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# Supporting teachers and children during in-class transitions: The power of prevention

Sarah M. Mele

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Supporting Teachers and Children During In-Class Transitions: The Power of Prevention

by

Sarah M. Mele

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts in Applied Behavior Analysis  
College of Graduate School  
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start

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## Supporting Teachers and Children During In-Class Transitions: The Power of Prevention

Sarah M. Mele

### ABSTRACT

In early childhood classrooms, transitions are often targeted as times of the day during which teachers encounter problems with deficiencies in child engagement, as well as frequent occurrences of challenging behavior. Studies to date on improving child behavior during in-class transitions have focused on providing supports for individual children, as well as on reducing transition duration. The present study evaluated the effects of systematic transition strategies, as applied to three Head Start preschool classrooms during targeted in-class transitions. Strategies encompassed an accumulation of antecedent and consequent manipulations and were selected on the basis of environmental fit with individual classroom environments. Participants included three Head Start preschool teachers and their respective students, all three to five years of age. The dependent measures examined in the study included mean percent classroom engagement and percent occurrence of challenging behavior, measured across all phases of the study (i.e., *baseline*, *coaching* and *independent implementation*). Results, evaluated in a multiple baseline probe across classrooms, indicated that with implementation of systematic transition strategies, mean percentages of classroom engagement within intervention phases (i.e., *coaching* and *independent implementation*) were higher and relatively more stable than those observed in *baseline*, within and across all three

participating classrooms. Furthermore, mean percent occurrences of challenging behavior were lower and relatively more stable within phases of intervention (i.e., *coaching* and *independent implementation*) than those observed in *baseline*, within and across all three participating classrooms. Data on the accuracy with which teachers implemented selected strategies (i.e., treatment integrity) were also documented and presented in the context of results obtained. Implications for future research are discussed, in light of the limitations and findings of the current investigation.

## CHAPTER 1. INTRODUCTION & LITERATURE REVIEW

In the analysis of human behavior, researchers over the last several years have given particular attention to behaviors perceived to be “socially important” (Baer, Wolf, & Risley, 1968). Among this populace of behaviors are those identifying children, particularly those referred to as displaying or experiencing “challenging behavior”. As defined by Smith and Fox (2003), “challenging behavior” constitutes “any repeated pattern of behavior...that interferes with or is at risk of interfering with optimal learning or engagement in prosocial interactions with peers and adults” (page 7).

The purpose of the following chapter is to provide a review of the literature on the prevalence of challenging behavior in young children, as well as a rationale for providing early intervention for children in whom patterns of challenging behavior are unremitting. Following this discussion is that related to the growing interest in the development of multi-tiered intervention models, as relevant to research conducted with individual and multiple children. Implications for supporting teachers and other behavior change agents are also discussed in light of barriers common to implementation.

### Prevalence of Challenging Behavior in Young Children

Reviews of the prevalence of challenging behavior in young children have come to a general consensus that approximately 7-25% of preschool aged children (i.e., ages three to five years) have mild to moderate behavior problems (Barnett et al., 2006). Research has demonstrated that children exposed to various environmental correlates

may be particularly vulnerable to expressions of challenging behavior, to include those living in poverty, children exposed to domestic violence and parental substance abuse, and those neglected by caregivers (Conroy & Brown, 2004). A review by Qi & Kaiser (2003) revealed that 30% of children of low-income families demonstrated common characteristics of challenging behavior, as compared to three to six percent of young children in the general population. In addition to considering the environmental correlates associated with a higher prevalence of challenging behavior, longitudinal studies have revealed that developmentally disabled children may exhibit a rate three times that of typically developing children (Hemmeter, Ostrosky, & Fox, 2006).

Even given the implications for children particularly vulnerable to demonstrating these patterns of behavior, research has revealed that as little as 10% of these children will receive the necessary supports to address challenging behavior (Kazdin & Kendall, 1998). Without early identification and intervention for these children, the continued persistence of these topographies is highly predictive. One review indicated that, of preschoolers in whom patterns of challenging behavior were identified, as many as 50% continued on these trajectories, up to two years following initial identification (e.g., Webster-Stratton, 1997). In a review by Campbell and Ewing (1990), authors reported that 67% of the participating preschoolers who had demonstrated behavioral characteristics of hyperactivity and excessive physical aggression at the age of three, continued to demonstrate these pervasive behavioral problems at the age of nine. Other studies have supported the persistence of problem behavior in preschool children beyond that of three years, up to seven years following initial identification (Campbell & Ewing, 1990). Furthermore, research has revealed that the extent to which an intervention is

successful is highly correlated with early identification, posing serious implications for the potential failure of supports applied later in life (Dodge, 1993).

*Why Intervene?: Avoiding the Detrimental Trajectories*

The implications of allowing children to continue on these trajectories are commonly associated with the emergence of more severe patterns of behavior, beyond the stability and persistence of those behaviors initially identified (Campbell & Ewing, 1990; Webster-Stratton, 1997). Among these patterns are those related to delays in social-emotional and cognitive development, as well as to overall academic success (Powell, Dunlap, & Fox, 2006). As per social-emotional development, children who continue on these detrimental trajectories often demonstrate deficiencies in the ability to establish and maintain positive interactions with peers and adults, manage personal and interpersonal conflict, regulate emotions, and accurately interpret the emotions of others (Conroy & Brown, 2004; Joseph & Strain, 2003). Moreover, many of these children, who do not receive intervention, receive later diagnoses of Emotional/Behavioral Disorders (E/BD) and Emotional Disturbance (ED) (Barnett et al., 2006; Campbell & Ewing, 1990). The temperamental characteristics common to children who continue to decline in behavioral and social skills include hyperactivity, social alienation, low adaptability, and abnormally high expressions of irritability and reactivity (Stormont, 2002). Persistence of these social skills deficits often impede later academic success, presenting implications for the adequacy with which these children are prepared for secondary schooling, as well as more pronounced threats of academic failure in later years (Powell et al., 2006).

