100%, 100% (*Mdn*=100%).

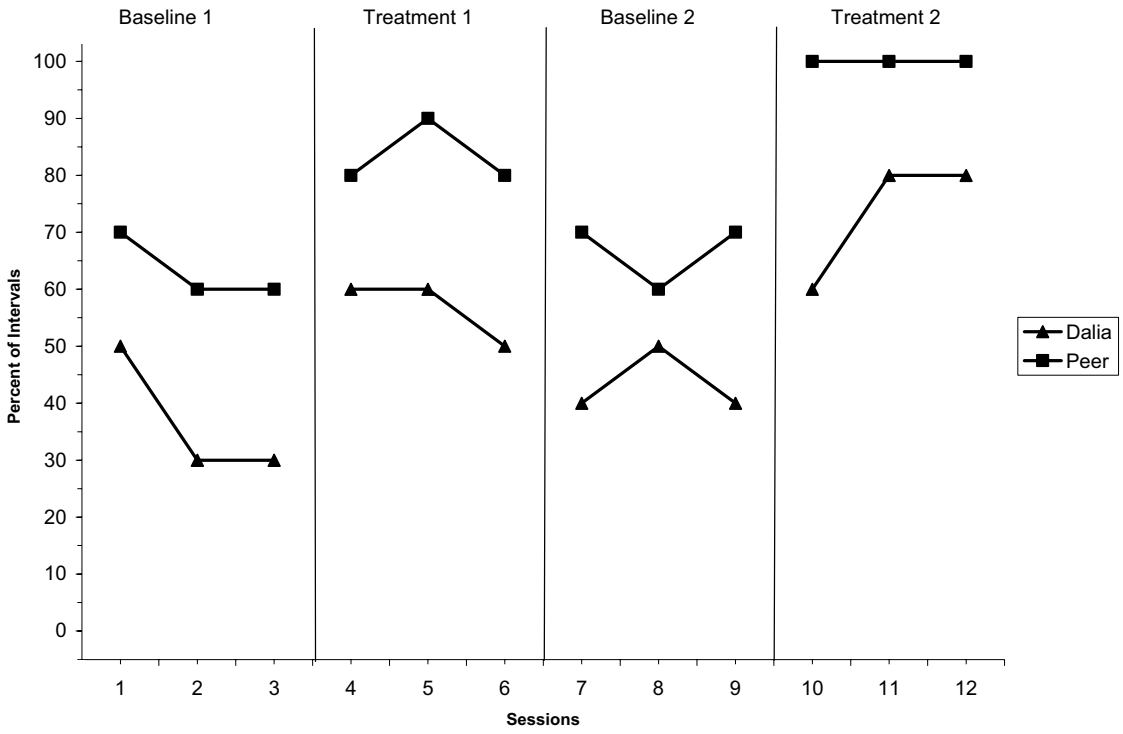

Figure 4.10

Appropriate behavior for Dalia and her peer across all phases

Note: Peer = Composite comparison peer.

Inappropriate behavior. The following sections present the data for inappropriate behaviors for Dalia and her composite comparison peer. Data is depicted in graphic and tabular form. Figure 4.11 displays the inappropriate behavior exhibited by Dalia during each baseline and intervention condition.

The following two targeted inappropriate behaviors, inattentive behavior and inappropriate noise, were identified for Dalia. These behaviors were tracked for Dalia across each condition. These same behaviors were tracked across the four conditions for composite comparisons. The data showed that Dalia exhibited the following

inappropriate behaviors during Baseline 1: (a) Inattentive behavior was observed 60%, 50%, and 40% (*Mdn*=50%) of the observed intervals and; (b) inappropriate noise was observed 80%, 70%, 70% (*Mdn*=70%) of the observed intervals. Dalia's inattentive behavior consisted of Dalia frequently daydreaming and drawing during her desk. Inappropriate noise displayed by Dalia consisted of Dalia talking to peers and singing aloud. During the Treatment 1 phase, Dalia was observed to exhibit inattentive behavior 20%, 30%, and 20% (*Mdn*=20/%) of the observed intervals. In Treatment 1 phase, noise was observed during 40%, 30%, and 20% (*Mdn*=30%) of the observed intervals. During the Baseline 2 phase, Dalia exhibited inattentive behaviors during 50%, 60%, and 60% (*Mdn*=60%) of the observed intervals; and; inappropriate noise was observed during 70%, 80%, and 70% (*Mdn*=70%). During the Treatment 2 phase, Dalia exhibited inattentive behavior during 20%, 20%, and 20% of the observed intervals (*Mdn*=20%)., and inappropriate noise during 30%, 20%, and 10% (*Mdn*=20%) of the observed intervals.

During Baseline 1, Dalia's peer demonstrated noise 30%, 30%, and 40% (*Mdn*=30%) of the observed intervals, In Baseline 1 phase, inattentive behavior during 40%, 40%, and 40% (*Mdn*=40%) of the observed intervals. During Treatment 1, the peer exhibited noise during 20%, 0%, and 0% (*Mdn*=0%) of the observed intervals. In Treatment 1, the peer exhibited 10 %, 10% and 10% (*Mdn*=10%) of inattentive behavior. During Baseline 2, the peer demonstrated inattentive behaviors during 40%, 30%, and 30% (*Mdn*=30%) of the observed intervals. In Baseline 2, Inappropriate noise was observed from the peer during 40%, 40%, and 40%, (*Mdn*=40%). During the Treatment 2 phase, composite comparisons exhibited inattentive behaviors during 20%, 10%, and

0% (*Mdn*=10%) of the observed intervals. In Treatment 2 phase, the peer exhibited inappropriate noise during 10, %, 0%, and 0% (*Mdn*=0%) of the observed intervals.

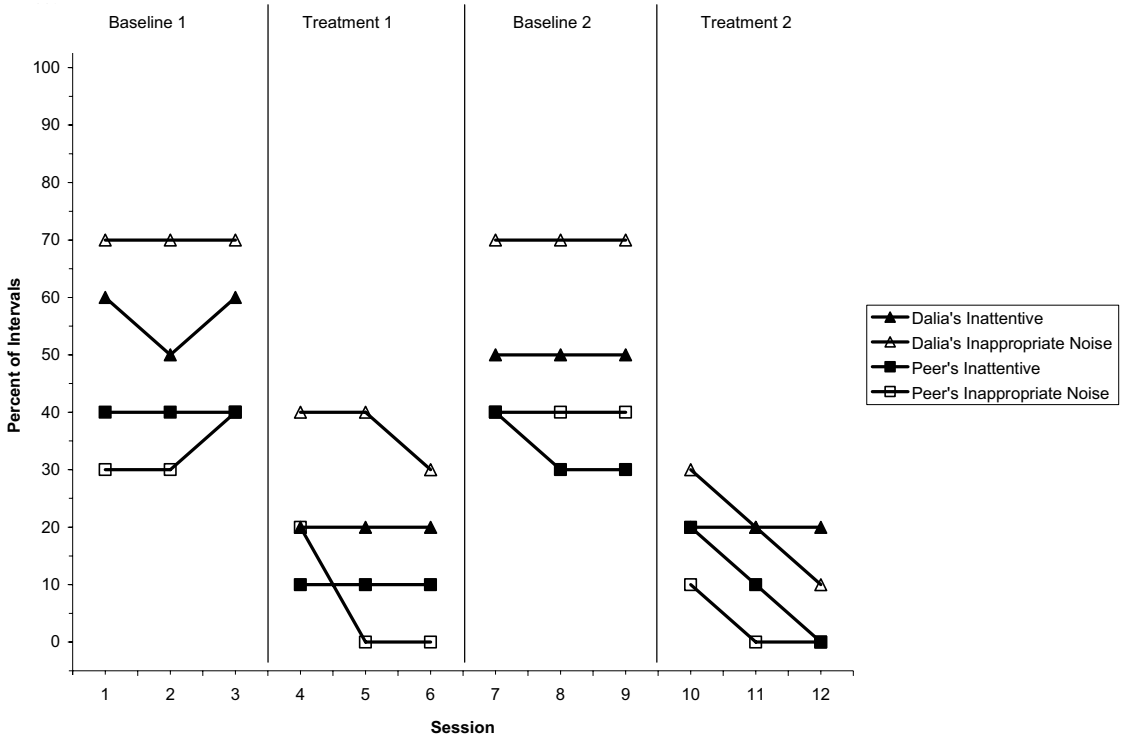

Figure 4.11

Inappropriate behavior for Dalia and her peer across all phases

Note: Peer = Composite comparison peer.

Tootle data. The following section presents the tootle data for Dalia and Dalia's peer. Daily number of tootles are reported across each phase. Data are depicted in graphic form for Dalia and her peer in Figure 4.12

During Baseline 1, Dalia received 0, 1, 0, 0, 0, 0, and 1 tootle, (*M*=.28*).* During Treatment 1, Dalia received 3, 3, 2, 2 and 3 tootles (*M*=2.6). In Baseline 2, Dalia received 0, 0, 0, 0, and 0 (*M*=0). In Treatment 2, Dalia received 2, 3, and 4 tootles *(M*=3).

During Baseline 1, Dalia's peer received 5, 6, 4, 5, 4, 3 and 3 tootles (*M*=4.28). During Treatment 1, Dalia's peer received 7, 9, 10, 12, and 11 tootles, (*M*=9.8). During Baseline 2, Dalia's peer received 4, 3, 4, 3, and 3 tootles, (*M*=3.4). During Treatment 2, Dalia's peer received 9, 11, and 12 tootles (*M*=10.6).

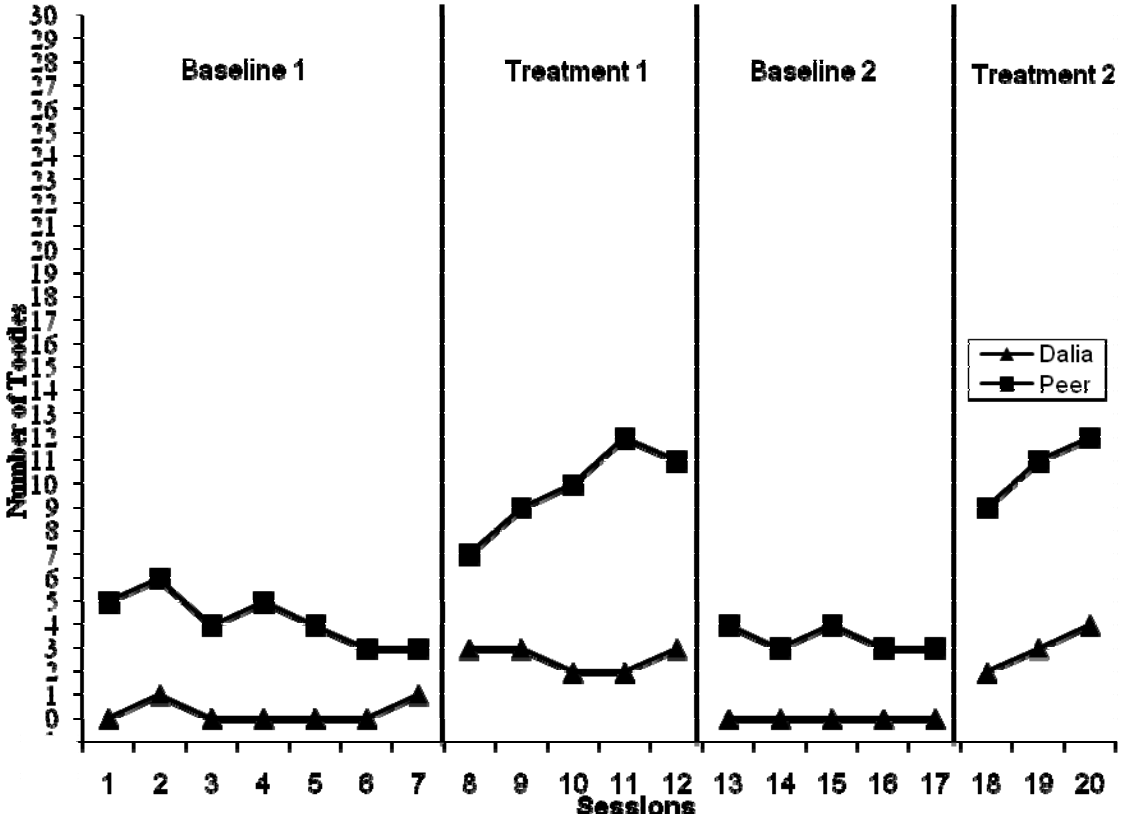

Figure 4.12

Daily number of tootles for Dalia and her peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.4 displays the median data (i.e., appropriate and inappropriate behavior) and mean data (i.e., tootles) for Dalia and her peer during each baseline and intervention condition.

Table 4.4

Dalia's and her peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Dalia			
Inattention	50%	20%	60%	20%
Inappropriate Noise	70%	30%	70%	20%
On-task	40%	60%	40%	80%
Tootles	.28	2.60	0.00	3.00
	Peer			
Inattention	40%	10%	30%	10%
Inappropriate Noise	30%	0%	40%	0%
On-task	60%	70%	70%	100%
Tootles	4.28	9.80	3.40	10.60

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Dalia's composite comparison peer.

Second Grade

The following sections will provide data for the second grade class composed of two students, Deandre and Elias. Second grade phases were implemented according to the following duration periods: Baseline 1 was 4 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days.

Deandre

Deandre was a 7.5 year-old African American male whose referral concern was out-of-place behavior and inattentive behavior. Deandre and his peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following sections present the data for appropriate behaviors for Deandre and his composite comparison peer. Figure 4.13 displays the appropriate behavior exhibited by Deandre during each baseline and intervention condition.

During Baseline 1 phase, exhibited on-task behavior during 20%, 20%, and 20% (*Mdn*=20%) of the observed intervals. During Treatment 1, Deandre exhibited on-task behavior during 60%, 70%, and 80% (*Mdn*=70%) of the observed intervals. During Baseline 2, Deandre exhibited on-task behavior during 30%, 30%, and 30% *(Mdn*=30%) of the observed intervals. During Treatment 2, Deandre exhibited on-task behavior during 70%, 70%, and 80% (*Mdn*=70%) of the observed intervals.

During Baseline 1, Deandre's peer exhibited on-task behavior during 90%, 90%, and 90% (*Mdn*=90%) of the observed intervals. During Treatment 1, the peer exhibited on-task behavior during 100%, 100%, and 100% of on-task behavior (*Mdn*= 100%) of the observed intervals. During Baseline 2, the peer exhibited on-task behavior during 90%, 100%, and 90% (*Mdn*=90%) of the observed intervals. During Treatment 2 phase, peer on-task behavior was during 100%, 100%, 100% (*Mdn*=100%) of the observed intervals.

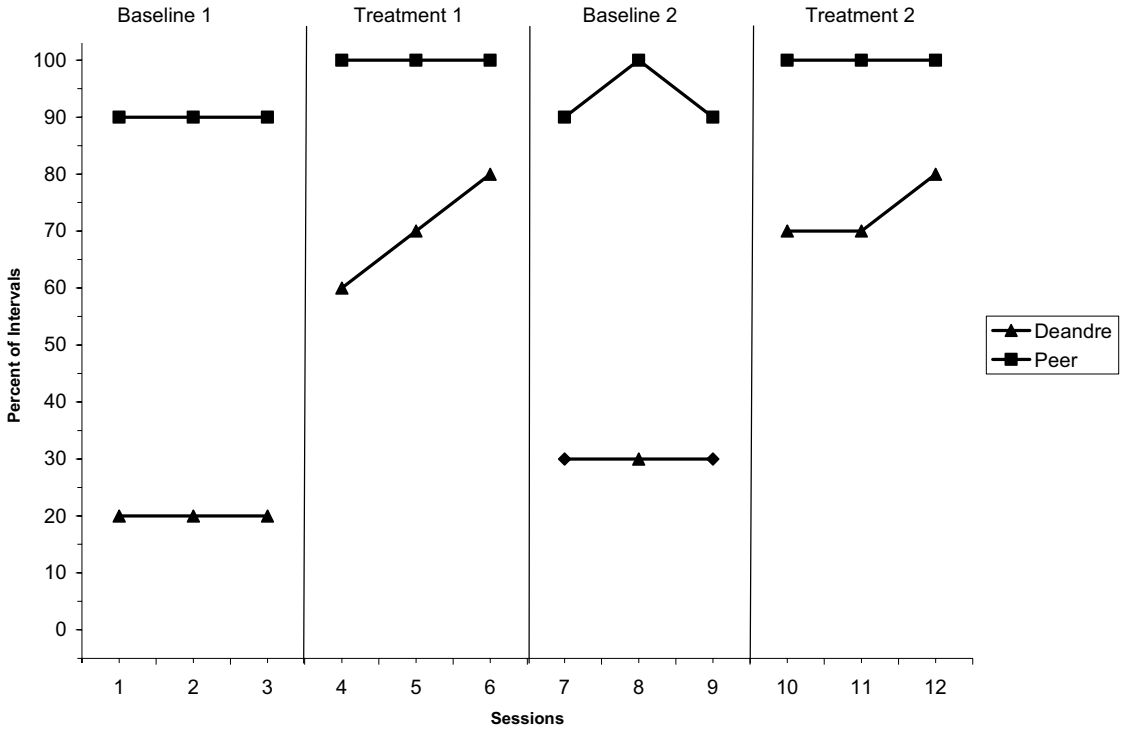

Figure 4.13

Appropriate behavior for Deandre and his peer across all phases

Note. Peer = composite comparison peer.

Inappropriate behavior. The following sections present the data for inappropriate behaviors for Deandre and his composite comparison peer. The following two targeted inappropriate behaviors were identified for Deandre (a) out-of-place behavior (e.g., throwing away paper without permission); and (b) inattention (e.g., making paper airplanes and paper spinners which were often aggressively crumpled up or torn in pieces). It is important to note that on occasion prior to inattention, Deandre exhibited active work refusal, despite directives. Figure 4.14 displays the inappropriate behavior exhibited by Deandre during each baseline and intervention condition.

During Baseline 1 phase, Deandre exhibited out of place behavior during 80%, 80%, and 80% (*Mdn*=80%) of the observed intervals; and inattention was observed during 70%, 80%, 70% (*Mdn*=70%) of the observed intervals. During the Treatment 1 phase, Deandre was observed to exhibit out-of-place behavior during 30%, 40%, and 30% (*Mdn*=30/%) of the observed intervals; and inattention was observed during 30%, 30%, and 30% (*Mdn*=30%) of the intervals. During the Baseline 2 phase, Deandre exhibited out-of-place behaviors during 40%, 50%, and 50% (*Mdn*=50%) of the observed intervals; and inattention was observed during 60%, 70%, and 70% (*Mdn*=70%) of the intervals. During the Treatment 2 phase, Deandre exhibited out-of-place behavior during 20%, 20%, and 20% of the observed intervals (*Mdn*=20%), and inattention during 30%, 20%, and 10% (*Mdn*=20%) of the observed intervals.

During Baseline 1, Deandre's peer demonstrated out-of-place behavior during 10%, 10%, and 10% (*Mdn*=10%) of the observed intervals and inattentive behavior during 20%, 10%, and 20% (*Mdn*=20%) of the intervals. During Treatment 1, the peer exhibited out-of-place behavior during 10%, 0%, and 0% (*Mdn*=0%) of the observed

intervals and inattentive behavior during 10 %, 10%, and 10% (*Mdn*=10%) of the intervals. During Baseline 2, the peer demonstrated out-of-place behavior during 10%, 20%, and 20%, (*Mdn*=20%) of the observed intervals and inattentive behaviors during 10%, 20%, and 10% (*Mdn*=10%) of the intervals. During the Treatment 2 phase, the peer exhibited out-of-place during 0, %, 0%, and 0% (*Mdn*=0%) of the observed intervals and inattentive behaviors during 0%, 0%, and 0% (*Mdn*=0%) of the intervals.

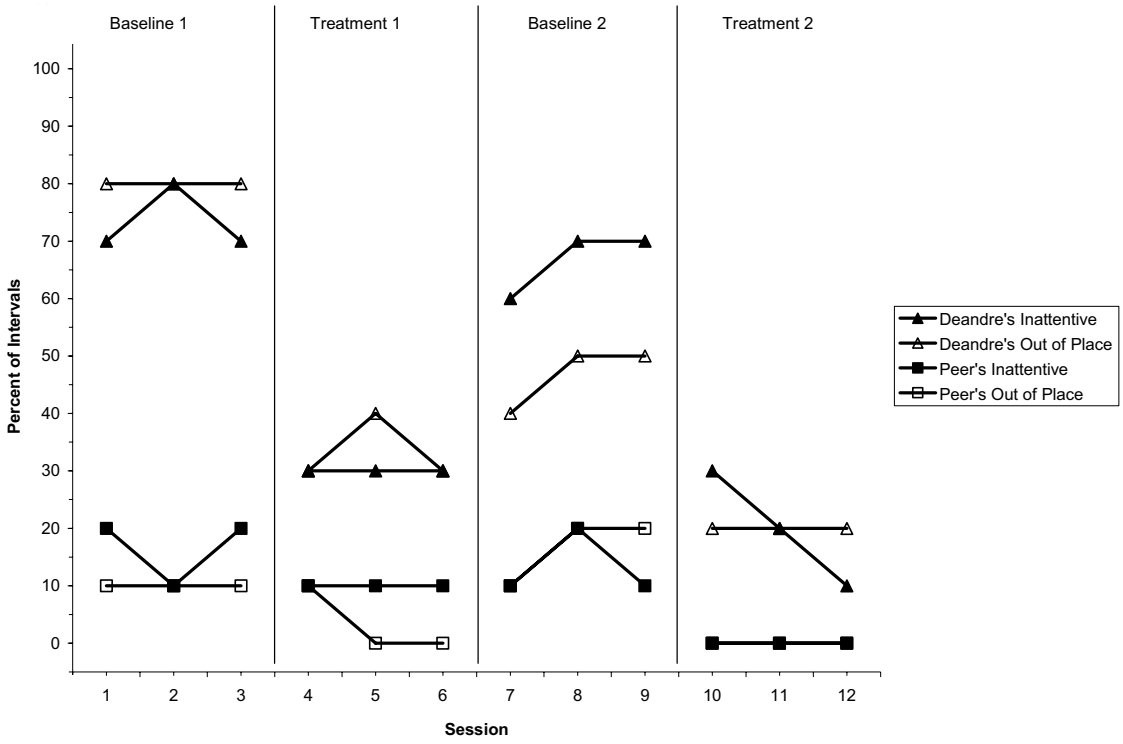

Figure 4.14

Inappropriate behaviors for Deandre and his peer across all phases

Note. Peer = composite comparison peer.