In the last decade, there has been a growing interest among researchers in the use of the multi-tiered approach to address the intervention needs of children at risk for and

with disabilities (Fuchs & Fuchs, 1998). These approaches use the public health models of prevention and treatment. As with to the public health model, promotional supports at the *universal* level are those designed to promote the healthy development or behavior of all individuals of a particular population, *secondary* strategies are those implemented for purposes of providing preventative measures of support for those at-risk, and *tertiary* interventions are available for individuals who have been diagnosed with a particular disorder, often in need of supports beyond those provided at the universal and secondary levels (Commission on Chronic Illness, 1957). School-wide models of this three-tiered approach , such as school-wide positive behavior support, have been identified in the literature as successful in reducing instances of overall problem behavior, as well as in producing subsequent increases in time devoted to academics (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Sugai et al., 2000).

#### Supporting Social-Emotional Development: The Teaching Pyramid

With the application of multi-tiered models to the school setting, those developed for young children are often conducive to supporting social-emotional competence, as well as to serving as preventative measures of support for children at-risk for challenging behavior. The rationale for this is highly associated with the detrimental trajectories previously discussed, in light of the impact of poor social-emotional development in early childhood on later academic and social success.

One such model is that developed by Fox, Dunlap, Hemmeter, Joseph, and Strain (2003), known as *The Teaching Pyramid*. Similar in form to other models of intervention, *The Teaching Pyramid* follows a multi-tiered approach, with particular attention to the application of universal strategies to promote the social-emotional competence of all

children, the use of preventative supports for children identified as at-risk for challenging behavior, and individualized interventions for those children identified as exhibiting patterns of challenging behavior (Fox et al., 2003). *The Teaching Pyramid* is therefore a hierarchical model founded on practices of promotion, prevention, and intervention (Hemmeter, Ostrosky, & Fox, 2006).

*Universal Level: Positive Relationships and Supportive Environments*

Conducive to the provision of supports at the universal level, the first component of *The Teaching Pyramid* comprises the foundational aspect of fostering positive social relationships between children and their peers, teachers, family members, and other individuals with whom they frequently interact (Fox et al., 2003). Positive relationships are those that emphasize the reinforcement of children's initiations of interactive play and conversation, as well as provision of praise for appropriate behavior (Bodrova & Leong, 1998; Kontos, 1999). The rationale for supporting the development of positive relationships is such that the environments in which these interactions are established will likely reinforce a child's attempts to initiate and respond to social interactions (Powell, Dunlap, & Fox, 2006). As such, the use of challenging behavior to express a need or desire is often irrelevant in the context of supportive environments. Conducive to the establishment of these supportive environments at the universal level is a consideration for family-professional collaboration, such that familial involvement in a child's social-emotional development will aid in the promotion of these supportive contexts, across a generalized sample of environments (Cox, 2005; Hemmeter et al., 2006).

Research in this area has demonstrated a strong correlation between positive teacher-child relationships and the child's subsequent social-emotional competence and

development of prosocial patterns of behavior (Birch & Ladd, 1998; Cugmas, 2003; Howes, 2000; Mashburn, 2006; Pianta, Steinberg, & Rollins, 1995). Furthermore, evidence exists in support of a correlation between the development of positive teacher-child relationships and a child's positive association with peers and other adults (Howes & Hamilton, 1993; Howes & Smith, 1995).

Conducive to supporting a child's engagement in these positive social relationships is the structuring of various physical and interactive components of the environment (Fox et al., 2003; Sainato, 1990). Physical arrangements often incorporate an emphasis on open spaces and appropriate partitioning of areas to delineate different activity centers (Twardosz, Cataldo, & Risley, 1974), clearly defined areas for physical transitions from one area of the room to another, and the availability of developmentally appropriate materials in the context of classroom activities (Bailey & Wolery, 1984; Doke & Risley, 1972; Hart, 1978; Sainato, 1990). In addition, teachers may post visual schedules of activities to increase the predictability of daily routines, as well as rules outlining expectations as to appropriate behaviors required during these routines (Fox et al., 2003; Hemmeter & Fox, in press; Hemmeter et al., 2006; Neilsen, Olive, Donovan, & McEvoy, 1999). At the universal practice level, teachers are also encouraged to create classroom schedules that have a balance of small and large-group activities, to include the structuring of well-planned transitions (Hemmeter et al., 2006; Sainato, 1990). Relevant to planning activities is the necessity of delineating responsibility among classroom staff during transitions (LeLaurin & Risley, 1972), as well as ensuring that time between activities is minimal so as to reduce wait time (Doke & Risley, 1972). Studies have revealed that classroom environments arranged in such a manner often promote child

engagement in academically and socially-appropriate behavior, with concomitant reductions in individual and classroom-wide problem behavior (e.g., DeKlyen & Odom, 1989; Hagekull & Bohlin, 1995; Holloway & Reichart-Erikson, 1988; Kontos & Wilcox-Herzog, 1997; Peisner-Feinberg et al., 2001; Zaslow et al., 2006).

*Secondary Level: Supporting Social-Emotional Competence*

While universal practices are designed to promote the appropriate behavior and social skills development of all children in the classroom, secondary interventions may be necessary as a preventative approach for children identified as at-risk for challenging behavior (Fox et al., 2003; Hemmeter et al., 2006). In a review of eight social emotional curricula designed for use at the secondary intervention level, Joseph and Strain (2003) identified two as highly evidence-based and therefore including measures of treatment fidelity, maintenance, social validity and acceptability measures, and evidence for generalization across a diversity of individuals. These include the *Incredible Years Child Training Program (Dinosaur School)* (Webster-Stratton, 1990) and *First Step to Success* (Walker et al., 1998). The *Incredible Years* program teaches children to problem solve through the use of video modeling, role play rehearsals, interactive activities, and the supplemental use of puppets (Webster-Stratton, 1990). This program has been successful in reducing incidents of problem behavior at home and school, increasing children's use of problem-solving techniques to manage various emotions, and reinforcing children's ability to initiate and maintain positive interpersonal relationships with others (Webster-Stratton, 1990). The *First Steps to Success* program is designed for use with individual children and has been successful in reinforcing the acquisition of adaptive behavior, while reducing occurrences of socially-maladaptive behavior in both the home and school

setting (Walker et al., 1998).

Creators of *The Teaching Pyramid* assert that the extent to which these interventions are effective often depend upon the inclusion of preliminary modeling of appropriate behavior, role-plays with children in the naturalistic environment, use of prompts to encourage the use of skills, and reinforcement provided contingent upon appropriate use of these skills (Hemmeter & Fox, in press; Joseph & Strain, 2003).

#### *Tertiary Level: Individualized Interventions*

As previously reviewed, the first two levels (i.e., universal practices and secondary interventions) of *The Teaching Pyramid* are designed to promote the social-emotional development of all children and to prevent the development of challenging behavior of children at risk. However, prevalence studies have indicated that a small percentage of children (i.e., 5-30%) will have persistent challenging behavior that requires more intensive and individualized interventions (Hemmeter, Ostrosky, & Fox, 2006). For these children, *The Teaching Pyramid* includes the necessity of individualized supports at the tertiary level, often involving procedures conducive to a process known as Positive Behavior Support (PBS).

PBS, mandated by the 1997 IDEA amendments for inclusion in a student's Individualized Education Programs (IEP), is a process involving the initial identification of stimuli associated with occurrences of problem behavior, the subsequent determination of the function of behavior, and the development of interventions designed to teach functionally-equivalent replacement behaviors (Fox, Dunlap, & Cushing, 2002). Interventions common to the PBS process therefore include those designed to differentially reinforce the acquisition of appropriate replacement behaviors, while

simultaneously placing inappropriate behavior on extinction (Dunlap, 2006). The extent to which these interventions are effective is often dependent upon the collaborative involvement of individuals in the child's life, as well as on the availability of active supports for the implementation of interventions in a variety of naturalistic environments (Hemmeter & Fox, in press).

Research in this area has revealed successful reductions in problem behavior through such strategies as embedding preference and choice into academic and leisure activities (e.g., Blair, Umbreit, & Bos, 1999; Dunlap et al., 1994; Lerman, Addison, & Kodak, 2006; Newton, Ard, & Horner, 1993; Parsons & Reid, 1990; Waldron-Soler, Martella, Marchand-Martella, & Ebey, 2000), as well as modifying the length and difficulty of academic tasks (e.g., Blair, Umbreit, & Eck, 2000; Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991; Umbreit, 1995; Umbreit, 1996). Furthermore, successful acquisition of appropriate replacement behavior has been demonstrated through the implementation of such procedures as Functional Communication Training (FCT) (e.g., Durand & Carr, 1991; Durand, 1999; Horner & Day, 1991; Reeve & Carr, 2000) and self-instructional procedures designed to reinforce independence in academic and social activities (e.g., Reeve & Carr, 2000; Sainato, Strain, Lefevbre, & Rapp, 1990; Strain, Kohler, Storey, & Danko, 1994; Wert & Neisworth, 2003).

Even given the systematic utility of *The Teaching Pyramid* as a model of intervention for young children with challenging behavior, there is little empirical evidence to support the application of this model to naturalistic classrooms, particularly for young children between the ages of three and five years. For purposes of applying strategies to promote healthy social-emotional development, as well as to prevent the

occurrence of challenging behavior, more research is needed in the application of this model to early childhood education settings. Furthermore, while interventions at the secondary and tertiary levels are paramount to the academic and social-emotional development of children, there exists a particularly strong rationale for applying interventions at the universal level.

For young children, the provision of supports at the universal level, particular those pertinent to environmental and structural arrangements, fosters an environment in which the utility of challenging behavior to communicate is no longer relevant, and the appropriate behavior of all children is supported (Fox et al., 2003; Hemmeter et al., 2006; Kern & Clemens, 2007). As such, supports at this level represent a proactive approach to the promotion of social skills, prevention of problem behavior, and the acquisition and reinforcement of appropriate engagement. The rationale for supporting the engagement of children in the classroom is such that it represents an important dimension of appropriate behavior, functioning both to replace the relevancy and efficiency of problem behavior in the classroom and to reinforce progress toward academic and social objectives (McWilliam et al., 1985). Though the topography of engagement has encompassed several dimensions throughout the early childhood literature, it has been generally defined as comparable to “the amount of time children spend interacting with the environment in a manner that is developmentally appropriate” (McWilliam et al., 1985). As a behavior that is necessarily incompatible with challenging behavior, engagement has been recognized as a functionally-appropriate replacement behavior.

Perhaps foundational to providing universal supports is a consideration for what authors have referred to as “setting events”, described by Kantor (1959) as those

variables that affect the extent to which various environmental stimuli will successfully reinforce or punish behavior. In preschool classrooms, efforts to support children are largely dependent upon one setting event in particular: the predictability of routines (Nordquist & Twardosz, 1990). Of the literature to date involving overall classroom predictability, research has suggested that efforts to support young children often involve interventions designed to reinforce acquisition of “independent mastery skills” (Sainato, 1990). These skills are often comprised of those conducive to making transitions, as well as engagement in other activities requiring active participation, independent of teacher assistance. The focus of the current discussion is on that of providing supports for children during transitional activities.