Tootle data. The following section presents the tootle data for Deandre and his peer. Daily number of tootles are reported across each phase. Data are depicted in Figure 4.15.

During Baseline 1, Deandre received 0, 0, 0, and 0 tootles, (*M*=0*).* During Treatment 1, he received 1, 0, 1, 0 and 1 tootles (*M*=.40). In Baseline 2, Deandre received 0, 0, 0, 0, and 0 (*M*=0). In Treatment 2, he received 1, 0, and 1 tootles *(M*=.66).

During Baseline 1, Deandre's peer received 11, 10, 9, and 9 tootles (*M*=9.75). During Treatment 1, the peer received 17, 16, 18, 16 and 17 tootles, (*M*=16.8). During Baseline 2, the peer received 10, 9, 8, 9, and 8 tootles (*M*=8). During Treatment 2, the peer received 17, 18, and 20 tootles (*M*=18.3). Table 4.5 displays the median data (i.e., appropriate and inappropriate behavior) and mean data (tootles) for Deandre and his peer during each baseline and intervention condition.

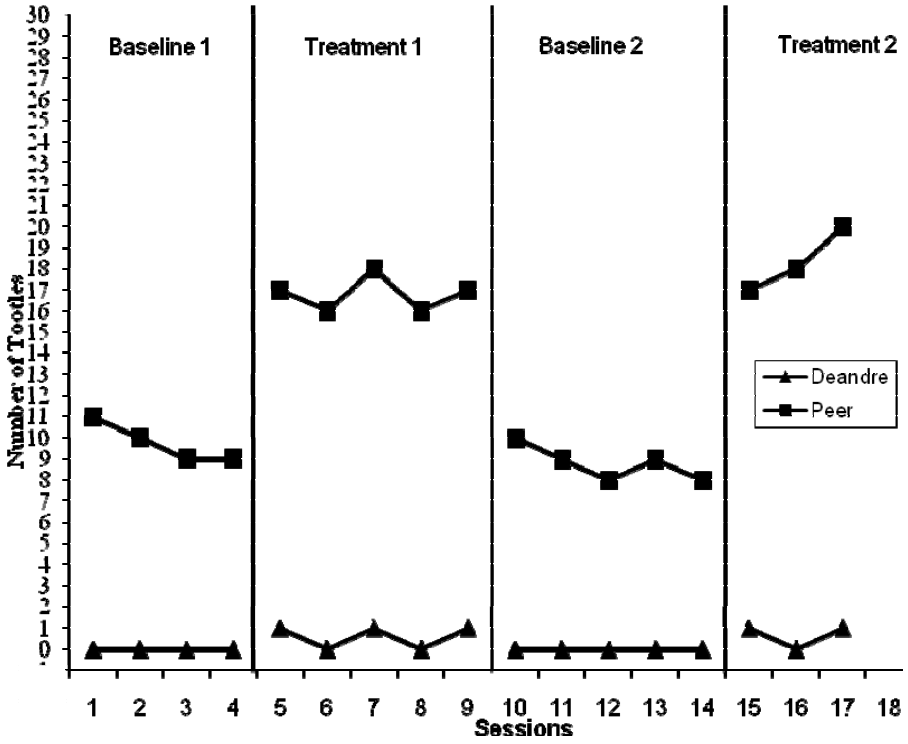

Figure 4.15

Daily number of tootles for Deandre and his peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.5

Deandre's and his peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Deandre			
Out-of-Place	80%	30%	50%	20%
Inattentive	70%	30%	70%	20%
On-task	20%	70%	30%	70%
Tootles	0.00	0.40	0.00	0.66
	Peer			
Out-of-Place	10%	0%	20%	0%
Inattentive	20%	10%	10%	0%
On-task	90%	100%	90%	100%
Tootles	9.75	16.80	8.00	18.30

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Deandre's composite comparison peer.

Elias

Elias was a 7.5 year-old Hispanic male whose referral concern was inattention and out-of-place behaviors. Elias and his peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following sections present the data for appropriate behaviors for Elias and his composite comparison peer. Figure 4.16 displays the appropriate behavior exhibited by Elias and his peer during each baseline and intervention phase.

During Baseline 1, Elias exhibited on-task behavior during 30%, 40%, and 30% (*Mdn*=30%) of the observed intervals. During Treatment 1, on-task behavior was during 70%, 80%, and 90% (*Mdn*=80%) of the observed intervals. During Baseline 2, Elias exhibited on-task behavior during 30%, 30%, and 30% *(Mdn*=30%) of the intervals. During Treatment 2, Elias exhibited on-task behavior during 90%, 100%, and 100% (*Mdn*=100%) of the intervals.

During Baseline 1, Elias' peer exhibited on-task behavior during 90%, 80%, and 90% (*Mdn*=90%) of the observed intervals. During Treatment 1, the peer exhibited on-task behavior during 100%, 100%, and 100% (*Mdn*= 100%) of the intervals. During Baseline 2, the peer exhibited on-task behavior during 80%, 80%, and 80% (*Mdn*=80%) of the observed intervals. During Treatment 2 phase, peer on-task behavior was observed during 100%, 100%, 100% (*Mdn*=100%) of the intervals.

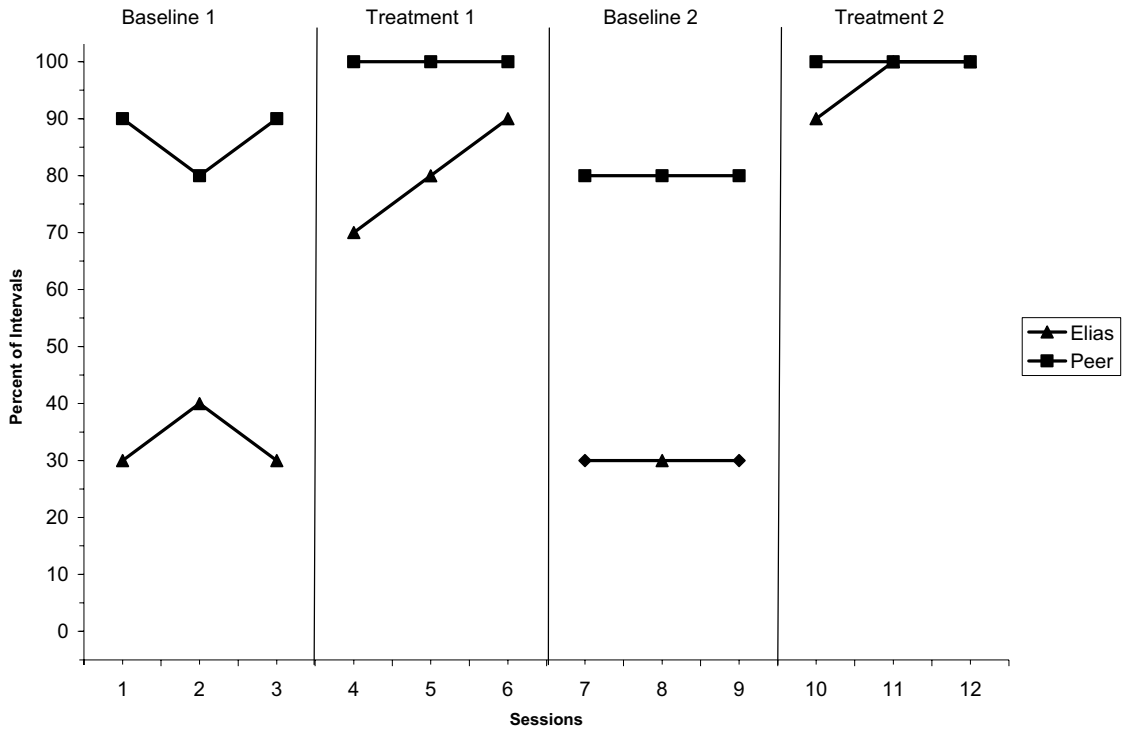

Figure 4.16

Appropriate behavior for Elias and his peer across all phases

Note: Peer = composite comparison peer.

Inappropriate behavior. The following sections present the data for inappropriate behaviors for Elias and his composite comparison peer. The following two targeted inappropriate behaviors were identified for Elias (a) inattentive behavior (e.g., sleeping in class and looking around the classroom); and (b) out-of-place behavior (e.g., standing opposed to sitting at desk). Figure 4.17 displays the inappropriate behavior exhibited by Elias and his peer during each baseline and intervention phase.

During Baseline 1, Elias exhibited inattentive behavior during 60%, 70%, and 70% (*Mdn*=70%) of the observed intervals; and out-of-place behavior was observed during 50%, 50%, 60% (*Mdn*=50%) of the observed intervals. During the Treatment 1 phase, Elias was observed to exhibit inattentive behavior 30%, 20%, and 20% (*Mdn*=20/%) of the observed intervals; and out-of-place behavior was observed during 10%, 0%, and 0% (*Mdn*=0%) of the observed intervals. During the Baseline 2 phase, Elias exhibited inattentive behaviors during 60%, 70%, and 70% (*Mdn*=70%) of the observed intervals; and out-of-place behavior was observed during 50%, 50%, and 50% (*Mdn*=50%). During the Treatment 2 phase, Elias exhibited inattentive behavior during 10%, 10%, and 10% (*Mdn*=10%) of the observed intervals; and out-of-place behavior was observed during 0%, 0%, and 0% (*Mdn*=0%) of the intervals.

During Baseline 1, Elias' peer demonstrated inattentive behavior during 30%, 30%, and 30% (*Mdn*=30%) of the observed intervals; and out-of-place behavior was observed in the peer during 20%, 10%, and 0% (*Mdn*=10%) of the observed intervals. During Treatment 1, the peer exhibited inattentive behavior during 20 %, 10% and 0% (*Mdn*=10%) of the observed intervals; and out-of-place behavior was observed during 0%, 0%, and 0% (*Mdn*=0%) of the intervals. During Baseline 2, the peer demonstrated inattentive behaviors during 20%, 30%, and 10% (*Mdn*=20%) of the observed intervals; and out-of-place behavior was observed during 20%, 20%, and 20% (*Mdn*=20%) of the intervals. During the Treatment 2 phase, Elias' peer exhibited inattentive behaviors during 20%, 10%, and 0% (*Mdn*=10%) of the observed intervals; and out-of-place behavior was observed during 0%, 0%, and 0% (*Mdn*=0%) of the intervals.

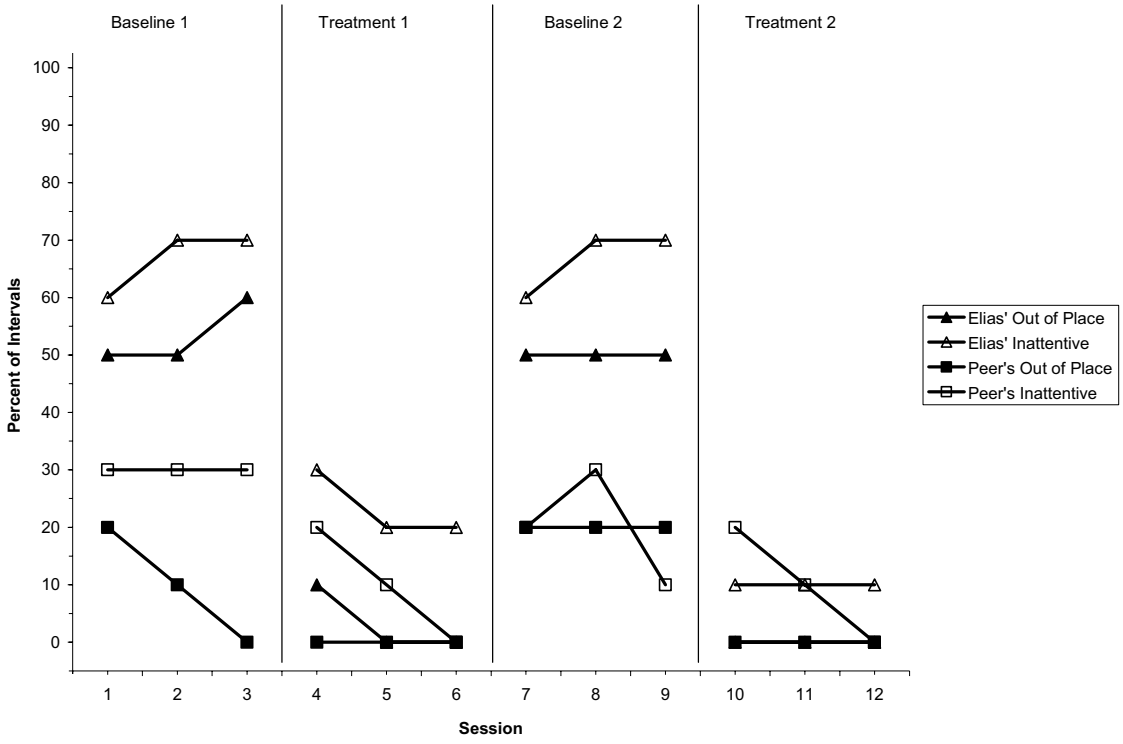

Figure 4.17

Inappropriate behavior for Elias and his peer across all phases

Note. Peer = composite comparison peer.

Tootle data. The following section presents the tootle data for Elias and his peer. Daily number of tootles are reported across each phase. Data are depicted in Figure 4.18.

During Baseline 1, Elias received 1, 1, 0, and 0 tootles, (*M*=.50*).* During Treatment 1, he received 3, 2, 2, 2 and 3 tootles (*M*=2.4). In Baseline 2, Elias received 1, 1, 0, 0 and 0 (*M*=.40). In Treatment 2, he received 3, 3, and 2 tootles *(M*=2.6).

During Baseline 1, Elias's peer received 10, 10, 9, and 9 tootles (*M*=9.5). During Treatment 1, the peer received 20, 19, 18, 18, and 19 tootles, (*M*=18.8). During Baseline

2, the peer received 9, 8, 8, 7, and 8 tootles, (*M*=8). During Treatment 2, the peer received 19, 20, and 20 tootles (*M*=19.66).

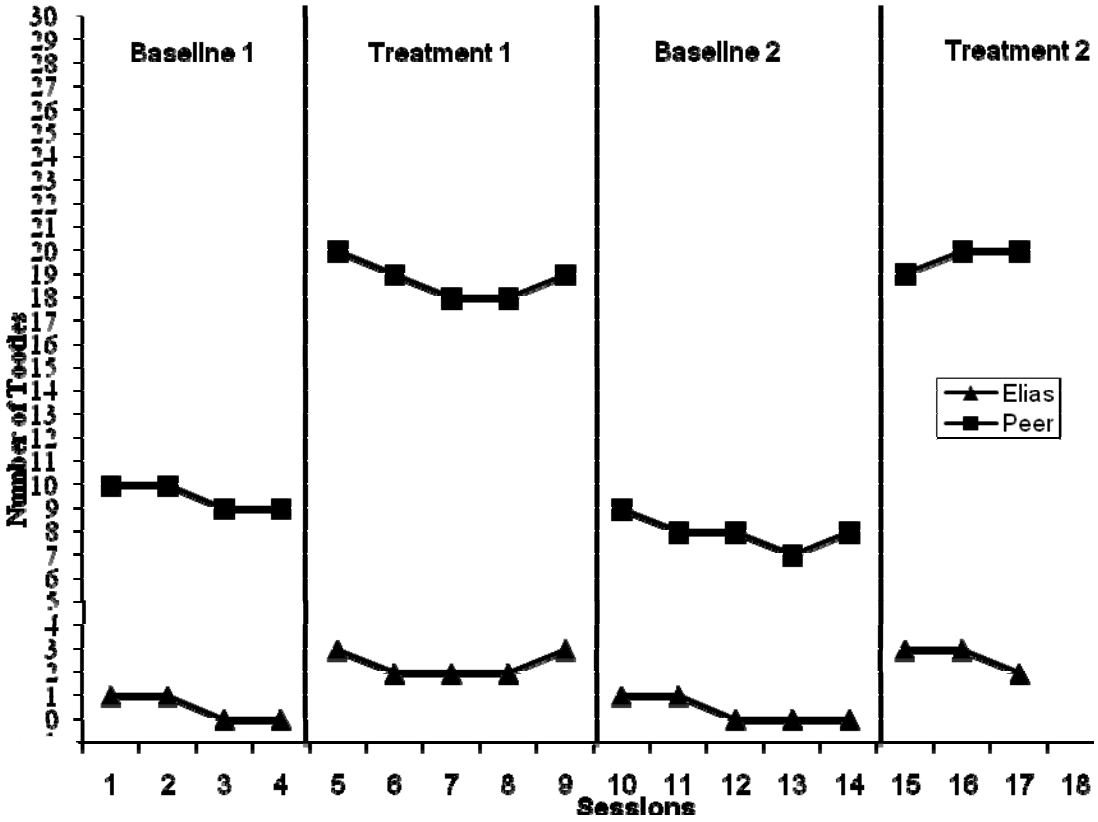

Figure 4.18

Daily number of tootles for Elias and his peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.6

Elias' and his peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Elias			
Inattentive	70%	20%	70%	10%
Out of Place	50%	0%	50%	0%
On-task	30%	80%	30%	100%
Tootles	0.50	2.40	0.40	2.60
	Peer			
Inattentive	30%	10%	20%	10%
Out of Place	10%	0%	20%	0%
On-task	90%	100%	80%	100%
Tootles	9.50	18.80	8.00	19.66

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Elias' composite comparison peer.

Third Grade

The following sections will provide data for the third grade class composed of two target students, Darius and Jasmine and their composite comparison peers (referred to as peers). Third grade phases were implemented according to the following duration periods: Baseline 1 was 5 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days.

Darius

Darius is a 8.5 year-old African American male whose referral concern was out-of-place behavior and inattentive behavior. Darius and his peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following sections present the data for appropriate behaviors for Darius and his composite comparison peer. Figure 4.19 depicts the data for Darius and his peer during each baseline and intervention condition.

During Baseline 1, Darius exhibited on-task behavior during 30%, 10%, and 30% (*Mdn*=30%). During Treatment 1, on-task behavior was exhibited during 60%, 70%, and 70% (*Mdn*=70%) of the observed intervals. During Baseline 2, Darius exhibited on-task behavior during 20%, 30%, and 20% *(Mdn*=20%) of the observed intervals. During Treatment 2, Darius exhibited on-task behavior during 90%, 100%, and 100% (*Mdn*=100%) of the intervals.

During Baseline 1, Darius' peer exhibited on-task behavior during 90%, 80%, and 90% (*Mdn*=90%) of the observed intervals. During Treatment 1, the peer exhibited on-

task behavior during 90%, 100%, and 100% (*Mdn*= 100%) of the observed intervals. During Baseline 2, the peer exhibited on-task behavior during 80%, 90%, and 80% (*Mdn*=80%) of the observed intervals. During Treatment 2 phase, peer on-task behavior was observed during 100%, 100%, and 100% (*Mdn*=100%) of the intervals.

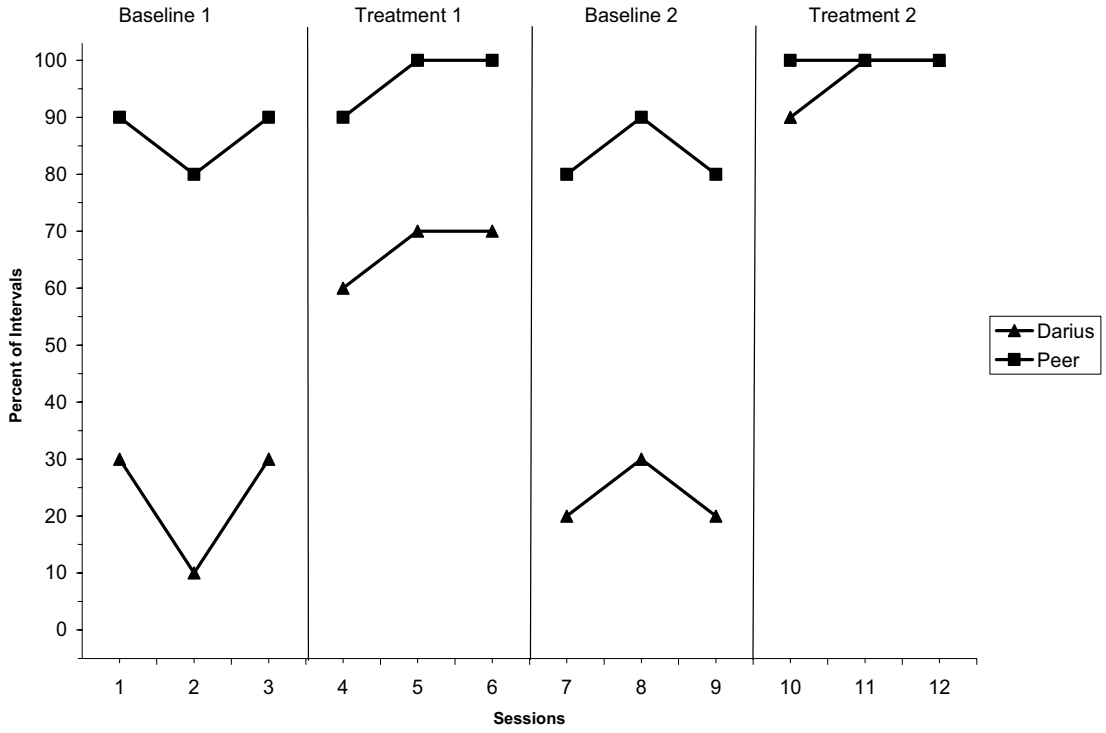

Figure 4.19

Appropriate behavior for Darius and his peer across all phases

Note: Peer=Composite comparison peer.

Inappropriate behavior. The following sections present the data for inappropriate behaviors for Darius and his composite comparison peer. Data is depicted in graphic and tabular form. Figure 4.20 displays the inappropriate behavior exhibited by Darius during each baseline and intervention condition

The following two targeted inappropriate behaviors, out-of-place behavior and aggression, were identified for Darius. These behaviors were tracked for Darius across each condition. These same behaviors were tracked across the four conditions for composite comparisons. During Baseline 1 Darius exhibited out-of-place behavior was observed 90%, 90%, and 90% (*Mdn*=90%) of the observed intervals and; Aggression was observed during 40%, 50%, 50% (*Mdn*=50%) of the observed intervals. Darius' aggressive behavior included him throwing small pellets of paper (spit balls), bumping into students or their desk when he walked by, and plucking a student. When engaging in out-of-seat behavior, Darius was observed to frequently stand with one foot in his desk and one on the floor during instruction time. ' During the Treatment 1 phase, Darius exhibited out of place behavior during 20%, 10%, and 20% (*Mdn*=20/%) of the observed intervals. In Treatment 1 phase, aggressive behavior was observed during 10%, 10%, and 10% (*Mdn*=10%) of the observed intervals. During the Baseline 2 phase, Darius exhibited out-of-place behavior during 80%, 80%, and 90% (*Mdn*=80%) of the observed intervals; and; aggressive behavior was observed during 40%, 40%, and 50% (*Mdn*=40%). During the Treatment 2 phase, Darius exhibited out-of-place behavior during 10%, 10%, and 10% of the observed intervals (Mdn=10%)., and aggressive behavior during 10%, 0%, and 0% (*Mdn*=0%) of the observed intervals.

During Baseline 1, Darius' peer demonstrated out-of-place behavior during 10%, 0%, and 0% (*Mdn*=0%) of the observed intervals, In Baseline 1 phase, Aggressive behavior during 0%, 0%, and 0% (*Mdn*=0%) of the observed intervals. During Treatment 1, Darius' peer exhibited out-of-place behavior during 0%, 0%, and 0% (*Mdn*=0%) of the observed intervals. In Treatment 1, Darius' peer exhibited aggressive behavior during 0

%, 0% and 0% (*Mdn*=0%) of the observed intervals. During Baseline 2, Darius' peer demonstrated out-of-place behavior during 10%, 10%, and 0% (*Mdn*=10%) of the observed intervals. In Baseline 2, aggressive behavior was observed from Darius' peer during 0%, 0%, and 0%, (*Mdn*=0%). During the Treatment 2 phase, Darius' peer exhibited out-of-place behavior during 0%, 0%, and 0% (*Mdn*=0%) of the observed intervals. In Treatment 2 phase, Darius' peer exhibited aggression during 0, %, 0%, and 0% (*Mdn*=0%) of the observed intervals.

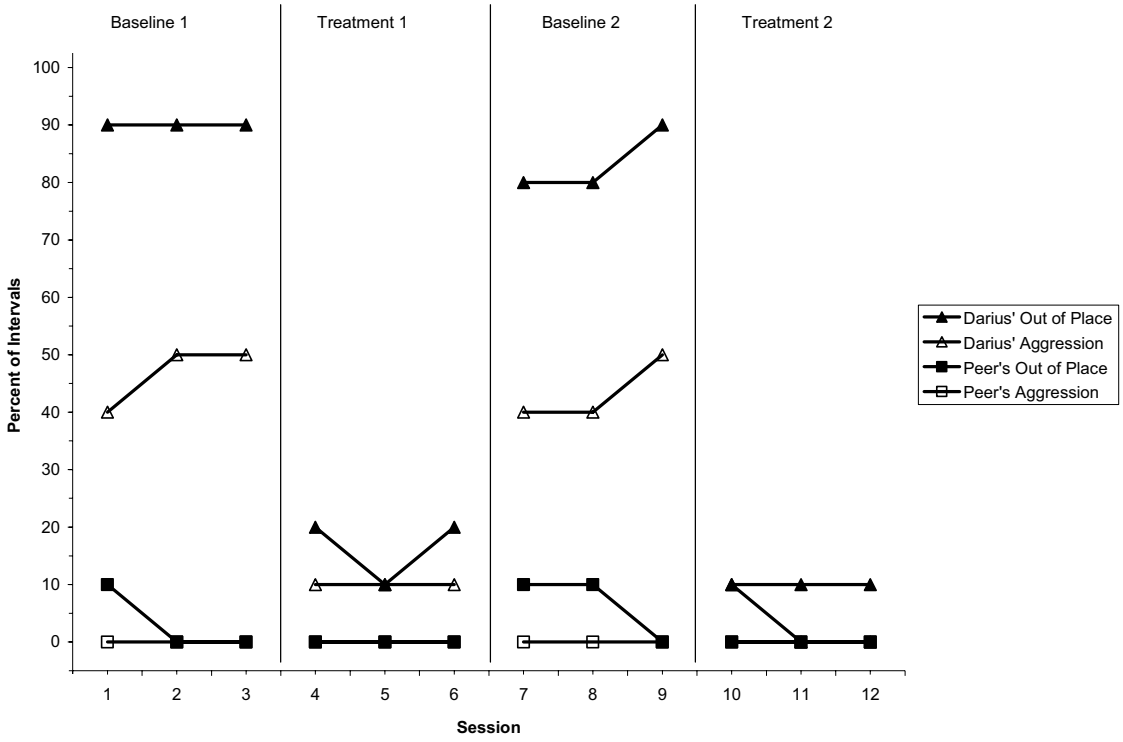

Figure 4.20

Inappropriate behavior for Darius and his peer across all phases

Note: Peer = Composite comparison peer.

Tootle data. The following section presents the tootle data for Darius and his peer. Daily number of tootles are reported across each phase. Data are depicted in graphic form in Figure 4.21.

During Baseline 1, Darius received 0, 0, 0, 0, and 0 tootle, (*M*=0*).* During Treatment 1, he received 1, 0, 0, 0, and 0 tootles (*M*=.20). In Baseline 2, Darius received 0, 0, 0, 0, and 0 (*M*=0). In Treatment 2, he received 0, 0, and 0 tootles *(M*=0).

During Baseline 1, Darius' peer received 9, 11, 10, 9 and 10 tootles (*M*=9.8). During Treatment 1, the peer received 20, 18, 19, 18, and 20 tootles, (*M*=19). During Baseline 2, the peer received 8, 9, 9, 8, and 7 tootles, (*M*=8.2). During Treatment 2, the peer received 20, 19, and 19 tootles (*M*=19.33).

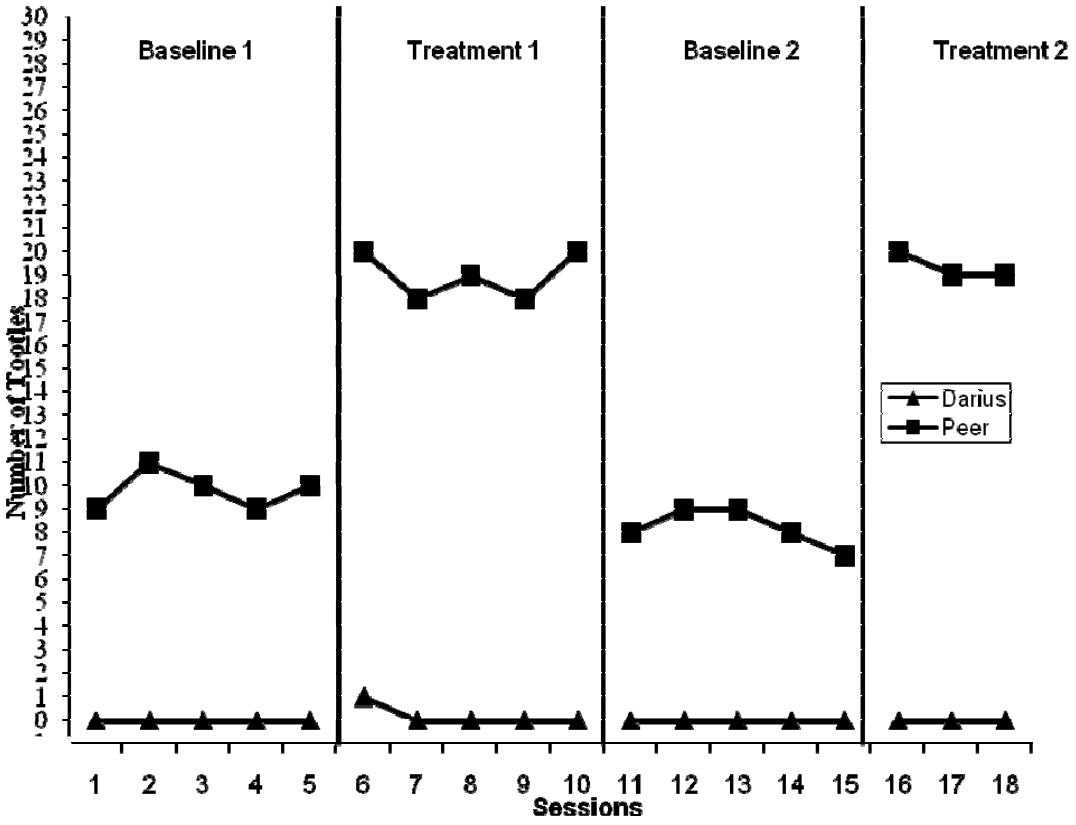

Figure 4.21

Daily number of tootles for Darius and his peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.7 displays the median data (i.e., appropriate and inappropriate behavior) and mean data (tootles) for Darius and his peer during each baseline and intervention condition.

Table 4.7

Darius' and his peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Darius			
Out-of-Place	90%	20%	80%	10%
Aggression	50%	10%	40%	0%
On-task	30%	70%	20%	100%
Tootles	0.00	0.20	0.00	0.00
	Peer			
Out-of-Place	0%	0%	10%	0%
Aggression	0%	0%	0%	0%
On-task	90%	100%	80%	100%
Tootles	9.80	19.00	8.20	19.33

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Darius' composite comparison peer.

Jasmine

Jasmine was a 8.5 year-old African American female whose referral concern was inappropriate noise and aggression. Jasmine and her peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. Figure 4.22 displays the appropriate behavior exhibited by Jasmine during each baseline and intervention condition. During Baseline 1, Jasmine exhibited on-task behavior during 0%, 0%, and 0% (*Mdn*=0%). During Treatment 1, on-task behavior was during 70%, 60%, and 70% (*Mdn*=70%). During Baseline 2, Jasmine exhibited on-task behavior during 10%, 10%, and 0% *(Mdn*=10%). During Treatment 2, Jasmine exhibited on-task behavior during 70%, 80%, and 80% (*Mdn*=80%).

During Baseline 1, Jasmine's peer exhibited on-task behavior during 80%, 80%, and 80% (*Mdn*=80%). During Treatment 1, the peer exhibited on-task behavior during 100%, 90%, and 100% of on-task behavior (*Mdn*= 100%). During Baseline 2, the peer exhibited on-task behavior during 80%, 90%, and 80% (*Mdn*=80%) of the observed intervals. During Treatment 2 phase, peer on-task behavior was during 100%, 100%, 100% (*Mdn*=100%).

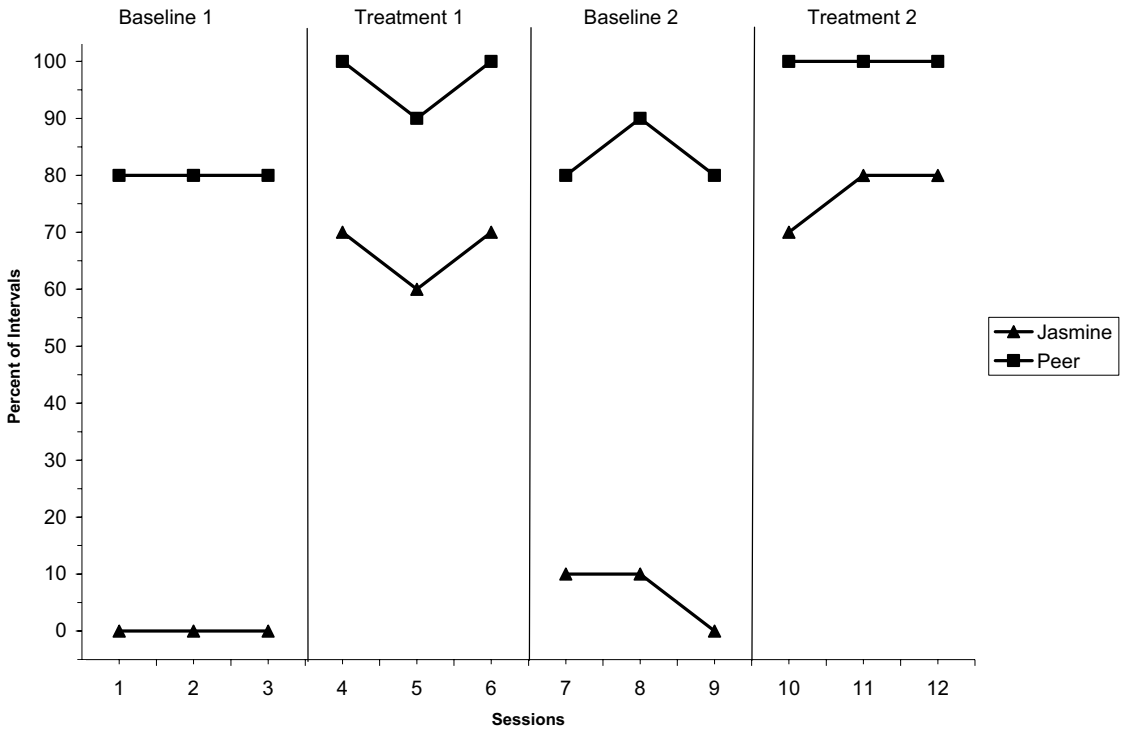

Figure 4.22

Appropriate behavior for Jasmine and her peer across all phases

Note: Peer = Composite comparison peer.

Inappropriate behavior. The following two targeted inappropriate behaviors were identified for Jasmine (a) inattention (e.g., looking around the classroom); and (b) inappropriate noise (e.g., talking to peers seated in close proximity to her and making threats to peers). Figure 4.23 displays the data for inappropriate behaviors exhibited by Jasmine and her peer during each baseline and intervention phase.

During Baseline 1, Jasmine was observed to exhibit inattention during 60%, 50%, 60% (*Mdn*=60%) of the observed intervals; and inappropriate noise was observed during 100%, 90%, and 100% (*Mdn*=100%) of the observed intervals. During the Treatment 1

phase, Jasmine exhibited inattentive behavior was observed during 20%, 30%, and 20% (*Mdn*=20%) of the observed intervals; and inappropriate noise was observed during 30%, 30%, and 30% (*Mdn*=30/%) of the intervals. During the Baseline 2 phase, Jasmine exhibited inattentive behavior during 60%, 60%, and 50% (*Mdn*=60%) of the observed intervals; and inappropriate noise was observed during 80%, 80%, and 80% (*Mdn*=80%) of the intervals. During the Treatment 2 phase, Jasmine exhibited inattentive behavior during 10%, 10%, and 10% (*Mdn*=10%) of the observed intervals; and inappropriate noise was observed during 20%, 20%, and 10% (*Mdn*=20%) of the intervals.

During Baseline 1, Jasmine's peer demonstrated inattentive behavior during 20%, 20%, and 20% (*Mdn*=20%) of the observed intervals; and inappropriate noise was observed during 10%, 10%, and 10% (*Mdn*=10%) of the intervals. During Treatment 1, her peer exhibited inattentive behavior during 20 %, 10% and 0% (*Mdn*=0%) of the observed intervals and inappropriate noise during 10%, 0%, and 0% (*Mdn*=0%) of the intervals. During Baseline 2, the peer demonstrated inattentive behavior was observed from Jasmine's peer during 0%, 0%, and 0%, (*Mdn*=0%) of the observed intervals and inappropriate noise during 10%, 10%, and 0% (*Mdn*=10%) of the intervals. During the Treatment 2 phase, the peer exhibited inattentive behavior during 0, %, 0%, and 0% (*Mdn*=0%) of the observed intervals and inappropriate noise during 0%, 0%, and 0% (*Mdn*=0%) of the intervals.

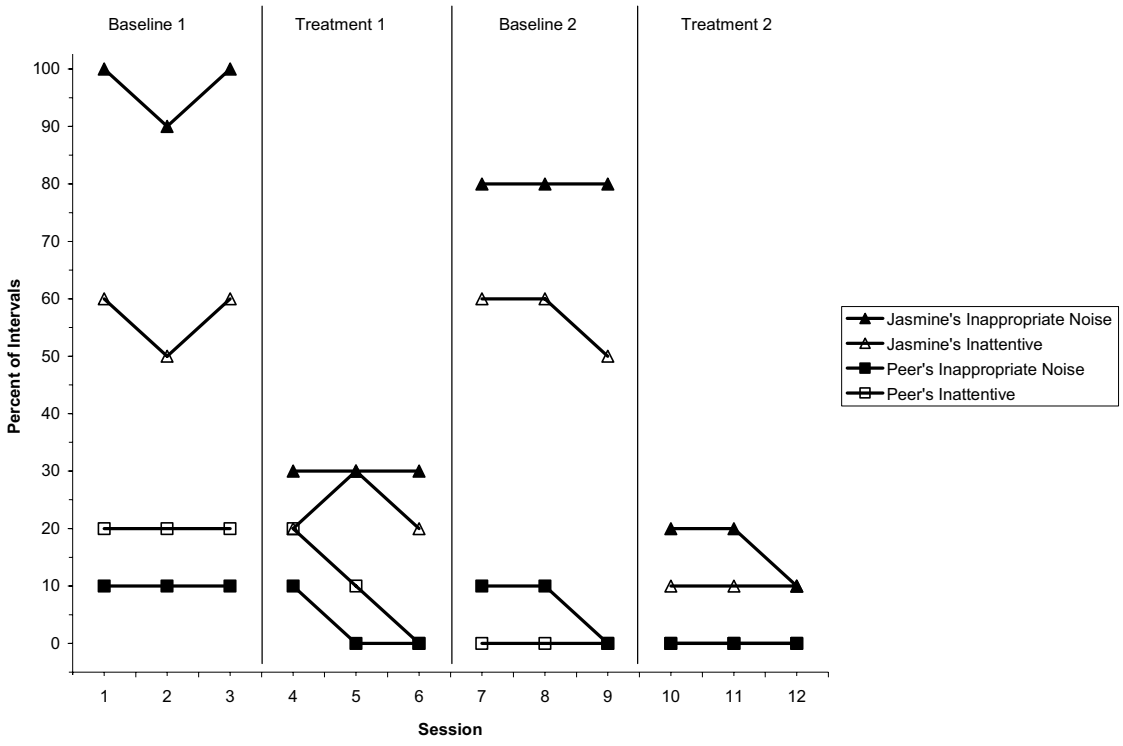

Figure 4.23

Inappropriate behaviors for Jasmine and her peer across all phases

Note: Peer=Composite comparison peer.

Tootle data. The following section presents the tootle data for Jasmine and her peer. Daily number of tootles are reported across each phase. Data are depicted in Figure 4.24.

During Baseline 1, Jasmine received 0, 0, 0, 0, and 0 tootle, (*M*=0*).* During Treatment 1, she received 1, 0, 0, 1 and 0 tootles (*M*=.40). In Baseline 2, Jasmine received 0, 0, 0, 0, and 0 (*M*=0). In Treatment 2, she received 2, 1, and 2 tootles *(M*=1.6).

During Baseline 1, Jasmine's peer received 11, 10, 9, 8, and 8 tootles (*M*=9.2). During Treatment 1, the peer received 17, 18, 18, 19, and 20 tootles, (*M*=18.4). During

Baseline 2, the peer received 9, 8, 8, 7and 8 tootles, (*M*=8). During Treatment 2, the peer received 20, 22, and 20 tootles (*M*=20.66).

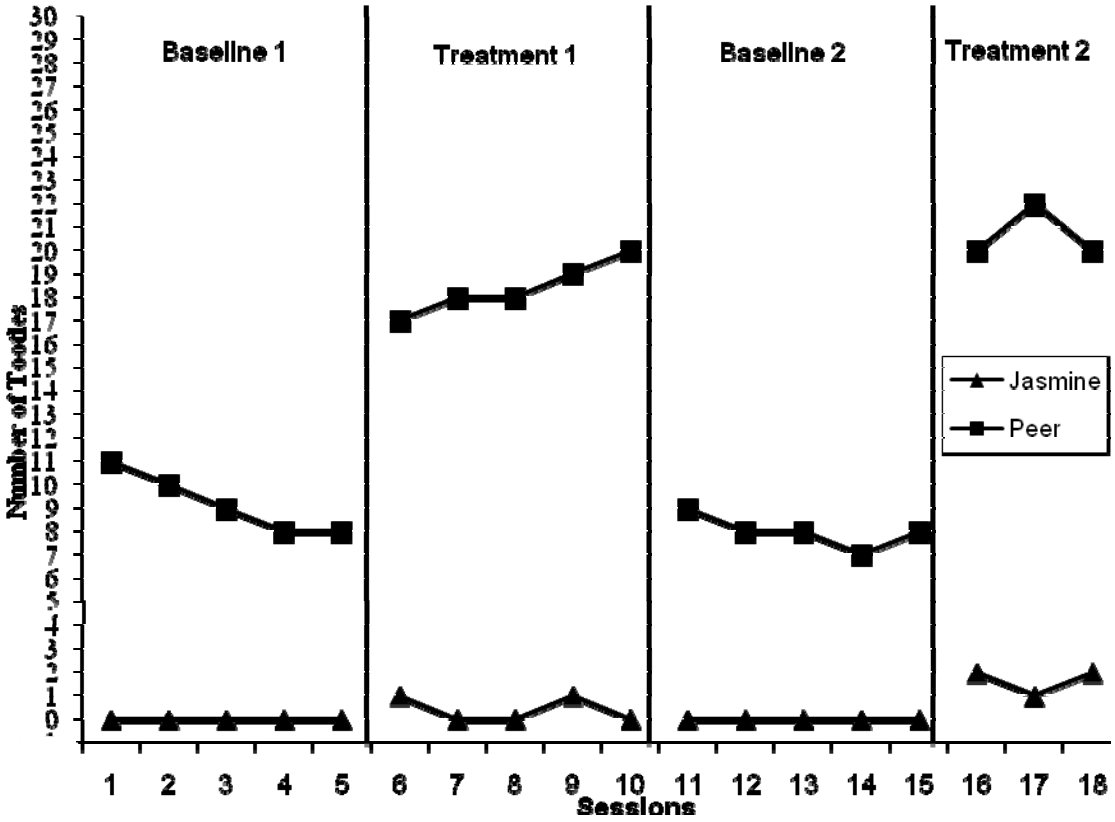

Figure 4.24

Daily number of tootles for Jasmine and her peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.8 displays the median data (i.e., appropriate and inappropriate behavior) and mean data (tootles) for Jasmine and her peer during each baseline and intervention condition.

Table 4.8

Jasmine's and her peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Jasmine			
Inattentive	60%	20%	60%	10%
Inappropriate Noise	100%	30%	80%	20%
On-task	0%	70%	10%	80%
Tootles	0.00	0.40	0.00	1.60
	Peer			
Inattentive	20%	10%	0%	0%
Inappropriate Noise	10%	0%	10%	0%
On-task	80%	100%	80%	100%
Tootles	9.20	18.40	8.00	20.66

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Jasmine's composite comparison peer.