#### Supporting Children During Transitions: Issues & Interventions

An early estimate postulated that as much as 20 to 30% of a child’s daily classroom activities are spent in transition from one activity or location to another (Berk, 1976). For purposes of the current discussion, transitions have been defined in the literature as “teacher-initiated directive(s) to students to end one activity and to start another” (Arlin, 1979). Research has demonstrated that the period of time between activities common to transitions often serve as setting events for problem behavior (Paine, Radicchi, Rossellini, Deutchman & Darch, 1983). Furthermore, occurrences of problem behavior during transitions are often associated with such issues as unpredictability and lack of clarity as to expectations regarding appropriate behavior (Buck, 1999). The successful support of children during transitions is often dependent upon teacher behaviors, particularly those associated with giving children the information

necessary to understand and predict the expectations of current and upcoming routines and activities (Buck, 1999; Sainato, 1990).

While general recommendations often include providing environmental supports that clearly delineate rules and expectations, research suggests that the nature of these supports are often dependent upon the context of the transition itself (Buck, 1999). These include transitions requiring children to end an activity, those involving physical movement from one area of the room to another, and transitions requiring children to begin a new activity (Buck, 1999). Given these implications, following is a brief review of the literature concerning interventions designed to support children during transitions, as is pertinent to universal preventive strategies.

#### *The Use of Verbal and Auditory Cues*

Research has suggested that the occurrence of problem behaviors in the context of demands to end an activity and begin the next are often associated with the absence of supplemental directives to cue upcoming transitions, whether auditory or visual in nature. These cues are sometimes referred to as “safety signals”, defined as “any external stimulus that correlates with the end (or beginning) of an activity” (Reichle, York, & Sigafoos, 1991). The function of these signals is therefore to delineate the end of an activity and approaching transition, such that doing so increases the predictability of and preparation for the upcoming transition. Early studies evaluating the use of these signals to prompt transitions have produced mixed results, particularly in comparison to other procedures (e.g., Goetz, Ayala, Hatfield, Marshall, & Etzel, 1983; Sainato, Strain, Lefebvre, & Rapp, 1987; Wurtele & Drabman, 1984).

A study by Goetz and colleagues (1983) demonstrated the conditioned efficacy of

an auditory stimulus, paired with teacher praise, to signal transitions for 14 preschool children. Results, evaluated via an alternating treatments design, indicated that with presentation of the auditory stimulus, all 14 children demonstrated increases in active engagement during transitions, thereby functioning to reduce the amount of time spent in transitions. Dependent engagement measures were therefore correlated with time spent during transitions. Improvements were maintained even after removal of teacher praise, demonstrating the conditioned efficacy of the stimulus to signal transitions, as well as to reinforce appropriate child engagement during transitions, with subsequent reductions in problem behavior.

Wurtele and Drabman (1984) demonstrated similar effects in a study with a class of 18 typically developing kindergarten children, identified as spending excessive amounts of time in transition between clean-up from morning free play and initiation of the next, large-group activity. In this study, children were required to clean up their areas prior to the sound of a buzzer. The primary dependent measure was time spent during clean-up, calculated as a latency measure (i.e., time from an initial prompt to “clean-up” to the end of clean-up). Results, evaluated in a reversal design within which the buzzer was applied and removed during respective periods, demonstrated reductions of time spent in clean-up relative to baseline measures, contingent upon application of the buzzer. Results generalized to conditions in which the teacher was not present and maintained for a period of one year.

While these earlier studies (Goetz et al., 1983; Wurtele & Drabman, 1984) provided preliminary support for the efficacy of auditory stimuli to signal and reduce time spent in transitions, child engagement during these activities was not operationally

defined in either study and was only assumed to be associated with durational measures. As such, these studies are limited in provision of evidence to support a functional relationship between the use of stimuli to increase the efficiency of transitions and do not provide data on how these strategies may affect appropriate child engagement.

In a more recent study by Ferguson, Ashbaugh, and O'Reilly (2004), authors evaluated the effects of a multicomponent intervention package on transition times during two morning and two afternoon transitions. Participants included 14 males in a self-contained kindergarten classroom, ranging in age from five to six years. The two components of intervention, evaluated in a multiple baseline across transitions design, included a *prompt training* procedure and a *prompt plus reinforcement* procedure. During the *prompt training* procedure, students were taught to associate the sound of a bell with prompts to transition, encompassing instructions to stop at the sound of the bell and contingent reinforcement for those students who demonstrated appropriate "stopping" behavior. During the *prompt plus reinforcement* procedure, the sound of the bell signaled prompts to transition, and compliance to the prompt during actual transitions was paired with a contingent edible reinforcer. Dependent child measures included duration of mean transition time, calculated via direct observations during each of the four targeted transitions.

Results revealed that mean time to transition decreased across all four transition activities, providing some evidence for the generalization of these procedures to a range of activities. Though participants were initially described by teachers as exhibiting various externalizing behavior problems (e.g., aggression, elopement, destruction, noncompliance, etc.) observers did not measure dimensions of these behaviors, and

therefore associations between reductions in transition time and problem behavior are limited to anecdotal evidence, applicable only to mean transition times rather than more stringent assessments of child behavior.