Fourth Grade

The following sections will provide data for the fourth grade class composed of two students, Brandy and Tonya and their composition comparison peers (referred to as peers). Fourth grade phases were implemented according to the following duration periods: Baseline 1 was 4 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days.

Brandy

Brandy was a 9.6 year-old African American female whose referral concern was inappropriate noise, out-of-place behavior, and inattentive behavior. Brandy and her peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. The following sections present the data for appropriate behaviors for Brandy and her composite comparison peer. Figure 4.25 displays the appropriate behavior exhibited by Brandy and her peer during each baseline and intervention phase.

During Baseline 1, Brandy exhibited on-task behavior during 20%, 20%, and 20% (*Mdn*=20%) of the observed intervals. During Treatment 1, on-task behavior was observed during 60%, 80%, and 80% (*Mdn*=80%) of the intervals. During Baseline 2, Brandy exhibited on-task behavior during 20%, 10%, and 0% *(Mdn*=10%) of the observed intervals. During Treatment 2, Brandy exhibited on-task behavior during 80%, 90%, and 100% (*Mdn*=90%) of the observed intervals.

During Baseline 1, Brandy's peer exhibited on-task behavior during 70%, 80%, and 70% (*Mdn*=70%) of the observed intervals. During Treatment 1, the peer exhibited on-task behavior during 100%, 100%, and 90% (*Mdn*=100%) of the observed intervals. During Baseline 2, the peer exhibited on-task behavior during 80%, 90%, and 80% (*Mdn*=80%) of the observed intervals. During Treatment 2 phase, peer on-task behavior was observed during 90%, 100%, 100% (*Mdn*=100%) of the intervals.

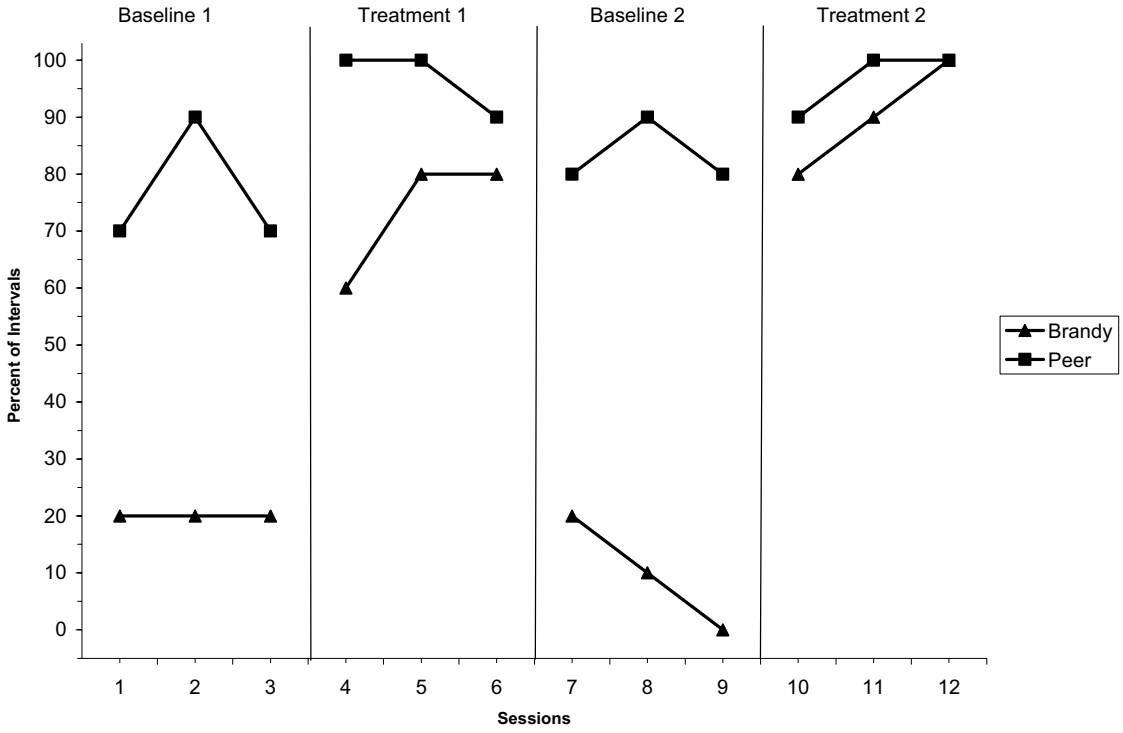

Figure 4.25

Appropriate behavior for Brandy and her peer across all phases

Note: Peer = Composite comparison peer.

Inappropriate behavior. The following sections present the data for inappropriate behaviors for Brandy and her composite comparison peer. The following two targeted inappropriate behaviors were identified for Brandy (a) inattentive behavior (e.g., looking out of the window) and (b) inappropriate noise (e.g., talking to peers seated across the room from her and yelling during peers). Figure 4.26 displays the inappropriate behavior exhibited by Brandy and her peer during each baseline and intervention phase.

During Baseline 1, Brandy exhibited inattentive behavior during 90%, 90%, 80% (*Mdn*=90%) of the observed intervals; and inappropriate noise was observed during 80%, 80%, and 80% (*Mdn*=80%) of the intervals. During the Treatment 1 phase, Brandy exhibited inattentive behavior during 40%, 40%, and 40% (*Mdn*=40%) of the observed intervals and inappropriate noise during 30%, 30%, and 20% (*Mdn*=30/%) of the intervals. During the Baseline 2 phase, Brandy exhibited inattentive behavior during 90%, 100%, and 100% (*Mdn*=100%) of the observed intervals and inappropriate noise during 80%, 80%, and 90% (*Mdn*=80%) of the intervals. During the Treatment 2 phase, Brandy exhibited inattentive behavior during 30%, 30%, and 30% (*Mdn*=30%) of the observed intervals and inappropriate noise during 30%, 20%, and 20% (*Mdn*=20%) of the intervals.

During Baseline 1, Brandy's peer demonstrated inattentive behavior during 60%, 50%, and 50% (*Mdn*=50%) of the observed intervals and inappropriate noise during 40%, 50%, and 40% (*Mdn*=40%) of the intervals. During Treatment 1, the peer exhibited inattentive behavior during 20 %, 0% and 0% (*Mdn*=0%) of the observed intervals and inappropriate noise during 0%, 10%, and 0% (*Mdn*=0%) of the intervals. During Baseline 2, the peer engaged in inattentive behavior during 60%, 60%, and 60%,

(*Mdn*=60%) of the observed intervals and inappropriate noise was observed during 50%, 40%, and 50% (*Mdn*=50%) of the intervals. During the Treatment 2 phase, the peer exhibited inattentive behavior during 20, %, 10%, and 0% (*Mdn*=10%) of the observed intervals and inappropriate noise during 10%, 20%, and 10% (*Mdn*=10%) of the intervals.

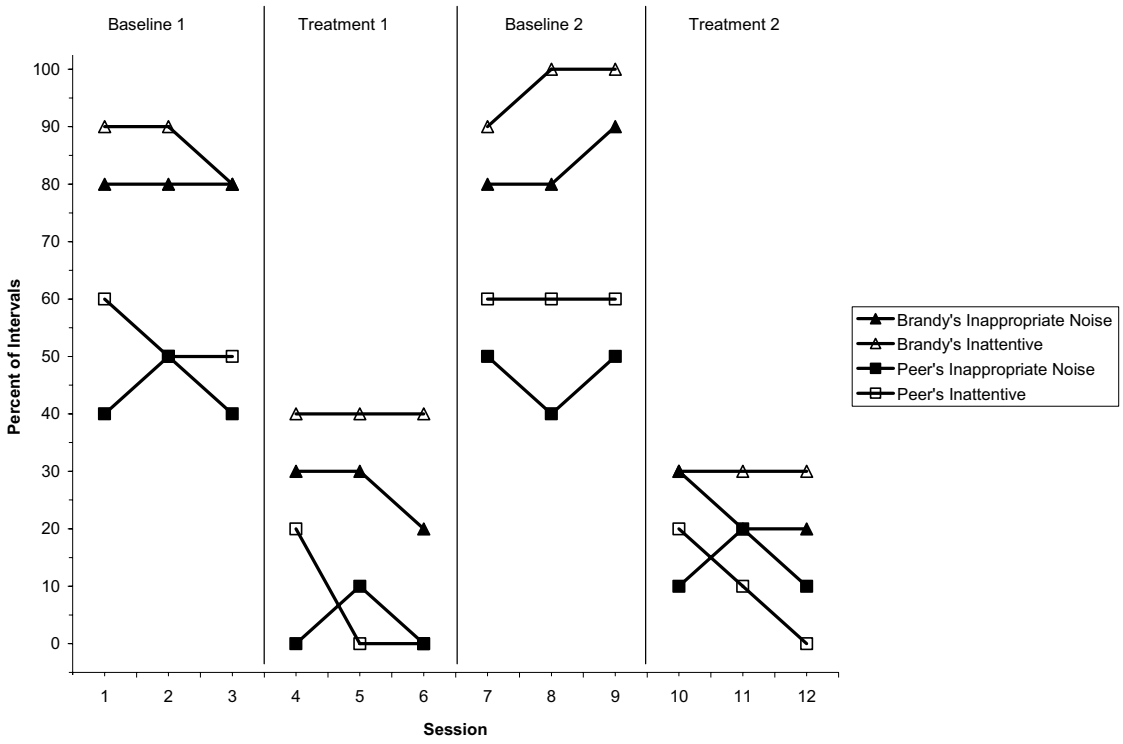

Figure 4.26

Inappropriate behaviors for Brandy and her peer across all phases

Note: Peer=Composite comparison peer.

Tootle data. During Baseline 1, Brandy received 1, 0, 1, and 0 tootle, (*M*=.50*).* During Treatment 1, she received 3, 2, 2, 1 and 2 tootles (*M*=2). In Baseline 2, she received 0, 0, 1, 0, and 1 (*M*=.20). In Treatment 2, she received 2, 2, and 2 tootles *(M*=2).

During Baseline 1, Brandy's peer received 6, 7, 5, and 6 tootles (*M*=6). During Treatment 1, the peer received 10, 12, 11, 10, and 10 tootles, (*M*=10.6). During Baseline 2, the peer received 5, 6, 5, 6, and 4 tootles, (*M*=5.2). During Treatment 2, the peer received 11, 12, and 15 tootles (*M*=12.66). Figure 4.27 depict the tootling data for Brandy and her peer.

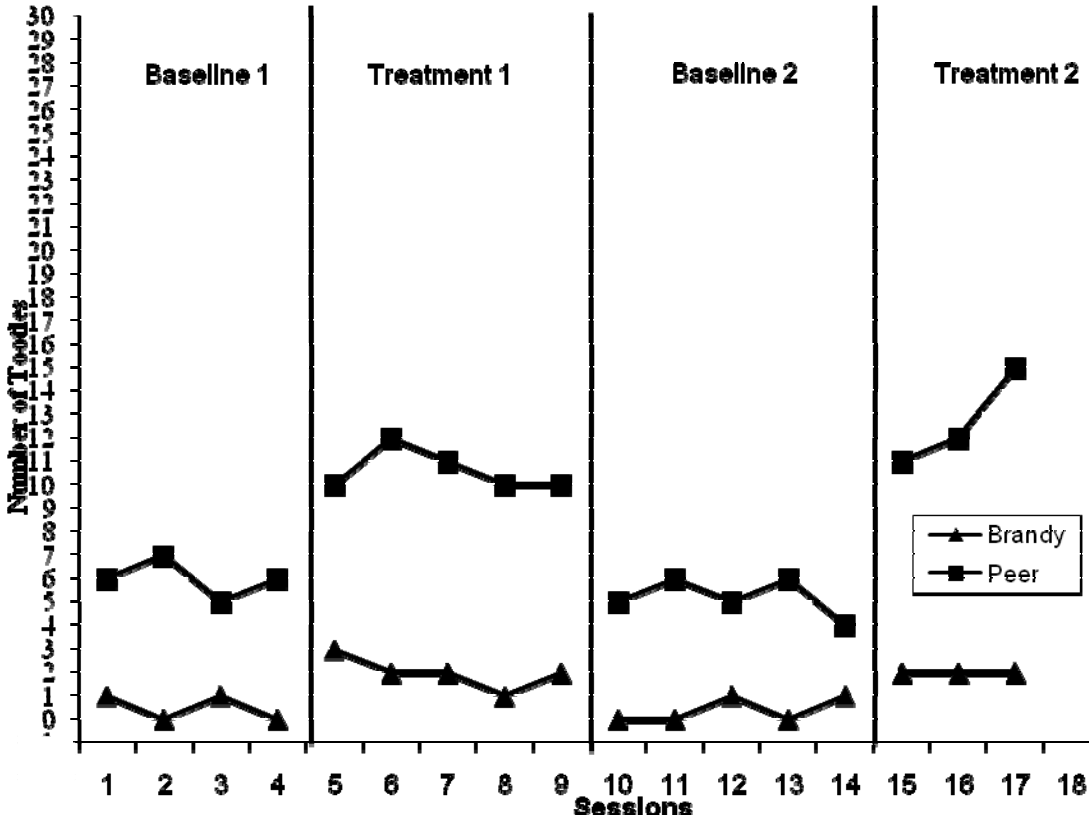

Figure 4.27

Daily number of tootles for Brandy and her peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.9 displays the median data (i.e., appropriate and inappropriate behavior) and mean data (i.e., tootles) for Brandy and her peer during each baseline and intervention condition.

Table 4.9

Brandy's and her peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Brandy			
Inattentive	90%	40%	100%	30%
Inappropriate Noise	80%	30%	80%	20%
On-task	20%	80%	10%	90%
Tootles	0.50	2.00	0.20	2.00
	Peer			
Inattentive	50%	0%	60%	10%
Inappropriate Noise	40%	0%	50%	10%
On-task	70%	100%	80%	100%
Tootles	6.00	10.60	5.20	12.66

Note: Bl 1 = Baseline 1 phase, Bl 2 = Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Brandy's composite comparison peer.

Tonya

Tonya was a 9.4 year-old African American female whose referral concern was inappropriate noise and inattentive behavior. Tonya and her peers were observed in an alternating manner (i.e., every other interval) across observation sessions.

Appropriate behavior. During Baseline 1, Tonya exhibited on-task behavior during 10%, 0%, and 0% (*Mdn*=0%) of the observed intervals. During Treatment 1, on-task behavior was exhibited during 50%, 60%, and 50% (*Mdn*=50%) of the observed intervals. During Baseline 2, Tonya exhibited on-task behavior during 20%, 10%, and 10% *(Mdn*=10%) of the intervals. During Treatment 2, Brandy exhibited on-task behavior during 60%, 60%, and 60% (*Mdn*=60%) of the intervals.

During Baseline 1, Tonya's peer exhibited on-task behavior during 70%, 70%, and 70% (*Mdn*=70%) of the observed intervals. During Treatment 1, the peer exhibited on-task behavior during 80%, 90%, and 90% of on-task behavior (*Mdn*= 90%) of the intervals. During Baseline 2, the peer exhibited on-task behavior during 70%, 70%, and 70% (*Mdn*=70%) of the observed intervals. During Treatment 2 phase, peer on-task behavior was observed during 90%, 100%, 100% (*Mdn*=100%) of the intervals.

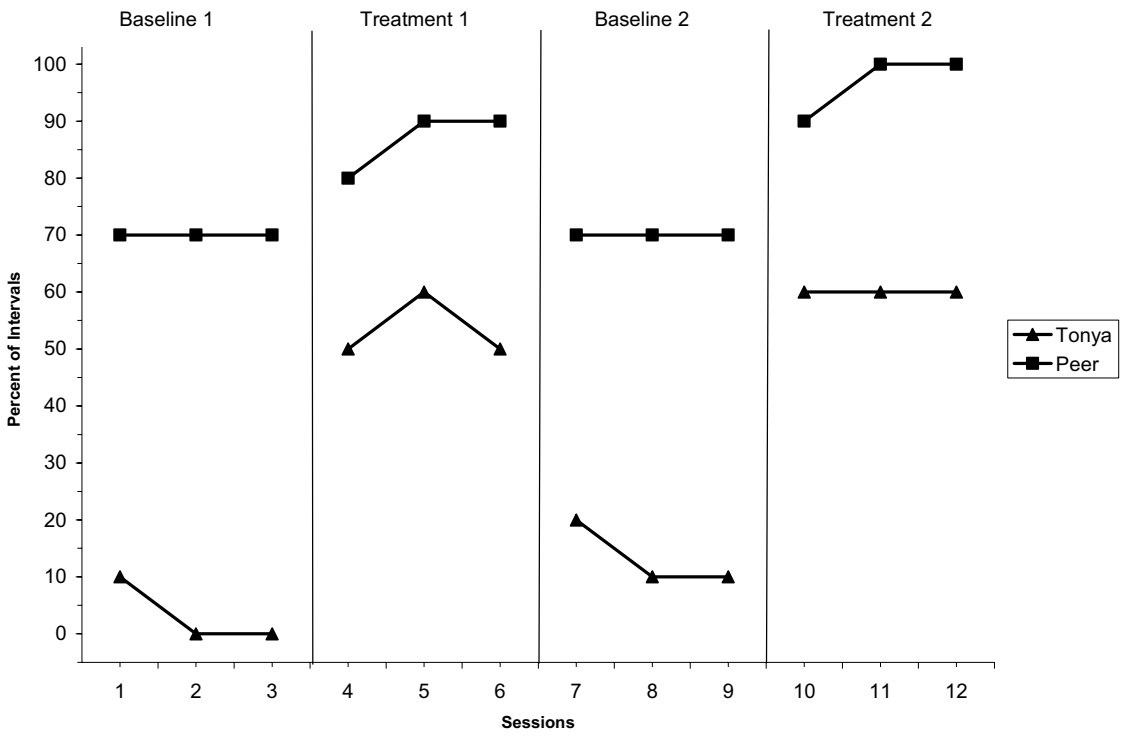

Figure 4.28

Appropriate behavior for Tonya and her peer across all phases.

Note: Peer = Composite comparison peer.

Inappropriate behavior. The following two targeted inappropriate behaviors were identified for Tonya (a) inappropriate noise (e.g., talking to peers seated in close proximity and singing to herself); and (b) inattentive behavior (e.g., her looking around the classroom, staring out of the window, writing notes to peers and doodling on her desk). Figure 4.29 displays the inappropriate behavior exhibited by Tonya during each baseline and intervention phase.

For Tonya during Baseline 1, inappropriate noise was observed during 90%, 100%, and 100% (*Mdn*=100%) of the observed intervals and inattentive behavior was observed during 90%, 90%, 90% (*Mdn*=90%) of the intervals. During the Treatment 1 phase, Tonya exhibited inappropriate noise during 50%, 50%, and 50% (*Mdn*=50/%) of the observed intervals and inattentive behavior was observed during 60%, 60%, and 50% (*Mdn*=60%) of the intervals. During the Baseline 2 phase, Tonya exhibited inappropriate noise during 80%, 90%, and 90% (*Mdn*=90%) of the observed intervals and inattentive behavior during 100%, 100%, and 100% (*Mdn*=100%) of the intervals. During the Treatment 2 phase, Tonya exhibited inappropriate noise during 50%, 40%, and 40% (*Mdn*=40%) of the observed intervals and inattentive behavior during 60%, 60%, and 60% (*Mdn*=60%) of the intervals.

During Baseline 1, Tonya's peer demonstrated inappropriate noise during 40%, 50%, and 40% (*Mdn*=40%) of the observed intervals and inattentive behavior during 60%, 50%, and 50% (*Mdn*=50%) of the intervals. During Treatment 1, the peer exhibited inappropriate noise during 30%, 20%, and 10% (*Mdn*=20%) of the observed intervals and inattentive behavior during 30 %, 30%, and 30% (*Mdn*=30%) of the intervals. During Baseline 2, the peer demonstrated inappropriate noise during 50%, 50%, and 50% (*Mdn*=50%) of the observed intervals and inattentive behavior during 60%, 50%, and 60%, (*Mdn*=60%) of the intervals. During the Treatment 2 phase, the peer exhibited inappropriate noise during 10%, 20%, and 10% (*Mdn*=10%) of the observed intervals and inattentive behavior during 30%, 20%, and 20% (*Mdn*=20%) of the intervals.

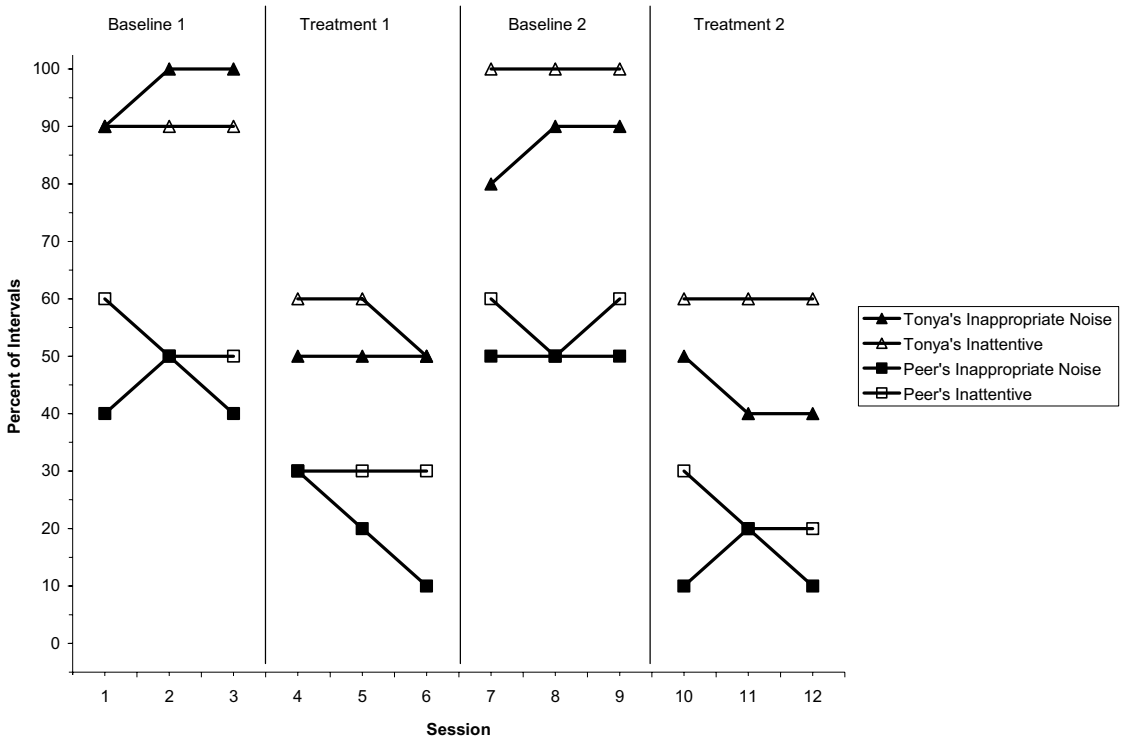

Figure 4.29

Inappropriate behaviors for Tonya and her peer across all phases

Note: Peer = Composite comparison peer.

Tootle data. The following section presents the tootle data for Tonya and her peer. Daily number of tootles are reported across each phase. Data are depicted in Figure 4.30.

During Baseline 1, Tonya received 1, 0, 0 and 0 tootle, (*M*=.25*).* During Treatment 1, she received 1, 1, 1, 1 and 2 tootles (*M*=1.2). In Baseline 2, she received 0, 0, 0, 0, and 0 (*M*=0). In Treatment 2, Tonya received 2, 3, and 2 tootles *(M*=2.33).

During Baseline 1, Tonya's peer received 5, 7, 6, and 7 tootles (*M*=6.25). During Treatment 1, the peer received 12, 11, 12, 11 and 13 tootles, (*M*=11.8). During Baseline

2, the peer received 6, 7, 5, 6, and 6 tootles, (*M*=6). During Treatment 2, the peer received 14, 13, and 14 tootles (*M*=13.66).

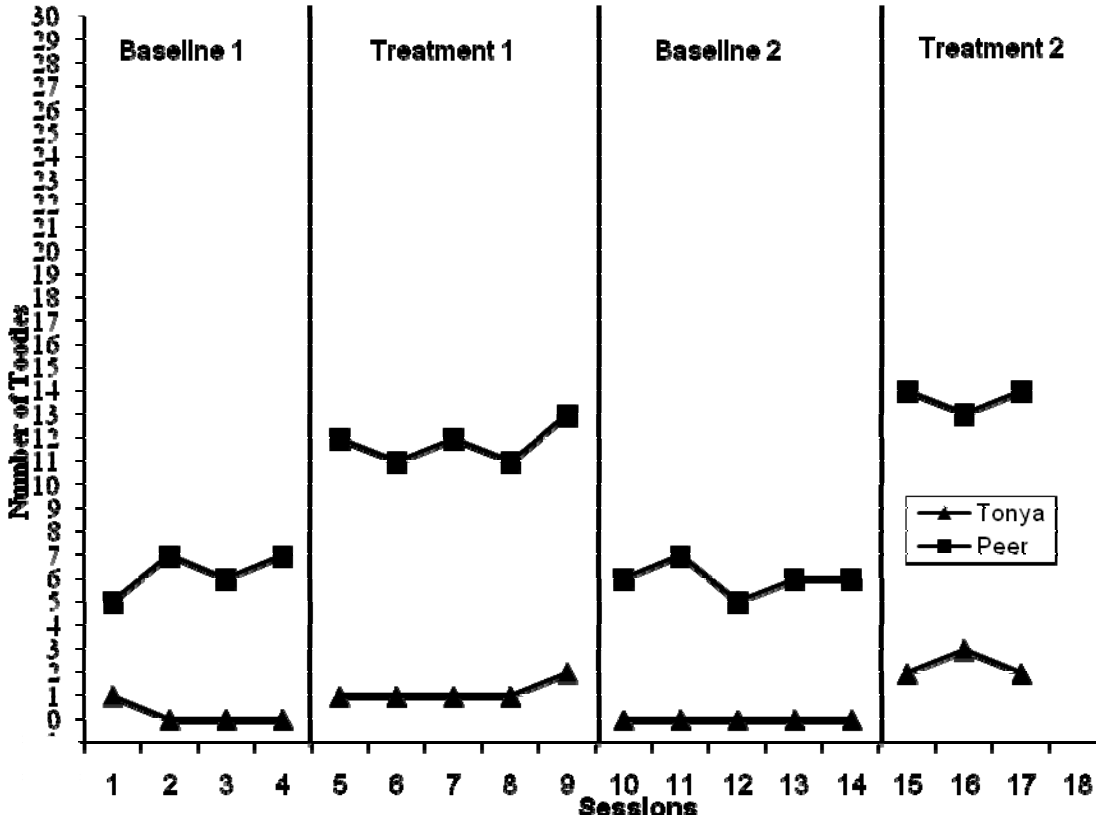

Figure 4.30

Daily number of tootles for Tonya and her peer across all phases

Note: Peer = composite comparison peer, Tootles=mean number of tootles across days within each phase.

Table 4.10 displays the median data (i.e., appropriate and inappropriate behavior) and mean data (i.e., tootles) for Tonya and her peer during each baseline and intervention condition.

Table 4.10

Tonya's and her peer's median scores for appropriate and inappropriate behaviors and mean scores for tootles across phases

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Tonya			
Inattentive	90%	60%	100%	60%
Inappropriate Noise	100%	50%	90%	40%
On-task	0%	50%	10%	60%
Tootles	.25	1.20	0.00	2.33
	Peer			
Inattentive	50%	30%	60%	20%
Inappropriate Noise	40%	20%	50%	10%
On-task	70%	90%	70%	100%
Tootles	6.25	11.80	6.00	13.66

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Tonya's composite comparison peer.

Classwide Data

Tootle rates from each classroom will be presented in this section. Classwide tootle data will also be presented in a summative Table 4.31. It is equally important to note that the baseline and treatment phases were staggered across each class. As well, the duration of each phase may contain variability due to the amount of time required for stabilization of the data across data sets. Tootle data for each class are depicted in Figure 4.31.

Kindergarten

The following sections will provide tootle data for the kindergarten class. Kindergarten tootle data was collected across the following four phases: Baseline 1 was 3 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days.

During Baseline 1, which was 3 days, the kindergarten class obtained the following daily tootles across the three days: 50, 52 and, 51 (*M*=51). During Treatment 1, which occurred across 5 days, the kindergarten class obtained the following daily tootles: 92, 90, 89, 91, and 92 (*M*=90.8). During Baseline 2, which was 5 days, the kindergarten class obtained the following daily tootles across the five days: 40, 39, 40, 35, and 36 (*M*=38). During Treatment 2, which was 3 days, the kindergarten class obtained the following daily tootles across the three days: 138=, 140, and 145 (*M*=141).

First Grade

The following section will provide tootle data for the first grade class. First grade tootle data was collected across the following four phases: Baseline 1 was 7 days,

Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days. During Baseline 1 which was 7 days, the first grade class obtained the following daily tootles across the seven days: 52, 50, 48, 50, 47, 45, and 43 (*M*=47.87). During Treatment 1, which occurred across 5 days, the first grade class obtained the following daily tootles: 100, 95, 98, 105, and 108 (*M*=101.20). During Baseline 2, which occurred across 5 days, the First Grade class obtained the following daily tootles: 45, 42, 44, 41, and 40 (*M*=42.4). During Treatment 2, which occurred across 3 days, the First Grade class obtained the following daily tootles 108, 110, and 111 (*M*=109.6).

Second Grade

The following section will provide tootle data for the second grade class. Second grade tootle data was collected across the following four phases: Baseline 1 was 4 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days. During Baseline 1 which occurred across 4 days, the first grade class obtained the following daily tootles: 85, 80, 78, and 70 (*M*=78.25). During Treatment 1, which occurred across five days, the second grade class obtained the following daily tootles: 158, 150 156, 157, and 159 (*M*=156). During Baseline 2, which occurred across 5 days, the second grade class obtained the following daily tootles: 90, 88, 85, 83 and 80 (*M*=85.2). During Treatment 2, which occurred across 3 days, the second grade class obtained the following tootles: 175, 176, and 178 (*M*=176).

Third Grade

The following section will provide tootle data for the third grade class. Third grade tootle data was collected across the following four phases: Baseline 1 was 5 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days. During Baseline 1 which occurred across 5 days, the third grade class obtained the following daily tootles: 60, 57, 55, 53, and 52 (*M*=55.4). During Treatment 1, which occurred across 5 days, the third grade class obtained the following daily tootles: 95, 97, 99, 98, and 100 (*M*=97.8). During Baseline 2, which was 5 days, the third grade class obtained the following daily tootles across the five days: 40, 38, 39, 37, and 36 (*M*=38). During Treatment 2, which was 3 days, the third grade class obtained the following tootles across the three days: 148, 149, and 150 (*M*=149).

Fourth Grade

The following section will provide tootle data for the Fourth grade class. Fourth grade tootle data was collected across the following four phases: Baseline 1 was 4 days, Treatment 1 was 5 days, Baseline 2 was 5 days, and Treatment 2 was 3 days. During Baseline 1 which occurred across 4 days, the fourth grade class obtained the following daily tootles: 70, 68, 65, and 60 (*M*=65.75). During Treatment 1, which was 5 days, the fourth grade class obtained the following daily tootles across the five days: 120, 125, 128, 130, and 134 (*M*=127.4). During Baseline 2, which occurred across 5 days, the fourth grade class obtained the following daily tootles: 65, 63, 60, and 44, and 40 (*M*=54.4). During Treatment 2, which occurred across 3 days, the third grade class obtained the following tootles: 144, 150, and 161 (*M*=151.6).

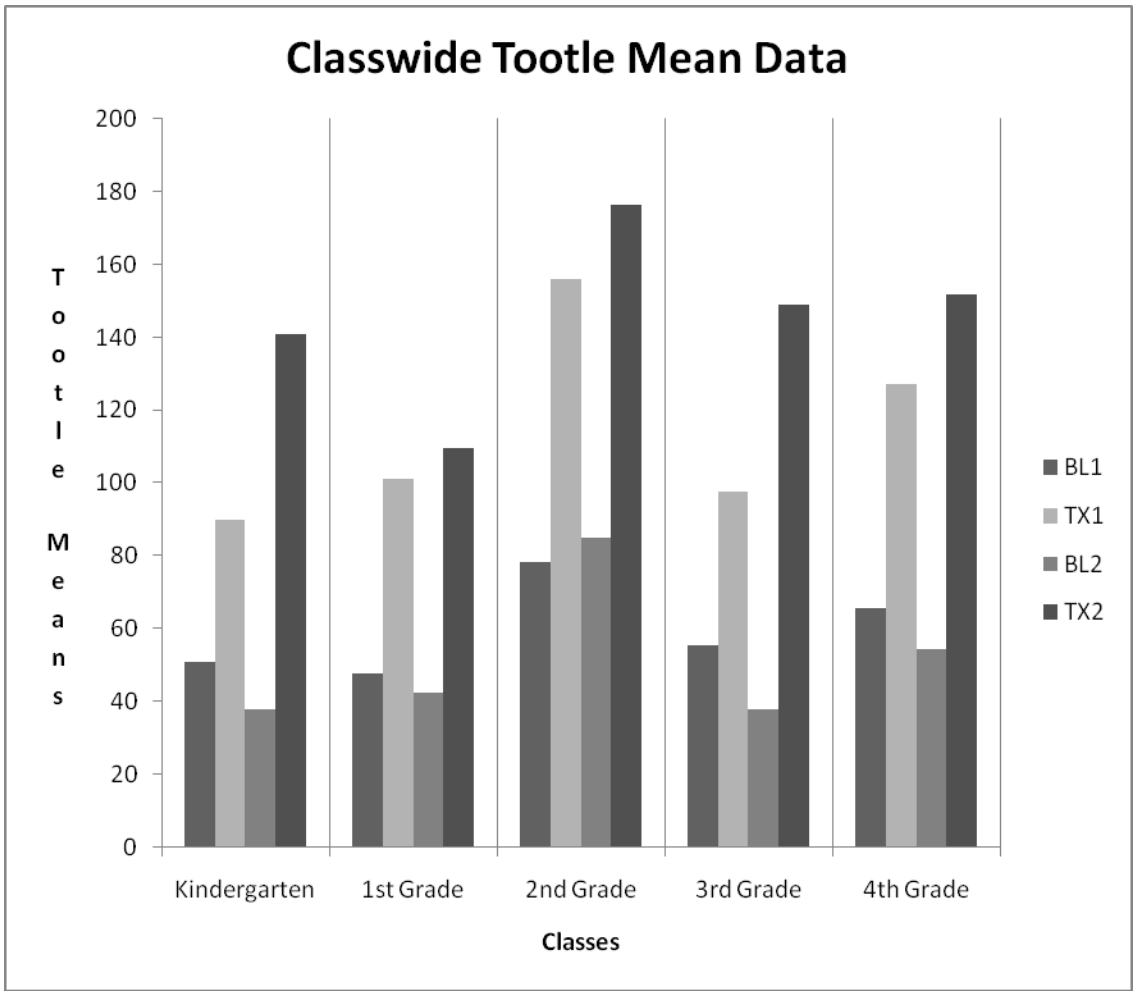

Figure 4.31

Classwide tootle data for each class across all phases

Note: BL1 = Baseline 1, TX1 = Treatment 1, BL2 = Baseline 2, TX2 = Treatment 2.

Table 4.11

Descriptive statistics for classwide tootling data during each baseline and intervention condition

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
		Kindergarten		
Mean	51.00	90.80	38.00	141.00
Range	50 - 52	89 - 92	35 - 40	138 - 145
Number of days	3	5	5	3
		First Grade		
Mean	47.86	101.20	42.40	109.67
Range	43-52	95-108	40-45	108-111
Number of days	7	5	5	3
		Second Grade		
Mean	78.25	156	85.20	176.33
Range	70-85	150-159	80-90	175-178
Number of days	4	5	5	3

Table 4.11 (Continued)

Descriptive statistics for classwide tootling data during each baseline and intervention condition

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
		Third Grade		
Mean	55.40	97.80	38.00.	149.00
Range	52-60	95-100	36-40	148-150
Number of days	5	5	5	3
		Fourth Grade		
Mean	65.75	127.40	54.40	151.67
Range	60-70	120-134	40-65	144-161
Number of days	4	5	5	3

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Darius' composite comparison peer.

Table 4.12

Classwide tootle goals met across each condition

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Kindergarten			
Tootle Goal Met	153	607	797	1220
Number of days	3	5	5	3
	First Grade			
Tootle Goal Met	345	851	1063	1392
Number of days	7	5	5	3
	Second Grade			
Tootle Goal Met	313	1093	1519	2058
Number of days	4	5	5	3
	Third Grade			
Mean	277	767	957.	1404
Number of days	5	5	5	3

Table 4.12 (Continued)

Classwide tootle goals met across each condition

	Intervention Phase			
	Bl 1	Tx 1	Bl 2	Tx 2
	Fourth Grade			
Mean	263	900	1172	1627
Number of days	4	5	5	3

Note: Bl 1 = Baseline 1 phase, Bl 2 – Baseline 2 phase, Tx 1 = Treatment 1 phase, Tx 2 = Treatment 2 phase, Peer = Darius' composite comparison peer, Tootle Goal Met = Number of collective tootles at the end of each condition

Summary

Based on visual analyses of the data, the tootling intervention package may be beneficial in decreasing problem behavior of various sorts (i.e., inattention, talking without permission, out-of-place behavior, etc.) and increasing on-tasks behavior and positive-peer-reporting. Students appeared to reinforce peers more (tootle) when a potential reinforcer was pending. Although students continued to tootle during baseline phases, tootling rates during intervention phases were superior to baseline conditions. Further, the immediate changes in tootling rates that occurred across the subsequent phase changes demonstrates strong experimental control, while showing that the interdependent reinforcement coupled with publicly posted progress feedback influenced the increased tootling rates observed during intervention phases.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the effectiveness of a positive peer reporting package, the "Duck, Duck Tootle Intervention Program", to improve on-task and teacher-identified problematic behaviors of target students and their classmates. In this section, the two hypothesis tested in this study are based on the results. Specifically these sections will provide an overview and an interpretation of the results, and implications of the findings of this study for practice in classroom management of individuals' and classwide behavior. Additionally, limitations of the current study will be presented, followed by suggestions for further research.

Hypotheses and Discussion

This section provides each hypothesis and a discussion of that hypothesis. Additionally, interpretation of the findings will also be presented.

Hypothesis 1

Classwide rates of Positive Peer Reporting (PPR) will increase when the Duck, Duck Tootle Intervention Program is implemented.

Specifically, tootling rates of five classes (i.e., kindergarten through fourth grade) were compared under experimental conditions (i.e., with and without the tootling intervention). Daily tootle rates for each class were obtained under the following phases: Baseline 1, Treatment 1, Baseline 2, and Treatment 2. These data were then examined to determine the effect of the intervention on tootling rates in each of the five classrooms. During the initial baseline phase, each class demonstrated relatively high rates of tootling (*M*=51.00, 47.87, 78.25, 55.40, and 65.75, respectively by grade, kindergarten through fourth grade). During the first treatment phase, each class demonstrated marked increase in tootling rates over those observed during baseline (*M*=90.80, 101.20, 156.00, 97.80, and 127.40, respectively by grade). Thus, each grade experienced a nearly double rate of tootling baseline to treatment. After the first treatment phase, a return to baseline was employed in which a sharp decrease in tootle rates were observed across all classes (*M*= 38.00, 42.40, 85.20, 38.00, and 54.40, respective to each grade). In nearly every class (with the exception of the second grade, all classes returned to a rate below that observed during the initial baseline. Following this second baseline phase, with reintroduction to the tootling intervention package during the Treatment 2 phase, tootling rates showed a marked increase across classrooms, relative to any of the other phases (*M*= 141, 109.6, 176, 149, and 151.60, respective to each grade). Increases in mean tootle rates over the second treatment phase over the first treatment phase ranged from 8 to 51 tootles, with first graders showing the smallest increase and kindergarten and third grade showing the

greatest increase. Notably, second grade showed the largest average tootle rates for all grades at both initial baseline and at the final treatment phases. Therefore, Hypothesis 1 was supported by the data for each class.

Discussion of Hypothesis 1

It is important to note specifics to this study. For example, during the first two days of Baseline 1, consistent with tootling rates observed in previous studies (Cashwell et al., 2001; Skinner et al., 2002), the students exhibited relatively high rates of tootling; however, tootle rates declined slightly on the third day. The initial relatively high rates of tootling during the first baseline phase may be attributed to novelty effects. After the initial high rates, tootling showed a successive decrease each day during Baseline 1 for all classes. This decrease suggests that students would not maintain positive reporting at relatively high rates without the implementation of other procedures to encourage the positive reports. As further support for this posit, the data for the second baseline show a marked decrease in all classes except the second grade, relative to the initial baseline. The immediate increase in tootling rates observed during the tootling package consistently occurred across classrooms, and demonstrates that the Duck, Duck, Tootle Intervention Package caused increases in the classwide tootling rates.

The immediate increase in the tootle rates during intervention also demonstrates experimental control. Specifically, each time the package was introduced, the tootling rates increased and each time the package was withdraw, the tootling rates decreased. Thus, it can be concluded that the positive changes in tootling rates were due to the treatment; hence, positive peer reporting (PPR) increased with the implementation of the

Duck, Duck Tootle Intervention Program across classes. This experimental control is strengthened by the fact that the study was replicated across classes with the same increase in tootling rates. This finding increases the confidence that the Duck, Duck, Tootle Intervention Package was responsible for the observed increase in positive peer report during intervention phases.

Additionally, the results also indicate that the package is effective for children in a broad range of grades (i.e., kindergarten through fourth grade) and with a number of teachers. It is important to note that there was variability in the level of structure and consistency in classroom management for each class. For example, the second and third grade classes were highly structured with defined rules and consistent classroom management strategies employed by the teacher; whereas, the first-grade and fourth grade classes were significantly less structured with a great deal of inconsistency. Despite these differences in teachers' classroom management styles, classwide tootling rates responded to the intervention and, thus the results of this study remained consistent with previous research. One factor, noteworthy of mentioning is that students in the fourth grade class employed student-directed planning, in which students actively planned to meet their goals. Observations revealed that the fourth grade class selected peer leaders, who influenced peers to embrace positive peer reporting, follow rules, and work together, hence possibly building class cohesion and improving class climate.

Further, anecdotal evidence suggested that the PPR tootling package impacted teacher behavior, as the kindergarten, first, and second grade teachers reported they had spontaneously added elements such as teaching children to accept feedback from receiving and not receiving tootles. Specifically, during the initial baseline phase, some

students demonstrated frustration when they did not receive positive peer reports (i.e., stickers/tootles). During those instances, teachers interjected explanations and talked individually with children who exhibited frustration. These talks often involved acceptance of feedback and "being a good sport".

In addition to demonstrating strong experimental control, the study showed indirect evidence for social or applied validity of the tootling package procedures. Specifically, after the primary researcher withdrew participation in the study, teachers and students continued the tootling program over the remainder of the school term. This maintenance may be best explained by procedural and process variables relative to teachers' roles, responsibilities, and priorities within the classroom setting. Routinely, teachers indicated favorable perceptions of the tootling intervention package, particularly relative to the practicality, ease, and convenience of the intervention. Contributing to the positive teacher perceptions of the tootling intervention package may be the fact that teachers and students were allowed to actively participate in shaping the intervention, thus tailoring it to fit the individualized needs of each class. For example, students and teachers provided examples of prosocial behaviors and group-activity reinforcers, which may have set the stage for teachers' initial acceptability of the program and encouraged the continual "buy-in" to the program. Furthermore, teacher insight regarding appropriate reinforcers for each class hugely helped shape the form that reinforcement took over the course of the intervention. Also influencing teacher acceptability and commitment to the intervention, may have been process variables including explanation of the broad goals of the intervention, solicitation of voluntary teacher participation, solicitation of teacher and student involvement in developing specific components of the

intervention (i.e., selection of group reinforcers, determination of weekday for reinforcement, participation in designing the tootle box and the publicly posted theme for performance feedback) (Dougherty, 1990). Specific components of the tootling intervention package (i.e., direct instruction in classroom rules, use of effective and time-efficient peer-reporting, group reinforcement, and emphasis on positive behaviors) may have further increased teacher acceptability and maintenance of the tootling intervention package.

Hypothesis 2

The Duck, Duck, Tootle Intervention Package will effect positive change in each of the 10 target students as follows: (a) total PPR for target students will increase following intervention implementation; (b) disruptive behavior will decrease; (c) appropriate behavior will increase following implementation; and (d) target behavior of referred students will approximate the behavior of non-referred students.