### *The Use of Music, Peer Buddies, & Self-Monitoring*

Among strategies designed to support young children during transitions requiring physical movement from one location to another are those involving the use of music as applied to entire classrooms (e.g., Register & Humpal, 2007), as well as the use of peer buddies and self-monitoring strategies for those students requiring more individualized interventions (e.g., Connell, Carta, & Baer, 1993; Sainato, Strain, Lefebvre, and Rapp, 1987).

Register & Humpal (2007) presented a review of three case studies on the efficacy of using music to decrease transition time and minimize the amount of prompts necessary to initiate physical transitions, as well as to increase child engagement in behaviors appropriate to teacher expectations. The three case studies involved conducting direct observations in an inclusive toddler classroom, a kindergarten class for students of low-income families, and an inclusive pre-kindergarten class for at-risk four-year olds. Transitions in each of the three classrooms encompassed cleanup procedures prior to beginning music therapy sessions, as well as putting instruments away after therapy sessions. In baseline, directives to transition were given without the accompaniment of music and included teacher-directed assistance during the actual transitions. Intervention procedures involved the use of songs as prompts to transition to the carpet for therapy sessions, as well as for initiating cleanup procedures after sessions. Latency measures were taken and began with the therapist's initial verbal directive to transition and ended

with the last child's completion of the task. Frequency measures were also scored, as per the number of prompts given for purposes of redirecting students to the appropriate behavior.

Results, evaluated in reversal designs, indicated that with the contingent application of songs to transitional activities, time between initial prompts to cleanup and the last child's completion of the task decreased substantially relative to baseline measures. Furthermore, the frequency of prompts and redirections to engagement in expected behaviors were substantially reduced with the addition of music. Results were consistent across all three classrooms. According to anecdotal information provided by the authors (Register & Humpal, 2007), teachers reported continued use of songs during transitions subsequent to the close of the study, having witnessed greater reductions in time spent during transitions, throughout the remainder of the school year. These case studies therefore provide preliminary evidence in support of the efficacy of music to reduce time spent in transitions, as well as of minimizing the amount of prompts necessary to engage children in behaviors associated with making appropriate transitions. Though results were interpreted in such a way as to suggest an association between reduced transition time and concomitant increases in appropriate behavior, "appropriate behavior" during transitions (i.e., engagement) was not operationally defined. Results therefore provide only implications for evidence of a relationship between active, appropriate engagement in transitional activities and reduced transition times with the application of music. Furthermore, anecdotal evidence revealed that, while the majority of students responded to musical prompts to transition, a select few experienced continued difficulty. The following studies exemplify interventions for children otherwise

unresponsive to procedures applied to whole classrooms.

In a study by Sainato, Strain, Lefebvre, and Rapp (1987), authors employed an alternating treatments design to compare the effects of using an antecedent prompt to signal transitions, to that of a peer-mediated buddy system. Participants included three preschool males (i.e., ages three to four years), all diagnosed as “severely autistic” and enrolled in an integrated preschool classroom. All participants were identified by their teacher as having demonstrated particularly problematic behavior during three targeted in-class transitions. During the *peer-mediated* condition, the teacher assigned two normally-developing classmates to each of the three participants and modeled appropriate transition behaviors. She then instructed the peer buddies to hold hands with the assigned participant to assist during transitions. During the *antecedent prompt* condition, teachers directed participants to independently transition to another area and, once there, instructed the students to ring a bell.

Direct observations were conducted via two independent observers, and target behaviors were measured during five-second continuous intervals. The primary dependent measure of child behavior was the rate of movement during transitions, referred to as *child performance*, and yielded a measure of meters traveled per second. *Appropriate behavior* was scored as movement of the child within five seconds of the teacher’s prompt to transition, and *inappropriate behavior* was scored contingent upon instances of off-task behavior, defined as engaging in any behavior unrelated to the teacher’s instruction to transition (e.g., manipulation of objects unrelated to the task, movement toward unassigned areas, stereotypic behaviors, attempts to escape from the room, inappropriate vocalizations, etc). Classes of teacher behavior included frequency

measures of prompt delivery (i.e., verbal, partial physical, full physical), attempts to block the child's movement contingent upon noncompliance to the instruction, and frequency of praise provided contingent upon appropriate child responding.

Results indicated that both procedures increased *appropriate behavior* and decreased *inappropriate behavior* during all three in-class transitions for all three participants, though the bell procedure was consistently superior to the peer-mediated procedure. Changes in teacher behavior also indicated concomitant reductions in the use of prompts to assist participants in transitions, particularly during the antecedent bell procedure. Even with evidence in support of the potential superiority of an antecedent stimulus procedure to that of a peer-mediated intervention in increasing appropriate engagement time during transitions, results of this particular study (Sainato et al., 1987) may be confined to populations of children diagnosed as autistic, inasmuch as the study was conducted with a limited number of participants and did not include measures representative of a larger sample of students. Relative to previous studies (Goetz et al., 1983; Wurtele & Drabman, 1984), however, this study (Sainato et al., 1987) provided more precise definitions of appropriate and inappropriate transitional behavior, beyond that concerning the amount of time spent in transitions. Measures of teacher behavior also indicated that, with increases in appropriate child behavior, the necessity of teacher prompts to facilitate transition was greatly reduced.

Other supports for individual students during transitions include the use of self-assessment and self-monitoring procedures. Results of a study by Connell and colleagues (1993) indicated that children can be taught to accurately self-assess their behaviors during transitions, as well as to solicit teacher reinforcement for adherence to rules

associated with in-class transitional behaviors. In this particular study (Connell et al., 1993), participants included four children, all four years of age and identified by their respective teachers as exhibiting problem behaviors during transitions, particularly those involving clean-up after morning free play activities and movement to a large-group circle activity. All four children were identified as language and/or cognitive delayed.