PPR: Interpretation and Discussion

Daily tootle rates and direct observations of on-task and problematic behaviors for each student were examined as to whether there was positive change, determined by an increase in daily tootles and a decrease in problematic behavior during implementation of the Duck, Duck, Tootle Intervention Package. Findings from the study reveal that all 10 of the target students demonstrated an increase in positive peer reporting rates during both intervention phases. A review of the graphs for daily number of tootles indicates an immediate and significant increase in the number of tootles for Dalia, Diego, Elias, and Brandy from the initial baseline to the first treatment phase. Additionally, there was an immediate decrease in their respective tootles upon return to baseline. During the

reintroduction of intervention during Treatment 2 phase, there was again an immediate increase in the daily number of tootles. When considering the other target student, either the change was not immediate (Jesus) baseline to intervention, was at best minimal (Angela and Tonya), or not sustained until the second treatment phase (Jasmine). For Darius and Deandre, the change was either non existent or too variable to be sure that the intervention had the desired effect for these students.

Another method is to look at the average number of tootles for each student during the four phases of the experiment. In all but one case, the mean number of tootles showed an increase during treatment phases, relative to baseline phases. Specifically, kindergarten target students, Diego and Jesus demonstrated increases in positive peer reports following intervention implementation (M=5.40, 5.66, and 1.60, 2.00 across intervention conditions respectively for Diego and Jesus). First grade students, Angela and Dalia also demonstrated increases in positive peer reporting rates during both intervention conditions (M=1.40, 2.00, and 2.60, and 3.00 across intervention conditions respectively for Angela and Dalia). Second grade students, Deandre and Elias, both demonstrated increases after intervention conditions were implemented (M=0.40, 0.66, and 2.40, 2.60, respectively for Deandre and Elias). Of the third grade target students, Darius exhibited a slight increase in PPR in Treatment 1, whereas after implementation of Treatment 2, PPR rates failed to increase from baseline to intervention (0.20 and 0.00, respectively). It is important to note that, compared to other referred students; Darius was significantly more dissimilar from his non-referred peers than other targeted students in this study. Specifically, Darius was somewhat larger than his peers, presented with the most severe behavior difficulties (i.e., verbal aggression, bullying his peers and physical

aggression) of all the targeted students. These factors may have contributed to Darius' minimal increase in PPR rates during intervention conditions. Previous researchers have found a strong correlation between poor social skills and low peer acceptance, low likeability ratings, low acceptability and greater peer rejection (Rubin, Burgess, & Coplan, 2002), and fewer positive and more negative interactions with peers (Asher, Parkhurst, Hymel, & Williams, 1990). This correlation is also true when considering relational/covert and overt behaviors (Henington, Hughes, Cavell, & Thompson, 1998). Furthermore, researchers have found that even though an aggressive child may show improved behavior following effective intervention, peers do not recognize that improved behavior and continue to reject the child (Dodge, Coie, Pettit, & Price, 1990). It is possible, based on teacher report and observations conducted in the classroom, that Darius was a child with significant peer rejection, and peer perceptions of his improved behavior was resistant to change. This phenomenon of continued poor peer perception may have had subsequent a negative effect on Darius' PPR rates, despite the observed improvements in his behavior. Notably, the other third grade target student, Jasmine exhibited consistent increases in PPR after implementation of intervention (M=0.40 and 1.60) and the entire third grade class exhibited a significant increase in mean tootle rates (approximately three fold from initial baseline to final intervention). Fourth grade students, Brandy and Tonya both demonstrated increases in PPR following intervention implementation (M=2.00, 2.00, and 1.20, 2.33, respectively for Brandy and Tonya).

It is important that variability exist in the amount of PPR experienced by target children. Additionally, the difference in the number of tootles provided to all target children and their composite comparison peer during all phases of the study were large.

For example, all of the target students received fewer than 6 tootles on average during the final intervention phase whereas, all of the composite peers (with the exception of Diego's peer) received double digit tootles (a low of 8.30 for Diego's peer and a high of 20.6 for Jasmine's peer). This pattern of peer tootling across all cases shows a significant difference in peers' willingness to award tootles to target students versus their composite comparison peers. This difference may have been due to poor peer acceptance and even peer rejection of these students (rather than peer rejection of only Darius). Specifically, previous research reveals that students who demonstrate aggressive, withdrawn, or inattentive-hyperactive behaviors are more likely to be rejected (Dodge et al., 1990). More importantly, findings reveal that many students who are rejected or neglected by peers may repeatedly experience their peers' rejection over time, despite changes in peer groups (Bukowski & Newcomb, 1984; Coie & Dodge, 1983). Coie and Dodge (1983) found that almost half the children rejected in fifth grade continued to be rejected 5 years later. Thus, peer rejection may be persistent and children may continue to reject some children despite changes in the student's behavior (Coie & Cillessen, 1993).

In summary, the number of tootles awarded to the target students was lower than those of their composite comparison peers. The Duck, Duck, Tootle Intervention Package was successful in increasing PPR rates for several of the students with defensible numbers; and for all except Darius the rates did show an increase in the number of tootles by the end of the final treatment phase. Thus, Hypothesis 2a was only partially supported showing that some of the students received an increase in positive peer reports during the intervention.

Disruptive Behavior: Interpretation and Discussion

Observations of target students and their comparison peers across phases shows that the disruptive/inappropriate behavior of target students showed an immediate change in level at each change in phase (i.e., decrease in percentage of observed intervals in which the behavior occurred during intervention and an increase during return to baseline). Additionally, for four target students (Dalia, Elias, Brandy, and Tonya) the data showed either stability or a downward trend for both of their respective identified behaviors of concern during each treatment phase with. For four more students (Diego, Deandre, Darius, and Jasmine), with a stability or decreasing trend in percentage of observed intervals were observed for both respective inappropriate behaviors during the final treatment phase. Finally, for two students (Angela and Jesus) the behavior showed mixed results with regard to trend and stability (i.e., only one behavior showed the desired decrease or stability). It is also important to note that during Treatment 2, target children showed improvements in inappropriate behavior (decreases), with respect to the behavior of target children approximating that of their peers.

When considering the median percentage of intervals in which the behavior was observed, all of the children showed the desired improvement in inappropriate behaviors during each treatment phase and higher percentage of intervals in which the inappropriate behaviors were observed. This was true for all target students. When considering the final intervention phase (Treatment 2), some students did better than others at reducing their inappropriate behaviors. Notably, Tonya's inappropriate behavior showed the least improvement with out-of-place behavior (*Mdn*=40%) and inappropriate noise (*Mdn*= 60%). Two students (Darius and Elias) showed very low median rates for their

inappropriate behavior (ranging from 0% to 10% for both identified behaviors of concern). The remaining students showed marked improvement in their inappropriate behavior during treatment phases. Furthermore, the improvement in behavior was noted from Treatment 1 to Treatment 2 phases for 9 of the 10 target students. Only Deandre showed a similar median score across both intervention phases.

Additionally, all target students showed a marked increase in their inappropriate behavior (as measured by the percentage of intervals in which the behavior was observed) when a return to baseline was implemented. Most students moved (showed an increase in median percentage points) about 40 percentage points from Treatment 1 to Baseline 2 phases. The greatest increase in inappropriate behavior, as measured by percentage of intervals in which the inappropriate behavior was observed, was exhibited by Darius when he changed from a median of 20% of the intervals in which out-of-place behavior was observed during Treatment 1 phase to a median of 80% of the intervals during Baseline 2 phase.

In summary, all target students showed an improvement (i.e., decrease) in their inappropriate behavior during the treatment phases and an increase in their inappropriate behavior during return to baseline. Therefore, Hypothesis 2b is supported by the results of this study showing that the intervention decreased targeted inappropriate behaviors of the targeted students.

Appropriate Behavior: Interpretation and Discussion

Findings from this study reveal that 10 out of 10 target students demonstrated increases in appropriate behavior during the intervention conditions compared to baseline

conditions. Three students (Diego, Elias, and Darius) were observed to engage in appropriate behavior (on-task) during 100% of the observed intervals during both of the treatment phases. Further, five (Jesus, Dalia, Deandre, Jasmine, and Brandy) of the students were observed to engage in appropriate behavior during 100% of the observations during one of the treatment phases. Two students showed less relative responsiveness to the intervention with regard to their appropriate behavior. Tonya was on-task for only a median of 40% and 60% of the observed intervals during Treatment 1 and Treatment 2, respectively. Angela was observed to be on-task for a median of 80% and 90% of Treatment 1 and Treatment 2 intervals, respectively.

Most target students showed an increase (as measured by the median percentage of intervals in which on-task behavior was observed) of 40 to 70 percentage points from initial median baseline to final median treatment phases (with some even moving from a median of 0%). However, Jasmine showed the greatest improvement in her on-task behavior from initial baseline to final intervention with a growth of 70 percentage points (*Mdn*=30 to *Mdn*=100).

In summary, all the targeted students showed an improvement in on-task behavior during the intervention and showed a decrease in on-task behavior during the return to baseline was implemented. Therefore, Hypothesis 2c was supported by the results of this study showing all students improved their on-task behavior as a result of the intervention.

Comparison of Target Student to Peers: Interpretation and Discussion

Data findings revealed that the inappropriate behaviors of the target students began to decrease. For example, three students (Darius, Elias, and Brandy) showed

levels of inappropriate behavior during the final intervention (Treatment 2) phase that was similar and had significant overlap with those behaviors of their peers. Interestingly, two of these students (Darius and Brandy) showed rates at nearly 100% of the observed intervals during baseline phases. Four other students' (Diego, Dalia, Deandre, and Jasmine) showed behaviors that were very similar to that of their peers. Three other target students (Jesus, Angela, and Tonya) showed decreases in inappropriate behavior but these decreases were still relatively different from those of their peers.

With regard to appropriate behavior, four target students (Jesus, Elias, Darius, and Brandy) were able to approximately their on-task behavior to similar levels as their peers (as define by at least one overlapping data point with their peer) when considering the median percentage of observed intervals. One target student, Angela, was able to nearly match per peer's on-task behavior (within 10%). Five target students (Diego, Dalia, Deandre, Jasmine, and Tonya) still had a significant difference (at least 20% points) between their on-task behavior and their peers' behavior. The greatest discrepancy between a target student and her peer was exhibited by Tonya in which her median percentage remained at 60% across all observation during Treatment 2; whereas, her peer was able to bring behavior to 100% of the observed intervals across 2 days. It is important to note that the behavior of the peers in all situation improved under the treatment conditions, relative to the baseline conditions. This was true even in classroom in which the teacher was less structured and has greater behavior problems across all students (i.e., those with inappropriate behavior levels in comparison peer at 50% of the observed intervals and on-task behavior at 60% of the intervals; Dalia's class for example).

Finally, another way to compare target students' and their peers' behaviors is to compare the target student during Treatment 2 to their peer during Baseline 1. For inappropriate behavior, two students showed mixed results, relative to their peers' pre intervention levels of behavior. At Treatment 2, Jesus showed a similar level in his inappropriate noise, but still showed greater levels of out-of-place behavior than his peer during Baseline 1. At Treatment 2, Tonya showed similar levels of inappropriate noise, but dissimilar levels of inattention to that of her peer at Baseline 1. For appropriate behavior, all but two students had approximated during Treatment 2 their peer's on-task behavior during Baseline 1. At Treatment 2, Deandre still exhibited on-task behavior during fewer percentage points of observed intervals than his peer had during Baseline 1. Tonya exhibited on-task during fewer intervals during Treatment 2 than did her peer during Baseline 1.

In summary, although not all the students were able to match the behaviors (appropriate or inappropriate) of their peers; in all situations their behavior improved. At times this improvement brought their behaviors to be consistent with their peers, in other cases the target students were able to approximate the behavior of their peers at baseline. This approximation was not specific to any one target student when considering appropriate and inappropriate behavior together. Therefore, overall Hypothesis 2d was supported by individual target student data.

Additional Findings of This Study

In addition to the above empirical findings, this study also revealed positive changes in class climate as it relates to behavior. Specifically, informal teacher reports

suggest that the inappropriate peer interactions of referred children decreased during implementation of the tootling intervention package. Teachers also noted positive changes in the behavior of the target students during implementation of the tootling intervention package. These reports are consistent with studies in which the effects of positive peer reporting and tootling had on peer interactions (Skinner, Needenriep, Robinson, Ervin, & Jones, 2002; Jones et al., 2000). These researchers suggested that praise and tootling transfer to more natural contexts and reduce inappropriate peer interactions outside of the structured praise sessions.

Implications

The need for effective school-based interventions continues to be paramount, as the No Child Left Behind Act of 2001 mandates the need for scientifically validated practices. This requirement for empirically supported interventions highlights the importance of classroom strategies that enhance teachers' abilities to meet the needs of all students and that enhances students' capacity to respond to intervention and, hence, instruction. Relative to response to intervention (RtI), the Duck, Duck, Tootle Intervention Package presented in this study is designed to address the needs of all students, especially those at-risk for behavior and/or academic problems prior to referral for consideration of special education services. Once a student has been identified as needing additional support, the RTI framework advocates use of evidence-based interventions that require resources appropriate to the student's level of need, and then monitoring the progress of students receiving those interventions. At Tier 2, this is interpreted as providing interventions, such as the Duck, Duck, Tootle Intervention

Package that are easy to administer to small groups of students, and which require limited time and staff involvement. Specifically during implementation of the Duck, Duck, Tootle Intervention Package at Tier 2, if a student has shown a poor response to the classroom-level interventions, the campus student support team (Teacher Support Team, Core Team, etc.) has sufficient data to determine whether further testing is warranted. Further, as a Tier 2 RtI intervention, tootling provides a proactive approach to meet the needs of students and an avenue to determine students' responsiveness to an easy-to-implement classwide intervention. Additionally, as a Tier 2 intervention, the Duck, Duck, Tootle Intervention Package provides for the progress monitoring and treatment fidelity required at this level of intervention. Moreover, by meeting the characteristics of a Tier 2 intervention, the Duck, Duck, Tootle Intervention Package is likely to improve the classroom environment and increase teachers' ability to meet difficult-to-manage students' needs, while providing opportunities for frequent feedback and increased opportunities for success (Ogonosky, 2008). Furthermore, as a Tier 2 intervention, it is necessary to establish decision rules used to monitor student progress and determine intervention effectiveness (Ogonosky). Decisions may be most accurate when comparing pre and post intervention results and the target child's behavior to that of her/his peer. The direct systematic observations and positive peer reporting rates for appropriate behaviors provided in the Duck, Duck, Tootle Intervention package are effective in presenting this important information. From an assessment perspective, the positive peer reporting component of the tootling intervention package may have diagnostic value for teachers relative to its provision of data on high frequency or covert behaviors (Brown, Topping, Henington, & Skinner, 1999).

Use of Tootling as a Systems-level Intervention

An additional consideration of an intervention is whether is can be used with a variety of problematic behaviors, across various ages of students, and with large numbers of students at the same time. With its success as a classwide intervention, as indicated by the improvement of all students in kindergarten through fourth grade, the results of this study suggest that this tootling program may be equally successful as a school-wide program for positive behavior intervention supports with elementary age students. Furthermore, the Duck, Duck Tootle Intervention Package allows teachers to integrate instruction and management into a comprehensive classroom system, opposed to treating instruction and management as separate domains. Specifically, during the tootling intervention teachers can provide instruction while simultaneously providing students with stickers. This directiveness provides students with explicit instruction, guided practice, and performance feedback in classroom rules and routines and leads to enhanced opportunities for academic and social success (Gettinger & Seibert, 2002). Specifically, classroom rules play a vital role in creating a learning environment that promotes student engagement, cooperation and academic productivity (Malone & Tietjens, 2000). Without rules, which are students' guidelines for expected classroom behavior, it is impossible for teachers to maintain a safe and sound environment that is conducive to instruction and learning. This tootling package explicitly requires active teaching of classroom rules, which communicates to students exactly what is expected, while simultaneously providing opportunities for peer reinforcement of behaviors consistent with the classroom rules. Furthermore, the fact that the tootling package focuses on group aspects of classroom management, rather than individual behavior

alone, may have contributed to positive teacher perceptions of the program. Another factor that may have contributed to teacher perceptions is the fact that the tootling package, for the purpose of this study, emphasizes the amount of time available for learning (i.e., on-task behavior). Underscoring this factor is the direct positive correlation between academic achievement and academic engagement rates (proportion of instructional time students are engaged in learning) (Gettinger & Seibert).

Specifically, as a school-wide program, the tootling package would emphasize a systems approach for redesigning schools to prevent academic and behavior problems through proactive instruction and school-wide behavior support (Sugai, Horner, & Gresham, 2002). Additionally, the tootle training was conducted in the natural context of the classroom to encourage skill use and facilitate reinforcement opportunities from teachers (i.e., prompting tootling by providing stickers to tootle) and positive peer reports (i.e., tootling), thus maximizing generalization and maintenance of tootling (Gresham, 1998). Also important to note is the critical nature of involving teachers as intervention agents. Specifically, according to Lo, Loe, & Cartledge (2002), it is critical to involve teachers as intervention agents because of their ability to prompt and reinforce socially responsible behaviors during the course of everyday school activities. It is further important to note that reports from multiple students also showed that students found the tootling intervention package acceptable.

It is also noteworthy to mention the implications of the Duck, Duck, Tootle Intervention Package on peer relationships, as socially isolated students are given the opportunity to become sources of reinforcement, which may in turn increase their likeability (Morrison & Jones, 2006; Warren, Baer, & Rogers-Warren, 1979). Further,

implications for students whose behavior is addressed with the tootling intervention package are potential positive effects on student grades, school attendance, social skills, and peer relations. Additional classwide implications include improvements in classroom climates and enhanced relationships between peers and teachers.

Long Term Outcomes for At-risk Students

Also critical in education is the long-term outcomes for children (Hamre & Pianta, 2001). The positive peer-reporting component of the tootling intervention may have also had an impact on academic engaged time and academic learning time; thus, allowing provided teachers with more time to focus on teaching opposed to managing classroom behaviors. More importantly, research cites that academic learning time is significantly positively correlated with academic achievement, learning and appropriate behavior (Hall, 2008). Specifically, teachers often apply so much energy and attention to monitoring and punishing inappropriate behaviors that even when they observe incidental prosocial behaviors, they may not react to or even be aware of these appropriate behaviors, hence tootling could prove a practical option. Supporting teacher perceptions of such interventions are research findings, which reveal that teachers prefer interventions that are effective, efficient and increase appropriate behaviors (Witt & Martens, 1983). As a comprehensive intervention program, that integrates strategies to promote children's learning (academic, social, and behavioral), this tootling intervention package may reduce grade retention in students who are at risk for academic failure. Specifically, children are most often retained due to low academic achievement, behavioral difficulties, or a combination of the two (Jimerson, 2006). Dependent upon, sufficiently

early implementation, this tootling intervention may serve a preventative function for at-risk students who have not yet been retained or as interventions for students who have been recommended for retention.

Studies indicate that behavior problems in the early school years are strong predictors of antisocial behavior and psychopathology in adolescence (Egeland, Pianta, & Ogawa, 1996). Moreover, as antisocial behavior patterns become increasingly stable over time (Bennett, Lipman, Brown, Racine, Boyle, & Offord, 1999) early intervention remains paramount to students' future academic and social outcomes. Furthermore, a review provided by Jimerson, Anderson, and Whipple (2002) revealed a consistent finding that students retained during elementary school are between 2 and 11 times more likely to drop out of high school than non-retained students. Furthermore, grade retention increases the risk of dropping out by 20 to 50% and is associated with other long-term negative outcomes. For example, Jimerson (1999) summarized a longitudinal study in which children were followed for 21 years. Retained students, low-achieving-but-promoted students, and a control group were compared for outcomes. This study found that retained students (a) had lower levels of academic adjustment (i.e., a combination of achievement, behavior, and attendance) at the end of Grade 11, (b) were more likely to drop out of high school by age 19, (c) were less likely to receive a diploma by age 20, (d) were less likely to be enrolled in a postsecondary education program, (e) received lower education/employment-status ratings, (f) were paid less per hour, and (g) received poorer employment-competence ratings at age 20 in comparison to a group of low-achieving students.

Over the last four decades, much has been learned about early risk factors related to academic failure, and its relationship with later school dropout, delinquency, drug abuse, depression, and other problem outcomes. Specifically, in a study investigating the long-term outcomes of a universal method of classroom behavior management in 1st and 2nd grade classroom, aimed at aggressive, disruptive behavior, researchers found that implementation of the Good Behavior Game improved long term outcomes (Kellam, 2006). Furthermore, aggressive, disruptive behavior as early as 1st grade has been repeatedly found a risk factor for later school failure, delinquency, violence, drug abuse, and high-risk behaviors.

Summary

Dealing with students with problem behavior has been consistently identified as one of the greatest challenges facing today's educators (Martens, Witt, Daly, & Vollmer, 1999). These students are at risk for academic failure and retention, poor peer relationships, and long term difficulties. In the short term, problematic behaviors oftentimes interfere with teacher ability to teach and function efficiently, consequently reducing the amount of time available for teachers to deliver instruction. This tootling intervention package permits teachers to spend less time on classroom management and, thus, devote more time to effective instruction through the use of peer-mediated techniques (positive peer reporting). With the transference of behavior management from the teacher to the students coupled with its effectiveness and utility across grades, the tootling intervention package continues to be an appealing individual, classwide, and system level intervention. As such, this intervention package may be implemented within

the tiered model of RtI to effectively remediate problem behaviors in students in the elementary grades.

Limitations

Although the current study suggests that the tootling intervention package was effective in increasing positive peer reporting rates and decreasing inappropriate behaviors in referred students, this study has limitations that should be identified. This study was limited by threats to internal and external validity. Validity refers to the ability of the study to represent what it claimed it would. The variables possibly influenced the results of the study (internal threats), as well as its generalizability (external threats) to others not included in this study.

Threats to Internal Validity

Internal validity is the ability of the study to demonstrate a causal relationship between independent and dependent variables. Events outside the study may have resulted in effects on the experimental outcome, hence threatening its internal validity (Gall, Borg, & Gall 1996).

In the present study, one threat to internal validity may have been the possible maturation of students over the course of the research period. This study involved a relatively brief intervention. Additionally, the results were replicated through Baseline 2 and Treatment 2, thereby strengthening the confidence in the results through replication additionally, the study was replicated across a number of classrooms with similar results. These findings indicate that students respond similarly to the intervention regardless of

their age. Thus, it is believed that maturity is not likely to be a significant factor in the findings of this study.