*Self-assessment* procedures were taught via modeling and rehearsal procedures, both in training rooms outside the classroom environment, as well as in the children's respective classrooms to assess generalization of skills to the naturalistic environment. Visual modeling was provided via posters depicting photographs of the children engaging in appropriate transitional behaviors, referred to as *active engagement*. Rehearsals involved teaching the children to associate happy and sad faces with respective appropriate and inappropriate transitional behaviors (i.e., *competing behaviors*). Experimenters provided feedback contingent upon accurate and inaccurate assessment of behavior during clinical and in-vivo transitions. Sessions designed to teach children to recruit teacher praise contingent upon adherence to rules for transitions were conducted in the children's respective classrooms, during targeted transitions. These in-vivo procedures involved modeling, role plays, rehearsals, and feedback for appropriate and inappropriate recruitment, as provided by the children's respective teachers.

Dependent child measures included *active engagement*, *competing behavior*, and *appropriate recruitment* (of teacher praise). Observation sessions were conducted three times each week, in both training and naturalistic classroom environments. Child *active engagement* and *competing behavior* were scored using a 10-second momentary time sampling procedure, and *opportunities to recruit* were scored using continuous 10-second

partial intervals. *Appropriate recruitment* and *total teacher praise* were scored using discontinuous 10-second partial recording intervals.

Results, evaluated in a multiple baseline across participants design (with reversals), revealed that three of the four children were able to self-assess their behavior during transitions, with concomitant decreases in *competing behavior* and increases in *active engagement*, evident in both training and naturalistic environments. With increased recruitment of reinforcement contingent upon appropriate engagement, teachers were observed to have increased overall rates of praise during previously problematic transitions and reduced the number of prompts provided to facilitate child transitory behaviors. Results of the study (Connell et al., 1993) therefore provide evidence in support of using preventative strategies to increase child engagement during transitions, particularly through acquisition of self-assessment techniques and appropriate solicitation of teacher praise contingent upon active engagement during transitions. Furthermore, results extend those of previous studies regarding transitional activities, demonstrating generalizations of training sessions to the classroom environment, with the teacher serving as the agent of intervention.

In an effort to extend results of transition-based interventions to children without developmental disabilities, authors (Cote, Thompson, & McKerchar, 2005) employed a multielement design to evaluate the effects of three transition interventions on child behavior. Participants included three typically developing children, all within 14 to 30 months of age, identified by their daycare teachers as exhibiting problematic behaviors during routine transitions from free play to diaper change procedures. The three interventions included a warning provided two minutes prior to the transition (i.e.,

*warning*), the opportunity to hold a preferred item during the transition (i.e., *toy*), and the use of extinction for inappropriate behavior during transitions (i.e., *extinction*).

Dependent child measures included *compliance*, defined as entering the diaper change area within 20 seconds of the teacher's initial prompt. Problem behaviors included various topographies of externalizing behaviors (e.g., kicking, hitting, biting, pushing, screaming, crying, etc.). Observations were conducted one to two times a day, four to five times weekly and involved recoding occurrence or nonoccurrence of target behaviors.

Results indicated that when the two antecedent strategies were implemented together (i.e., *toy* and *warning*), rates of compliance did not increase relative to baseline for any of the three participants. As such, increased rates of compliance were observed only contingent upon application of all *extinction* procedures (i.e., *extinction*, *warning plus extinction*, and *toy plus extinction*), providing substantial evidence for the functionality of an extinction component in interventions designed to support children's engagement and appropriate behavior during transitions. As a potential limitation of the study, however, functional analyses were not conducted to identify the function of noncompliance during transitions, though the efficacy of extinction would suggest that the behaviors were in fact maintained by escape from one or more components of the required transition.

Even with preliminary evidence in support of the success of these procedures with typically developing children, few studies regarding the application of universal supports involve preschool children between the ages of three and five years, particularly those developed for supporting children during in-class transitions. Of those applied to this

population, most have demonstrated the effects of providing supports for individual or small groups of children, few of which have evaluated the efficacy of these techniques as universal interventions to promote overall classroom engagement and reduce incidents of problem behavior. Furthermore, of those studies that have demonstrated evidence in support of the efficacy of universal prevention strategies to promote engagement, few have provided stringent operational definitions of “engagement”, nor have they provided systematic procedures to measure engagement. As such, research should evaluate the use of these procedures within typical early education and childcare environments, with particular attention to the effects of these procedures on measures of child engagement and problem behavior incidents.

#### Supporting Teachers: Barriers to Implementation

Despite the lack of empirical evidence, early educators are strongly encouraged to apply these strategies to entire classrooms, consistent with the idea that the prevalence of challenging behavior is one of the most frequently cited requests for support from early childhood educators (Hemmeter & Fox, in press). This is particularly true of Head Start educators, as evident in earlier reports signifying that 37% of surveyed teachers identified challenging behavior in children as among the most imperative of child-related concerns. This same report, however, revealed that 72% of surveyed teachers were dissatisfied with the quality and extent to which they received the necessary technical supports and training in the implementation of behavior management programs (Piotrkowski, Collins, Knitzer, & Robinson, 1994).

The implications for a deficiency in provision of supports for early educators are grave, including those affecting both teacher and student. As the trajectories for children

who do not receive the necessary supports may suggest plausible concern for future diagnoses of emotional and behavioral disorders, deficiencies in training teachers to implement these supports may further hinder the academic and social success of these children. The rationale for such is based upon results of research in the realm of the teacher-child relationship, some of which have indicated that teachers' perceptions of the extent to which a child with challenging behavior will succeed often serve as variables to these children's actual degree of success (Rimm-Kaufman & Pianta, 2000). This relationship is therefore cyclical in nature, suggesting that the prevalence of challenging behavior in a child may influence a teacher's perception of the child, and those perceptions, in turn, may fuel or hinder a child's success.