A second threat to internal validity is regression to the mean. Specifically, there is a natural tendency of moving data toward the mean and it causes this statistical regression. For example students demonstrating either very high or very low tootling rates will tend to exhibit tootling rates close to the mean when the tootling intervention is reintroduced without any effect of the tootling intervention package.

Mean scores were calculated for individual and classwide tootling rates which were consistent with a normal distribution, absent of extreme scores, thus deeming the mean an appropriate measure of central tendency to describe tootling rates. Median scores were calculated to describe the occurrence of appropriate and inappropriate behaviors, which presented with variability. Use of median scores addresses high and low score variability observed in behaviors thus allowing for attainment of a more stable representation of each class' and target students' tootling performance.

Another potential threat to internal validity is procedural integrity. The possibility exists that teachers' behaviors may have been deviated from the procedural protocol. This potential threat was mediated by repeated training sessions and observation by the researcher on a regular basis to measure the integrity (see Procedural Checklist, Appendix C), with which the intervention and the data collection procedures were conducted. Observations indicate that teachers implemented the procedures at 100% levels when observed by the researcher.

Within this ABAB withdrawal design study, the risks of other threats to internal validity are also posed. For example, the interdependence of baselines may have

introduced carry over effects to anther baseline condition(Barger-Anderson, Domaracki, Kearney-Vakulick, & Kubina, 2004) As well, inconsistency in the effects of the intervention may have occurred due to positive peer reporting rates (i.e., tootles) for some target children being altered when the intervention was introduced, whereas PPR rates for others were not altered. For example, Darius received the following mean tootles across the respective conditions (M = 0, .20, 0, 0). While his same grade peer, Jasmine received the following mean tootles across respective conditions (M = 0, .40, 0, and 1.60).

Threats to External Validity

External validity is a measure of the extent to which a study's findings from an investigation can be generalized to other settings, subjects and other intervention agents (Watson & Gresham, 1998). Threats to external validity include sample characteristics, reactivity and novelty effects.

One specific external threat to this study involved sample characteristics. This study was limited to a specific grade range of the subjects as well as to students referred for relatively similar behavior problems. The children in this study were non-minority and minority youth of low socio-economic status attending a Chapter I elementary school located within a low-income area, of a large southwestern city. Teachers from five intact regular education elementary classrooms identified students across kindergarten through fourth grade levels. The ethnic breakdown of target students was as follows: (a) kindergarten (two Hispanic males, mean age 5.5 years); (b) first grade (two Caucasian females, mean age 6.4 years); (c) second grade (two African American males, mean age

7.4 years); (d) third grade (one African American male and 1 African American female, mean age 8.25); and fourth grade (two African American females, mean age 9.6 years).

Additionally, this study was limited to only 10 targeted children with behavior problems. Therefore, specific care should be exercised when attempting to generalize this study to other students, especially those who differ significantly from those used in this study.

Generalizability is further limited by the fact that the teachers in this study varied widely in their classroom management skills with no effort to control for their skill prior to implementation of the intervention, the number of years of teaching experience, and the teachers' endorsement of the tootling package as effective. Additionally, no measurement of their classroom skills was obtained in the course of this study, other than their adherence to the intervention protocol. Factors specifically related to this study included such behavior as the inability to control the distribution of stickers to initiate tootling, the teachers' ability to accurately describe and define problematic and on-task behaviors, and the varied number of tootling opportunities within and across classrooms. Therefore, generalization of the results in this study to other teachers and classrooms may be limited.

Finally, the present study did not include a component analysis of the tootling program. It is possible that the change that was observed across time may have been an artifact of a single component of the tootling package.

Future Research

Although tootling has already been empirically established as an effective intervention to increase positive peer reporting (Cashwell et al., 2001; Skinner et al., 2000) and has been shown to be an effective in classrooms in a number of grades (i.e., kindergarten through fourth grade), further research is needed to address identified limitations of the Duck, Duck, Tootle intervention package. Specifically, although empirical findings to date (Cashwell et al., 2001; Skinner et al., 2000; Skinner et al., 2002) have shown that positive reporting is beneficial to establish treatment effects and increasing positive peer reporting and bi-product effects (e.g., enhanced social status and social interactions), such outcomes may not be maintained when these procedures are withdrawn (Skinner et al., 2002). Thus, future researchers should determine if the impact of the Duck, Duck, Tootle intervention package is maintained across time (e.g., 2 to 4 weeks following intervention cessation). Researches should further determine if gradually fading procedures of the tootling intervention package enhances maintenance (Skinner et al., 2002).

With the requirements for teachers to cover vast amounts of academic content, while simultaneously providing opportunities for students to participate in academic engaged time, there exist research implications for this area. Academic engaged time (AET), which represents the percentage of allocated time that students actively participate in instructional activities (Brophy & Everson, 1981), is one of the most critical variables in student learning and appropriate behavior (Hofmeister & Lubke, 1990). Specifically, when students are not meaningfully engaged in instructional activities, misbehavior (i.e., talking without permission) is likely to occur, and interfere with

academic engaged time, hence, interfering with student learning. Therefore, future research is warranted to investigate the impact of the Duck, Duck, Tootle intervention on academic engaged time and student learning time. Further research implications lie within the effect of the Duck, Duck tootle intervention package on learning and high stakes testing outcomes.

Given the effects of peer isolation and rejection often observed in students with behavior problems, future research should investigate whether schoolwide implementation of the tootling intervention package may prove to be effective in promoting adaptive skills and enhancing peer relationships among all children. Specifically, previous studies have revealed that many students who are rejected or neglected by peers may repeatedly experience peer rejection over time, despite changes in the individual's behavior (Dodge et al., 1999) and in peer groups (Bukowski & Newcomb, 1984; Coie & Dodge, 1983). Coie and Dodge found that almost half the children rejected in fifth grade continued to be rejected over a 5-year period. Thus, peer rejection may be persistent and children may continue to reject some children despite changes in the student's behavior over time (Coie & Cillessen, 1993). Notably, those students who are socially rejected and/or neglected by peers are more likely to experience other school-related problems, engage in delinquent behavior, and experience mental health problems (Coie, Dodge, & Kupersmidt, 1990; Parker &Asher, 1987). Furthermore, the additive effect of aggression and peer rejection in boys has been shown to produce the poorest outcome in adolescents (Bierman &Wargo, 1995; Coie, Lochman, Terry, & Hyman, 1992; Coie, Terry, Lenox, Lochman, & Hyman, 1995). Therefore, longitudinal research following implementation of tootling interventions in which participants are

followed across several years, is needed. It is possible that tootling procedures assist students who are neglected or rejected by their peers in development of social skills and, as a result, indirectly provide enhanced social status with peers. If this is the case, these students would have better peer acceptance and potentially increased positive outcomes within classroom environments and beyond.

Another important expansion of the related research would include measurement of the effects of the tootling intervention package on other dependent variables (e.g., teacher/student relationships, positive ratings/perceptions of classroom environments). The Duck, Duck, Tootle intervention package was designed to increase appropriate behavior, while encouraging students to work towards a common goal through positive peer reporting and implementation of interdependent group contingencies. As school psychologists continue to seek ways to significantly alter school systems by altering the day-today activities of teachers and students, it may be beneficial to examine tootling as a vehicle to change school-wide focus from punishing antisocial behavior to reinforcing prosocial behavior, as a Tier 2 intervention for RtI. Specifically, given the previous research findings on the tootling procedures in classroom settings, it would be beneficial to explore the effectiveness of the Duck, Duck, Tootle Intervention Package by examining its effects with larger and more varied school-wide systems, in order to empirically validate positive side effects of the tootling package on school systems. At Tier 2, interpreted as providing interventions that are easy to administer to small groups of students, and which require limited time and staff involvement, the Duck, Duck, Tootle Intervention Package meets these criteria. As well, with districts and schools encouraged to monitor closely the implementation and outcomes of Tier 2 interventions,

the Duck, Duck, Tootle Intervention Package, provides for simplistic monitoring and daily data collection. With the implementation of the Duck, Duck, Tootle Intervention Package as a Tier 2 intervention, if a student fails to respond successfully to the Duck, Duck, Tootle Intervention Package, the decision making team for the campus (i.e., Teacher Support Team or Core Team) will have evidence to determine whether further testing is warranted to investigate the student's academic proficiency. Therefore, future researchers should determine the efficacy of employing the Duck, Duck, Tootle Intervention package as a Tier 2 intervention for RTI, with focus on RTI components, progress monitoring and treatment fidelity.

Further research is also warranted to determine if the Duck, Duck, Tootle Intervention Package would (a) decreases school-wide student antisocial behavior, (b) improves school-wide student relationships, (c) enhances students' perceptions of school, (d) decreases school-wide escape/avoidance behavior such as bullying, truancy, and (e) makes going to school with classmates a more rewarding and fulfilling experience for students (Skinner et al., 2000). Relative to response to intervention it may be equally beneficial of researchers to investigate the utility of the Duck, Duck, Tootle intervention package as a means of data collection to track student individual response to universal and classwide intervention.

It is also noteworthy to mention that this tootling package, according to teacher reports, reduced the number of socially non-referred isolated children. Although this study did not examine this aspect of the effects, it is important to determine if previously rejected or neglected children were proved an opportunity to become sources of reinforcement (i.e., providing tootles to peers). It is possible that the new role these

children played in working towards the common goal of tootling may have, in turn, increased these students' likeability (Morrison & Jones, 2006; Warren, Baer, &Rogers-Warren, 1979). This is another area that warrants additional research.

Summary

The current findings introduce several unique contributions to the literature, including the introduction of tootling as an intervention package. This study showed Duck, Duck, Tootle to be an empirically sound intervention for classwide use as a model of positive behavioral supports. Furthermore, with the continued need of school psychologist to help make systemic change in school environments, it remains imperative to employ interventions that are simplistic, time-efficient and resource efficient (Elliott, Witt, & Kratochwill, 1991; Gresham, 1997). The tootling intervention program was resource efficient in that a great many of the reinforcers used were activity reinforcers or tangible reinforcers already within the teachers' supply (i.e., pencils and erasers). The utilization of peers to monitor one another (i.e., peer-monitoring), as opposed to teacher-monitoring, also addressed the issue of requiring large portions of teachers' time by reducing the time teachers needed to spend managing the program (Henington & Skinner, 1998). Modeling the program after a system that was, by default, already in place in the classroom (i.e., punishment and tattling) provided a vehicle of understanding based on a familiar premise, for students and teachers, needed to implement the program.

Finally, the students and teacher helped shape the program by being interactive participants in the training sessions. Particularly, teachers and students participation in providing examples of prosocial behaviors and group-activity reinforcers encouraged the

continual “buy-in” to the program, while shaping the form that reinforcement took over the course of the intervention.

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APPENDIX A

DEFINITIONS OF TERMS AND INSTRUMENTS

DEFINITIONS OF TERMS AND INSTRUMENTS

List of Terms:

The following terms were utilized for the purpose of this study:

1. *Antecedent Conditions*-a stimulus or event that preceded some other event or a contingency (Catania, 1998).
2. *Behavior*-anything an organism does; responses (Catania, 1998).
3. *Comparison Student*-student possessing similar demographic characteristics (i.e., gender, grade-level in school) to target child being observed. Peer comparison student is observed every fifth interval.
4. *Consequence*-an event produced by some other event (i.e., stimulus presentation or removal, a change in contingencies or any other environmental change (Catania, 1998).
5. *Contingency*- the conditions under which a response produced a consequence; the conditional probabilities relating some events (i.e. responses) to others (i.e., stimuli); conditions under which some stimuli were followed by others (Catania, 1998); a three-term operant behavioral construct consisting of (a) antecedent stimuli, (b) a response or target behavior, (c) and a consequence, with these three constructs being held together by their contingent, or "if-then" relationship" (Skinner, Skinner, & Cashwell, 1998).
6. *Independent Group Contingencies*-construct where contingency components (i.e., antecedents, behavior, consequences, and target behavior criteria) required before receiving access to consequent stimuli). This construct

provided for each student to receive access to reinforcing stimuli that is contingent upon their own behavior. Independent Group Contingencies allow for students to be provided with the same antecedent stimuli and criteria are held constant across students. All students receive the same consequences (i.e., grades, honor role) dependent upon meeting the same criteria or goals under the same stimuli conditions.

7. *Individual Contingencies*- construct with specific reinforcers or consequences that were based on each child's unique needs and allowing each aspect of the three-term contingency (i.e., antecedents, behaviors, and consequences) to vary across students.
8. *Interdependent Group Contingencies*-construct in place when each member of a group receives access to reinforcement based on some aspect of the group's behavior. Criteria are put in place for the entire group to receive access to reinforcing activities, based on the group's behavior (i.e., cumulative totals).
9. Intervention-a planned modification of the environment made for the purpose of altering behavior in a specified way.
10. *On task behavior* (+)- included all behaviors compliant with teacher directives, and for the purpose of this study refers to operational, academic behaviors targeted by this study consisting of four on-task classroom behaviors operationally defined as follows: (a) *sitting quietly*–the student's bottom is in his or her seat, and the child is not talking; (b) *paying attention*–the student's eyes are on either the teacher or the chalkboard, as appropriate,

and the child is not talking; (c) *completing written assignment*–the student has a writing implement in hand, and the point of the implement is touching the paper; and (d) *completing reading assignment*–the eyes of the student are fixed on either the book or the paper, as appropriate.

11. *Making noise (N)*- included any sounds created by the child which distract either another student or the teacher from the business at hand. The noise may have been generated vocally (including "talk outs" or unintelligible sounds) or non-vocally ("tapping pencil or snapping fingers").
12. *Out of Place (OP)*- included any movement beyond either explicitly or implicitly defined boundaries in which the child was allowed movement. If the child was seated at his/her desk, then the movement of any sort of the seat was rated "out of place".
13. *Physical Contact (PC)*- was defined as any contact with another person or another person's property which is unacceptable to that person. Kicking, hitting, pushing, tearing, breaking and taking were categorized as physical contact.
14. *Off-task (OT) behavior* -was defined as any movement off of a prescribed activity which does not fall into one of the three previously defined categories. "Looking around," "staring into space", "doodling" or any observable movement off of the task at hand was included.
15. *Variable 1/Variable 2 (V1/V2)* -included any other observable and defined behaviors targeted by the teacher and or observer.

16. *Public Posting*- a form of performance feedback providing information or knowledge of processes and results to promote transfer or maintenance of skills and behaviors as well as to determine if the goals that were set had been met (Arco, 1991); act of displaying progress towards a goal in a visual way for all to see.
17. *Target Students*- teacher-referred students in the general education population, who exhibit behavioral and/or academic difficulty. Eight target students were chosen as target students.
18. *Tootling*-positive peer reporting in which students engaged in peer reinforcement by placing stickers on peers' tootle charts which indicated an incidence of on-task behavior, observed by the reinforcing student.
19. *Tootling Package*-(see Appendix C) complete intervention package including the implementation of positive peer reporting, interdependent group contingencies and publicly posted feedback.

Instruments:

The following instruments were used for this study:

1. *Systematic Observation Form*-Momentary time-sampling observation form utilized in the local school district.
2. *Daily Tootle Recording Sheet* (See Appendix H)-form used by teachers to record the daily number of tootles received by the class and by target students.
3. *Procedural Checklist* (see Appendix C)-form used by teachers to record completion of daily step-by-step tootling objectives.

4. *Performance Icons*-graphic icon used to indicate the raw number of total class tootles (i.e., performance) as attached with Velcro adjacent to designated pre-determined criteria indicated.
5. *Tootles*-oval stickers used as a tangible reward which indicated and reinforced students' on-task behaviors.
6. *Tootle Box*-decorated box was used for storing the daily collection of used tootle charts.
7. *Tootle Chart*-(see Appendix A) paper grid that was used to allow students to reinforce peers for on-task behaviors, by students placing stickers in vacant squares on peers' grids.

APPENDIX B

SYSTEMATIC OBSERVATION FORM-CODING FORM

SYSTEMATIC OBSERVATION FORM

NAME_____ DATE_____ TEACHER/SUBJECT_____
TIME IN/OUT _____/_____ CLASS SIZE_____ CLASS ACTIVITY_____
OBSERVER_____ APPROVAL (+)_____ DISAPPROVAL (-) _____
SPECIAL VARIABLES: V1= _____ V2= _____
ATYPICAL BEHAVIOR: _____
PEER INTERACTION: _____ COMMENTS:_____

METHOD OF PRESENTATION	INTERVAL	TARGET STUDENT	PEERS
	1	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	2	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	3	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	4	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	5	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	6	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	7	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	8	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	9	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	10	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	11	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	12	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	13	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	14	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	15	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	16	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	17	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	18	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	19	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	20	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	21	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	22	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	23	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	24	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	25	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	26	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	27	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	28	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	29	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	30	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	31	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	32	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	33	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	34	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	35	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2
	36	+ N O/P P/C O/T V1 V2	+ N O/P P/C O/T V1 V2

APPENDIX C

PROCEDURAL CHECKLIST, TOOTLE CHART, AND TOOTLING PROCEDURAL SCRIPT

PROCEDURAL CHECKLIST

Teacher_____ Date_____

Instructions: Please carefully read through list below placing an "X" beside items as they are completed. Thank You.

____ Be sure the tootle goal and reinforcers remain posted for students to see.

_____ Tape tootle charts to each student's desk by8:25.

_____ Begin Tootling by 8:30: Issue individual stickers to students throughout the day

_____ Ensure Tootle Box is visible and accessible to students to store completed tootle charts.

_____ Verbally announce to the class at the end of each day, what the classwide tootle count was for that day.

_____ At the end of the day adjust performance icon to reflect classwide performance for the day.

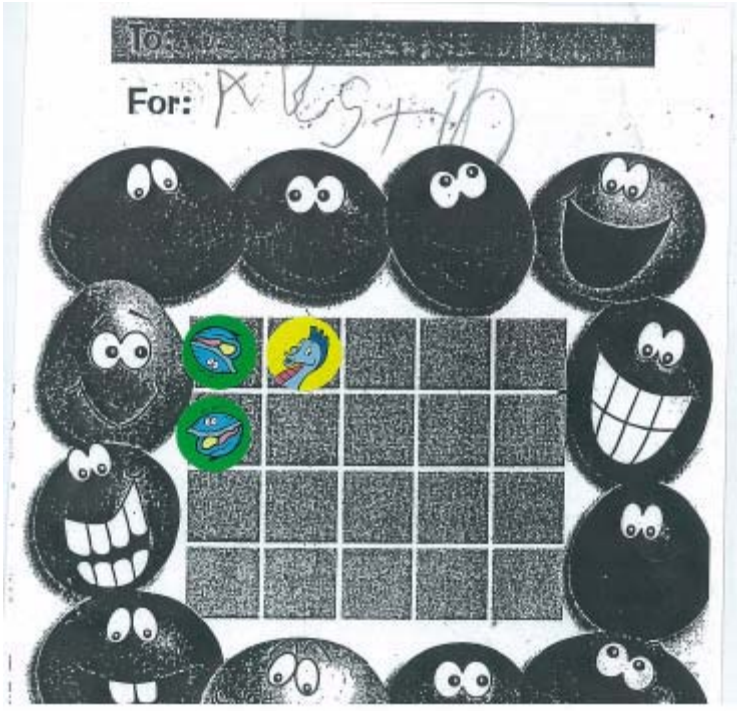
_____ Remove tootle charts from tootle box and place in folder.

_____ Tally and record tootle totals for target child on summary form on front of the folder.

_____ Tally and record tootle totals the class on summary form on front of the folder

_____ Check off completed steps on this form (Procedural Checklist)

TOOTLE CHART



Tootling Procedural Script
Training Day One
(15 minutes)

Self Introduction
[Introduce self to class.]

Introduction of target behaviors
"What does it mean to be a good student?"
[Confirm correct responses and provide praise.]

"That's right; all of those things are a part of being a good student"
[Solicit examples from class]

"Now you tell me some ways that you can be a good student in class."
[Confirm correct responses and provide praise]

Introduction of Tootling
"Does anyone know what tattling means? Tattling is when you tell the teacher something that one of your classmates did that was wrong. Well you guys know what, there is a good way of telling on your classmates that was helpful called tootling."

"Tootling is when you tell the teacher something that one of your classmates did in class that was right! You know telling the teacher something that they are doing that they are supposed to be doing. Remember tootles have to be something that your classmate did in class."

"Some examples of tootling are – sitting quietly or writing your assignments – things like that."
[Solicit examples of tootling.]

"Now it's your turn. You give me some examples of tootling."
[Praise and provide corrective feedback.]

Tootling Procedural Script
Training Day Two
(15 minutes)

Review Tootling
"Does everyone remember what tootling is? It's when you tell the teacher something that your classmate did that was right: something they were supposed to be doing. Remember now, with tootling you don't tell what you did, but what your classmate did that was right. Now when we tootle, we look at everyone. Not just out friends and you only have three seconds to give out a tootle. Also, remember with tootling, you can only tell something your classmate did, not something that your teacher or another adult did; and it has to be something they did in the classroom. These good things your classmates are doing, we are going to call them tootle behaviors."

Verbal Practice
"Now let's practice to see if you guys know what tootle behaviors are. I'm going to point to you and you tell me who you see that is doing what they should be doing. Be sure to look around and find what tootle behaviors you see and who is doing it. Now let's see."
[Point to students and have them identify what peers they see doing tootle behaviors and what they are doing. Supply positive and corrective feedback as needed.]

Tootling Procedural Script
Training Day Three
(20 minutes)

Set up
Tape tootle charts to desk
Place decorative shoebox on teacher's desk

Introduce Duck, Duck, Tootle
"Has anyone ever played Duck, Duck, Goose? Well, we are going to do something like it, called Duck, Duck, Tootle. On your desk, you will find a chart with happy faces. This is a tootle chart. Each square represents a tootle slot."

Introduce Stickers as Tootles
"Everyone likes stickers, right? We are going to use the stickers to represent tootles. The way you Duck, Duck, Tootle is pretty easy. Mrs. _____ will be it. She will walk around the room while you guys are doing your class work and while she is teaching. When she gives you a sticker, you look up and find one of your classmates

doing what they should be doing. After your have found a classmates doing what they should be, you tootle – quickly go and place the sticker in one of the tiny squares on their tootle chart. Be sure they are doing what they should be doing. Be careful not to just pick your friends, but look around the class and quickly find someone doing what they should be."

Introduce Tootle Box
"Now this is a tootle box for you to put your tootle charts in when they get filled up. When you fill all of the space up on your card, you can get another one."