Furthermore, studies have suggested that variables influencing a teacher's perceptions of a child's behavior are not consistently dependent upon an objective analysis of the child's behavior itself. Rather, some of these perceptions are founded on characteristics of the child that are not directly related to the perceived behavior, but rather to such variables as the child's ethnicity and socioeconomic status, as well as to the child's prior exposure to social and environmental interactions (Rimm-Kaufman & Pianta, 2000). These interactions are relevant both to parenting practices, as well as to the nature of the peer relationships children form beyond the physical constraints of a classroom environment (Hollenstein, Granic, Stoolmiller, & Snyder, 2004; Jafee, Caspi, Moffitt, & Taylor, 2004). The nature of these influential variables to extend beyond the immediate control of the educators with whom children interact, may serve as further support for behavior management programs, the function of which is to educate teachers

as to the rationale for and application of preventative measures, as well as functionally-appropriate replacement behaviors.

Unfortunately, the prospect of supporting teachers in the implementation of interventions in an applied setting is not devoid of challenges, beginning with that of facilitating a teacher's understanding of the relationship between challenging behavior and subsequent social-emotional competence in children (Hemmeter & Fox, in press). Furthermore, comprehension of this relationship as it applies to young children is often difficult, given the unique characteristics associated with this population (Hemmeter & Fox, in press). These deficiencies are often exacerbated by a lack of outside supports, the complexity of an intervention, the amount of time required to implement an intervention, the perceived and actual effectiveness of an intervention, and the acceptability of an intervention (Gresham, 1991; Gresham, 1996; Gresham et al., 2000; Kratochwill & Van Someren, 1995; Salend, 1984). The individual and interactive effects of these variables often impede implementation of interventions in naturalistic school settings, placing further emphasis on the importance of effective consultation and active support of change agents. Following is a brief review of procedures designed to support teachers in their acquisition of skills necessary to implement universal strategies in the classroom.

#### *Coaching & Performance Feedback*

Within the realm of research regarding the provision of supports for teachers' implementation of interventions in the classroom, much of the research has been in that of training teachers to implement interventions, most prominently evident in the use of coaching and performance feedback procedures (e.g., Mortenson & Witt, 1998; Noell, Duhon, Gatti, & Connell, 2002; Noell et al., 2000; Noell et al., 2005; Schepis, Ownbey,

Parsons, & Reid, 2000; Petscher & Bailey, 2006; Witt, Noell, LaFleur, & Mortenson, 1997).

Coaching is defined in the literature as “a reciprocal process between a coach and learner, comprised of a series of conversations focused on mutually agreed upon outcomes” (Rush, Shelden, & Hanft, 2003). Within the realm of early childhood interventions, particularly those applied to classrooms, coaching reflects a process of behavior change that supports the foundational rationale of *The Teaching Pyramid*. That is, coaching supports the establishment of positive relationships between the consultant and the teachers and paraprofessionals responsible for supporting the social-emotional growth of children. Conducive to the establishment of these relationships is a consideration for the contextual fit of interventions developed during initial consultations with teachers, regarding both the practicality and efficacy of these procedures as applied to individual classrooms (Horner, Sugai, Todd, & Lewis-Palmer, 2000). Contextual fit, as relevant in consultation with early childhood educators, ensures active and collaborative participation in the selection of interventions, as well as provision of in-vivo training following didactic instruction regarding accurate implementation. As such, direct observations following initial consultation involve what 25 years of research have demonstrated as imperative to the coaching process: performance feedback (Ackland, 1991). Performance feedback involves several components, to include a review of behavioral data obtained from direct observations, provision of contingent praise for accurate and consistent implementation of the intervention components, corrective feedback on incorrect or inaccurate implementation, and consultation regarding various areas of concern or ambiguity (Coddling et al., 2005).

Early research in the evaluation of performance feedback have demonstrated greater efficacy in acquisition of consultee behaviors, relative to the conventional didactic method (e.g., Watson and Kramer, 1995). Didactic methods are those involving an interchange between consultant and consultee, largely comprised of verbal instruction in the identification and analysis of problem behavior, as well as collaborative efforts to develop plans of intervention. Other studies have demonstrated the efficacy of performance feedback given on less dense schedules, provided weekly rather than daily (Mortenson & Witt, 1998), as well as follow-up consultation procedures to maintain effects of feedback over time (e.g., Noell, Duhon, Gatti, Connell, 2002; Noell, Witt, Lafleur, Mortenson, Ranier, & Levelle, 2000).

Even with evidence in support of the efficacy of performance feedback on the integrity of teachers' implementation of interventions, the impact of performance feedback on subsequent changes in child behavior has produced relatively inconclusive results. In addition, much of the research in this area has been conducted in elementary school classrooms, with a primary focus on improving the academic behaviors of individual students.

#### Summary of Research to Date

Transitions between activities have been identified in the literature as comprising a substantial portion of a preschool child's day. As such, research have speculated that the setting events for problem behavior commonly associated with transitional activities (i.e., ) may be lessened with implementation of universal intervention strategies. As provided via a review of the literature involving application of universal interventions, few studies have demonstrated the effects of applying universal intervention strategies to

preschool children between the ages of three and five years. Of those studies that have demonstrated successful reductions of problem behavior for these children, few have been conducted with whole classrooms. Furthermore, even with evidence in support of the efficacy of universal interventions, more research is needed to delineate a clear functional relationship between application of these procedures and increases in child engagement, necessitating more stringent operational definitions of child engagement, as well as the application of a systematic method for measuring whole-class engagement.