Duck, Duck, Tootle
Model Duck, Duck, Tootle. Then, practice with teacher as the tootle prompter. [Provide praise and corrective feedback]

Have teacher continue tootle prompting throughout the day. Provide her with the dated folders, stickers, and Procedural Integrity forms. Explain to the teacher how to complete and check off all items on the checklist and tally tootles daily so that the tootle packet can be picked up daily. Remind teacher to have students tootle throughout the day every day and tell the student how to hand in their tootle charts.

"Before you leave to go home, put them in the slot on the tootle box on Mrs. _____ desk. If you fill your card up before the end of the day, you can get another from the stack next to the tootle box."

Tootling Procedural Script
Training Day Four
(20 minutes)

Practice, practice, practice.
[Provide corrective feedback and praise.]

APPENDIX D

DAILY TOOTLE RECORDING SHEET

DAILY TOOTLE RECORDING SHEET

_____ Number of Tootles for Target Child 1 ( )

_____ Number of Tootles for Target Child 2 ( )

_____ Total Number of Tootles for class

_____ Goal Met (Yes, No)

APPENDIX E

IRB LETTER

Mississippi State University

August 25, 2008

Anitra Shelton-Quinn
18918 Relay Road
Humble, TX 77346

RE: IRB Study #05-197: Increasing Positive Peer Reporting and On-Task Behavior Using an Interdependent Group Contingency Program with Public Posting: Extending Duck Tootle

Dear Ms. Shelton-Quinn:

The above referenced project was reviewed and approved via administrative review on 10/26/2005 in accordance with 45 CFR 46.101(b)(1). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at anytime during the project period, to observe you and the additional researchers on this project.

Please note that the MSU IRB is in the process of seeking accreditation for our human subjects protection program. As a result of these efforts, you will likely notice many changes in the IRB's policies and procedures in the coming months. These changes will be posted online at http://www.orc.msstate.edu/human/aahrpp.php. The first of these changes is the implementation of an approval stamp for consent forms. The approval stamp will assist in ensuring the IRB approved version of the consent form is used in the actual conduct of research.

Please refer to your IRB number (#05-197) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact Christine Williams at cwilliams@research.msstate.edu or call 662-325-5220.

Sincerely,

[For electronic submissions]

Christine Williams
IRB Compliance Administrator

cc: Carlen Henington

Office for Regulatory Compliance
P.O. Box 6223 • 70 Morgan Avenue • Mailstop 9563 • Mississippi State, MS 39762 • (662) 325-3294 • FAX (662) 325-8776

APPENDIX F

CURRICULUM VITA

Curriculum Vita

Anitra Shelton-Quinn, M.S., Ph.D.

Licensed Specialist in School Psychology (LSSP)
Assistant Professor of Arts & Sciences
Director of School Psychology Programs
University of Houston-Victoria
Victoria, TX 77901

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Sugar Land, TX 77479
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EDUCATIONAL INFORMATION

Ph.D. School Psychology	Mississippi State University Mississippi State, MS
Master of Science Educational Psychology	Mississippi State University Mississippi State, MS
Psy.D. Coursework	Forest Institute of Professional Psychology Springfield, MO
Master of Arts Gerontology	University of Louisiana, Monroe Monroe, LA
Bachelor of Science Psychology/ Gerontology Certificate	Mississippi State University Mississippi State, MS
Licensures	Licensed Specialist in School Psychology (LSSP) AA 213 Psychometrist (K-12)

INTERVENTON/CONSULTATION:

Educational & Behavioral Consultation Direct **October 2007-Current**
Founder & CEO
Lead Psychologist

Duties include consultation and trainings of teachers and school staff regarding school-age children. Including completion of Functional Behavioral Assessments (FBA), composing behavior intervention plans (BIP), behavior consultation, planning and implementing classwide behavior management programs, and provision of parent and teacher behavioral consultation regarding children ranging in grades from kindergarten through high school, as well as conducting teacher trainings & in-services.

Goose Creek Consolidated ISD **August 2007-July 2008**
LSSP
Baytown, TX

Duties include completion of Functional Behavioral Assessments (FBA), composing behavior intervention plans (BIP), consulting with PASS teachers regarding children with an Emotional Disturbance, conducting manifestations of determination meetings, planning and implementing classwide behavior management programs, and provision of parent and teacher behavioral consultation regarding children ranging in grades from kindergarten through high school.

Harvest Time Church **August 2006-June 2007**
Director of Women's Ministries
Houston, TX

Duties included administrative responsibilities to supervise volunteers of 12 ministries and maintain operating account for each ministry. Duties also included grant writing, development of community –wide partnerships, development of need-based ministries. Responsibilities also include Life Coaching, leadership development of volunteers, and programming large and small scale ministry events.

Humble ISD **August 2004-August 2006**
LSSP **August 2006-June 2007 (Contract)**
Humble, TX

Duties include completion of Functional Behavioral Assessments (FBA), composing behavior intervention plans (BIP), conducting manifestations of determination meetings, planning and implementing classwide behavior management programs, and provision of parent and teacher behavioral consultation regarding children ranging in grades from kindergarten through high school.

Cypress Fairbanks ISD **August 2003-July 2004**
Doctoral Intern/Psychology

Houston, TX

Duties included conducting FBA's and composing BIP's, as well as, providing parent and teacher consultation regarding children ranging in grades from kindergarten through high school.

Millcreek **February 2003-May 2003**
EBD Internship
Pontotoc, MS

Duties include providing individual and group therapy to elementary, middle and high school age children in a psychiatric residential setting. Responsibilities included, teacher consultation, treatment planning, completion of progress notes, staffing and in-service workshops. Additional responsibilities included case filing, documentation, and reevaluation of cases from start to finish.

Region III Mental Health **January 2002-May 2002**
Consultation Practicum
Ecru, MS

Duties included providing initial intake, assessment, individual, group and family therapy to elementary, middle and high school age children. Responsibilities included teacher consultation, treatment planning, completion of progress notes and parent collaboration / home visits. Additional responsibilities included case filing, documentation, and reevaluation of cases from start to finish.

Mississippi State **September 2001-December 2001**
Project Impact Play Therapy Group
Mississippi State University

Duties include conducting play-based therapy in a small group setting with 4-10 children ages 0-3. Responsibilities consisted of assisting with set up and tear down procedures, sanitation of toys, preparing snack, assisting in toileting, and facilitating play in the following 4 play centers: free play, circle, art and book nook.

Columbus City Schools **January 2001-May 2001**
Columbus, MS

Duties include initial consultation with parent and school official in efforts to resolve academic problems in reading and language, in a second grade white male. Further duties include interviewing the teacher, direct observation, conducting curriculum-based assessments, providing recommendations, modeling paired reading, listening previewing, implementation of peer

West Point City Schools **January 2002-May 2002**
West Point, MS

Duties include initial consultation with parents and school official in efforts to resolve both all subject academic and behavioral problems in a 2nd grade black female diagnosed with ADHD. Further duties include teacher interview, direct observation, conducting curriculum-based assessments, providing recommendations, and implementing tootling to increase time on-task.

West Point City Schools **February 2002-May 2002**
West Point, MS

Duties include initial consultation with parents and school official in efforts to resolve both all subject academic and behavioral problems in a 5th grade black male diagnosed with ADHD. Further duties include teacher interview, direct observation, conducting curriculum-based assessments, providing recommendations, and implementing peer monitoring to increase target child's time on-task.

Houston Public Schools **October 2001-March 2002**
Houston, MS

Duties include teacher consultation, conducting repeated curriculum-based assessments of a 15-year old white male diagnosed with Asperger Syndrome and Bipolar disorder, presenting with academic difficulties in mathematics (multiplication) and behavior problems. Further duties include direct behavior consultation with the teacher, designing and implementing an academic intervention (Folding-In).

Mississippi State University **Aug. 2000-December 2001**
Child Development & Family Studies Center

Duties included teacher consultation regarding learning exercises, toileting, feeding and classroom management with children ages 0-5 years.

ADHD Clinic **Summer 2000**
Emerson Family School
Starkville, MS

Duties included composing a parent-training presentation to inform parents on ADHD, it prevalence, and treatment the educational rights for children with ADHD.

Lowndes County School District **Aug. 2000-December 2000**
Columbus, MS

Duties included Functional Behavioral Assessment of a kindergarten female age 5, referred for behavior problems. Duties included conducting an FBA, providing teacher and parent recommendations, modeling intervention, implementing intervention, and follow-up.

Community Counseling Services **February 1999-May 1999**
Columbus, MS
Child Therapist

Duties included initial intake, and parent interviews, psychological assessment of children (2-16 years of age), referred for behavioral, academic and other school or home based problems. Further duties included providing individual, group, and family therapy, teacher consultation, rendering recommendations, and supervision of integrity of Day Treatment programs.

Mississippi State University **July 1999-December 2000**
Housing & Residence Life **.**
Mississippi State, MS

Duties included supervision of 14 resident assistant and over 500 residents, behavior management (behavioral contracts and, etc.), crisis intervention for college freshman college.

Mississippi State University **August 1994-December 1995**
Office of College & School Relations
Student Recruiter (RoadRunner)

Duties included student recruitment cold calls, university tours and consultation regarding campus services and resources.

The Garden's Assisted Living **August 1998-November 1998**
Springfield, MO

Duties included conducting reality orientation therapy with 2 geriatric groups consisting of individuals diagnosed with Alzheimer's Disease. Individual therapy was also conducted.

Community Counseling Services **July 1996-August 1996**
Columbus, MS

Duties included treatment planning, supportive individual and group therapy, assisting with behavior management for anger, aggression and non-compliance of children ages 6-10 years, suspected of sexual molestation and abuse. Contributed to Treatment Team meetings & staffing

Northeast Louisiana University **January 1997-May 1998**
Student Development &
Campus Programs

Duties included supervision of over 60 students in campus programs (Union Board, Residence Hall Association), program planning for intraorgainzational Ropes courses and retreats.

Hopeway Geropsychiatric Hospital **January 1996-May 1996**
Louisville, MS

Duties included providing individual and group and individual therapy to elderly inpatients in a short-term acute unit, under the supervision of a counseling psychologist. Administration of Mental Status exams was also a requirement.

ASSESSMENT:

Educational & Behavioral Consultation Direct **October 2007-Current**
Founder & CEO
Lead Psychologist/LSSP

Duties include conducting independent psychological evaluations for special education eligibility with school aged children in surrounding school districts.

Goose Creek Consolidated ISD **August 2007-June 2008**
LSSP
Baytown, TX

Duties include conducting Psychological, AD/HD, and Autism/PDD evaluations with children in pre-kindergarten through high school, as well as, providing individual and group therapy, school consultation, parent consultation, in-service trainings, and crisis intervention to children and adolescents within the school setting.

Humble Independent School District **August 2004-July 2007**
20200 Eastway Village Drive
P.O. Box 2000
Humble, TX 77347-2000

Duties include conducting Psychological, AD/HD, and Autism/PDD evaluations with children in pre-kindergarten through high school, as well as, providing individual and group therapy, school consultation, parent consultation, in-service trainings, and crisis intervention to children and adolescents within the school setting.

Cypress Fairbanks ISD **August 2003-July 2004**
Doctoral Intern/Psychology

Houston, TX

Duties include conducting psychological and behavioral evaluations with children in pre-kindergarten through high school, providing individual therapy, family therapy, and group therapy, school consultation, in-service trainings, and crisis intervention.

Aberdeen School District **October 2002-July 2003**
Psychometrist/Diagnostician
Aberdeen, MS

Duties included completing initial referrals, developmental delay and special education revaluations, conducting gifted assessments and report writing for the district. Responsibilities also included conducting IEP meetings, consulting with teachers regarding behavior difficulties, and implementing behavioral interventions.

Columbus Public School District **March 2002-May 2002**
Contract Testing
Columbus, MS

Duties included administration and scoring of the WRAT, WISC, & WIAT of children 2nd-9th grade. Responsibilities also included writing reports and conveying results of testing to parents and school personnel.

Mississippi State **Aug. 2000-December 2001**
Early Intervention Team
Mississippi State, MS

Duties included conducting multidisciplinary play-based assessments of infants and toddlers ages (0-3). Responsibilities consist of obtaining referred cases from the district health department, creating files for those cases, preparing the protocol, student– observer orientation, assessment, parent consultation with team, collating and writing the final report and returning it to the district office. Further responsibilities include acting as play-facilitator, scoring protocols, orienting student observers, and report writing.

Assessment Practicum **January 2001-May 2001**
West Point School District
West Point, MS

Duties included initiating and completing the referral to placement process, conducting Headstart assessments (16), functional behavioral assessments (1), curriculum-based-assessments (10), teacher consultation, gifted testing (5) and report writing (22). Instruments used included the Dial-R (16), the Denver (1), the ELAP (2), the BDI (1), the Vineland (2), the WISC-III (1), the Woodcock Johnson (2) , the WRAT (2), and the Stanford-Binet (2).

Oktibbeha County Health Fair **July 2001**
Starkville, MS **.**

Duties included administering and scoring school , the Dial-R to determine school readiness in pre-school children.

Oktibbeha County Health Fair (2000) **July 2000**
School Readiness Screening
Starkville, MS

Duties included scoring and administering the Dial-R to determine school readiness screening in children ages 3-5.

Oktibbeha County School District **August 2000**
Project STAR Testing
Starkville, MS

Duties included the testing of children with disabilities using the WRAT (7) and the PPVT (7) for a study investigating the appropriateness of their usage with this population.

Academic Assessment Project **Summer 2000**
Emerson Family School
Starkville, MS

Assessed school children in reading and math using curriculum-based assessments, to identify specific problem areas. Further responsibilities included planning and implementing an intervention (Cover, Copy, & Compare) in mathematics to teach carrying in multiplying 2 digit by 2 digit probes.

TEACHING:

Assistant Professor (Tenure Track) **July 2008-Current**
Director of School Psychology
University of Houston-Victoria

Duties include online and face-to-face teaching consisting of composing, syllabus, preparing and rendering lectures. Non-teaching duties include academic advising to prospective and current students; and conducting empirical research and providing university service including advising Psi Chi.

Introductory Psychology **August 2005-December 2005**
NHMCCD
Kingwood College

Duties include composing a class syllabus, preparing and rendering lectures, composing test, quizzes and in-class assignments, scoring material, and providing progress feedback to students.

Human Growth and Development **August 2001-May 2003**
East Mississippi Community College
Mayhew, MS

Duties include composing a class syllabus, preparing and rendering lectures, composing test, quizzes and in-class assignments, scoring material, providing progress feedback to students and maintaining the course website.

Mississippi State University **Summer 1995**
Mississippi State, MS

Duties included coordinating lecture material, lecturing, assisting in composing quizzes/test, preparing handouts, scoring test and in-class exercises for 30 undergraduate students enrolled in general Psychology.

RESEARCH:

University of Houston-Victoria **July 2008-Current**
Victoria, TX

As primary investigator, coordinated and conducted a project designed to examine the effectiveness of a community-based residential camp on improving self-esteem of at-risk youth of incarcerated parents, using both archival and newly obtained data.

University of Houston-Victoria **Current**
Victoria, TX **Dr. Perz (PI)**

Currently serving as a co-investigator on a research team investigating the presence of Autism in coastal communities, relative to exposure to mercury, with the responsibility of developing literary background, assisting with creating a pilot questionnaire, and conducting field-based assessments.

Mississippi State University **January 2006-July 2006**
Mississippi State, MS

Coordinated and conducted grant funded dissertation research project on "Tootling" a classwide intervention project that combines public posting, interdependent group contingencies, and goal setting to increase positive peer reporting in elementary school children.

Mississippi State University **January2002-May 2002**
Mississippi State, MS

Duties included examining current literature, direct observation and data collection to determine the effect of a peer-monitored group contingency (tootling) on prosocial behavior and off task behavior. Treatment integrity data was also obtained.

Mississippi State University **April 2001**
Mississippi State, MS

Assisted in investigating the relationship between language and cognitive development and social behavior in young children. Duties included conducting direct observation of social behaviors of preschool age children in a day care setting, using 15 second partial interval recording.

Mississippi State University **November 2001-January 2002**
Mississippi State, Mississippi
Investigated the effect of repeated curriculum based assessments and folding-in to improve multiplication performance in a 15-year old male diagnosed with Asperger Syndrome and Bipolar Disorder. Duties included composing math probes, conducting Curriculum Based Assessment's, implementation of folding in and data collection during both treatment and intervention phase of the study.
Mississippi State University **April 2000-June 2000**
Mississippi State, MS

Duties included direct observation and data collection to establish inter-rater reliability in a study examining aggression and pro-social behaviors exhibited in a preschool classroom.

Mississippi State University **September 2000**
Mississippi State, MS

Investigated the impact of peer tutoring on academic performance in mathematics and problem behaviors in a second grade classroom. Duties included conducting curriculum-based assessments to determine specific problem areas in math. Class-wide peer tutoring was implemented. Academic performance improved and the prevalence of problem behaviors decreased.

Mississippi State University **September 1999-January 2000**
Mississippi State, MS

Investigated the effectiveness of Differential reinforcement on tantruming in a 5 year old with Turner Syndrome. Duties included conducting a Functional Behavioral Assessment to determine the problem behavior and the function of the problem behavior in a 5 year old child diagnosed with Turner Syndrome in a school setting. Further duties included determining an intervention to decrease the problem behavior, tantruming. The intervention of choice was differential reinforcement of other behavior (DRO). The

purpose of this research was to investigate the effectiveness of DRO in decreasing tantruming behavior in a 5 year old with Turner Syndrome.

Forest Institute of Professional Psychology
Springfield, MO **July 1998– January 1999**

Duties included identifying the needs of older adults and coordinating programs as needed, strategic planning of a retirement village based on a continuum of care model.

PROFESSIONAL PRESENTATIONS:

Shelton-Quinn, A. , Bowers, V., Jones, C., Carpenter, A., Henington, C., Wyatt, R. (May 2008). Expanding Duck, Duck Tootle as a Pre-Referral Intervention Package to Increase On-Task Behavior. Paper to be presented at the Association of Behavioral Analysis, International Convention, Chicago, Il.

Shelton-Quinn, A. (2006). Mental Health Services in a Faith Based Institution. presented at the National Alliance of Mental Illness (NAMI) workshop, Houston, TX.

Shelton, A., Bowers, V., Jones, C., & Benny, N. (March 2004). An eye-opener for school psychologists: Working with culturally diverse populations. Workshop presented at the National Association of School Psychologists national conference, Dallas, TX.

Shelton, A. & Bowers, V. (February 2003). Increasing peer reporting of on-task Behavior via group reinforcement and public posting. Paper presented at Mississippi Association of Psychology in the Schools (MAPS) 2003 Jackson, MS.

Shelton, A., Bowers, V., & Looby, J. (October, 2002). An eye-opener for school psychologists: Working with culturally diverse populations. Workshop presented at the Mid-South Association of Psychology in the Schools conference, Chattanooga , TN.

Shelton, A., Bowers, V., & Devlin, S. (February, 2002). Using repeated curriculum-based assessment coupled with a folding in technique to increase fluency and accuracy of multiplication facts in an 8th grade student diagnosed with Asperger Syndrome. Paper presented at Mississippi Association of Psychology in the Schools (MAPS) 2002, Jackson, MS.

Dufrene, B., Fascio, S., Freeland, J., Meeks, C., **Shelton, A.,** Smith, T., Weever, Adam, & Watson, T. S. (February, 2001). The utility of curriculum-based measurement. Two 1 ½ workshops presented at Mississippi Association of Psychology in the Schools (MAPS) 2001, Jackson, MS

Fascio, S. T. , & **Shelton, A.** (April, 2001). Regular and special education teachers perceptions of inclusive environments. Poster presented at National Association of School Psychologists (NASP) 2001, Washington, Dc.

Shelton, A., & Fascio, S. Givhan, S. (April, 2001). Treating behavior problems of a kindergartener diagnosed with Turner Syndrome. Paper presented at the National Association of School Psychologists (NASP) 2001, Washington, Dc.

Meeks, C., Henington, C., Butler, T., & **Shelton, A**. (April, 2001). The relationship between language and cognitive development and social behavior in young children. Poster presented at National Association of School Psychologists (NASP) 2001, Washington, DC

Shelton, A., & Givhan, S. (March, 2000). Treating behavior problems of a kindergartener diagnosed with Turner Syndrome. Poster presented at the Mississippi Association of Psychology in the Schools (MAPS) conference, Jackson, MS.

Shelton, A., & Bowman, J. (November, 1998). An exploratory analysis of programs and policies affecting female and male elder inmates in six southern states. Paper presented at 51st Annual Meeting of the Gerontological Society of America, Philadelphia, PA.

Shelton, A., & Kirby, D. (April 1998). Caregiver personality in relation to the caregiving process. Paper presented at the Southern Gerontological Association meeting, Chattanooga, TN.

Shelton, A., & Shelton, P. (March 1998). The elderly inmate in 2000: A descriptive study of selected southern states. Paper presented at the AGHD/HBCU conference Jackson, MS.

Shelton, A. (October, 1997),. The elderly inmate in 2000: A descriptive study of selected southern states. Paper presented at the Mid-South Sociological conference, Huntsville, AL.

Adams-Price, C., & **Shelton, A**. (April 1996). Acceptable dependency and the very old. Paper presented at the Southern Gerontological Society of America, Washington, DC.

Adams-Price, C., Edwards, J. , & **Shelton, A.** (April, 1997). Attitudes toward dependent and independent behaviors in the young-old and old-old. Poster presented at the Southeastern Psychological Association, Atlanta, Ga.

Adams-Price, C. Edwards, J., & **Shelton, A.** (November,1996). Attitudes toward dependent and independent behaviors in old age. Poster presented at the Gerontological Society of America, Washington, D.C.

PUBLICATIONS:

Shelton, A. (2004). Corporal punishment. In C. H. Skinner & T. S. Watson (Eds.), Comprehensive encyclopedia of school psychology.

PROFESSIONAL SERVICE:

Psi Chi University of Houston-Victori**a** (Co-Advisor)
UHV Psychology Colloquium Series (Coordinator)
Camp Elizabeth- Elizabeth Haven Non-Profit
Mental Health Action Team-Voluntary Coordinator
Mental Health America (Houston)-Voluntary Partners in Healing Presenter
School Psychology Faculty Search Committee

PROFESSIONAL AFFILIATIONS:

Texas Association of School Psychologists
National Association of School Psychologists (NASP)
NASP Trainers of School Psychology
American Psychological Association
Behavior School Psychology Interest Group (BSPIG)

REFERENCES:

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