The purpose of the current investigation is to evaluate the effects of implementing universal intervention strategies throughout periods of transition. These strategies will be referred to as systematic transition strategies, as relevant to the application of universal interventions to transition targeted by preschool teachers as problematic.

## CHAPTER 2. METHODOLOGY

The purpose of the following chapter is to identify and describe the methodology and procedures used to address the following research questions:

1. Will the use of systematic transition strategies, as implemented by preschool classroom teachers, affect the classroom engagement of preschool children during targeted transitions from one activity to another?
2. Will the use of systematic transition strategies, as implemented by preschool classroom teachers, affect the challenging behavior of preschool children during targeted transitions from one activity to another?

Given the intended purposes of the present study, efforts to expand upon the current literature knowledgebase were supported by inclusion of the following features: 1.) the participants included teachers of typically-developing preschool children between the ages of three and five years; 2.) dependent measures included mean percentages of classroom engagement and occurrence of challenging behavior during targeted transitions, for each session of all phases of the study; and 3.) supplemental measures regarding possible outcomes associated with application of the interventions included treatment integrity data on teacher implementation of the interventions (i.e., percentage of steps completed), and social validation measures regarding teachers' perceptions of the goals, procedures and outcomes of the study.

## Setting and Participants

The site of the present study was that of a Hillsborough County Head Start Center. The center was on a full year, full day schedule, with children attending preschool from 7:00am to 5:30pm each day. To merit eligibility for Head Start services, families of children enrolled in the program were required to have met Federal Poverty guidelines or to have been in receipt of public assistance (i.e., Aid to Families with Dependent Children or Supplemental Security Income, SSI).

The Head Start Center housed two Early Head Start and four Head Start classrooms, with children ranging in age from one to two years and three to five years, respectively. The overall enrollment at the time of the study encompassed 76 children (i.e., 12 Early Head Start and 64 head Start children). Each of the two Early Head Start classrooms enrolled six children, and the Head Start classrooms enrolled an average of 18 children. Each Head Start and Early Head Start classroom was staffed by a teacher and one classroom teaching assistant.

At the time of the study, the overall demographics of children enrolled in the Head Start Center were as follows: 39.5% African-American, 35.5% European-American, 22.4% Hispanic, and 2.6% of an “unidentified” nationality. Ten of the 76 children (i.e., 7.6%) were identified as having been diagnosed with a developmental disability, diagnoses having ranged in topography from that of global developmental delays to Pervasive Developmental Disorder, Not Otherwise Specified (PDD-NOS). The teaching staff employed by the center included nine African -American females, one Hispanic female, and two European-American females.

Teaching staff at the Head Start Center had served as participants in a program-wide effort to implement the *Teaching Pyramid* model (Fox et al., 2003) within their classrooms. The researcher of the current study, a graduate student at the University of South Florida, had previously collaborated with teachers of the Head Start Center on the program-wide initiative to apply principles of the *Teaching Pyramid* to their classrooms. The purpose of the current study was to provide additional supports to interested teachers, in an effort to collaborate on the focused implementation of universal intervention strategies, applied to specific transitions selected by teachers as particularly problematic. The primary researcher of the current study also served as behavioral consultant to participating teachers.

Eligibility for participation in the current study was dependent upon low implementation scores (i.e., 0-2 out of 5) on the *Teaching Pyramid Observation Tool for Preschool Classrooms* (TPOT, Hemmeter & Fox, 2007), particularly in the area of providing well designed transitions between activities (i.e., item 9 of the *TPOT*). Teachers with low scores were contacted by the researcher who described the study and inquired about their interest in participation. The researcher then arranged to meet with interested teachers to review the study procedures and obtain consent to participate, as well as to answer any questions or concerns expressed by teachers. Informed consent documents were completed for purposes of securing confidentiality and safety of all participants.

Participants of the current study included three of the Head Start teachers, as well as their respective students, all between the ages of three and five years. The following

information describes each of the three participating teachers, as well as the general demographics of children in their classrooms.

#### *Teacher A*

Classroom A was staffed by Teacher A, an African-American female with a Bachelor of Science degree in Human Services, along with an African-American teaching assistant with national certification as a Child Development Associate (CDA). Teacher A's background in teaching had encompassed an accumulation of eight years as a Head Start teacher. Throughout the duration of the study, 16 children were enrolled in Classroom A, 10 (i.e., 62.5%) of whom were African-American, four (i.e., 25.0%) of whom were European-American, and two (i.e., 12.5%) of whom were Hispanic.

For Teacher A, the selected transition was that between breakfast and morning language activities, referred to throughout as the *breakfast to language* transition.

#### *Teacher B*

Classroom B was staffed by Teacher B, an African-American female with an Associate's degree in Criminology and national certification as a Child Development Associate (CDA), along with a female European-American teaching assistant with national certification as a Child Development Associate (CDA). At the time of the study, Teacher B had served eight years as a Head Start teacher, and the teaching assistant had accumulated a total of 11 years of experience in working with preschool-aged children. A total of 15 children were enrolled in Classroom B, five (i.e., 33.3%) of whom were African-American, four (i.e., 26.7%) of whom were European-American, four (i.e., 26.7%) of whom were Hispanic, and two (i.e., 13.3%) of whom were of an "unidentified" nationality.

Due to the fact that Teacher B filled the additional position as Director of the Head Start Center, there were several sessions during which she was unable to be in the classroom. On those session days, the assistant teacher was responsible for managing the classroom and leading classroom activities. As a result, the researcher initiated contact with the assistant teacher to inquire of her interest in serving as a participant in the study. The researcher arranged to meet with her to review study procedures and obtain consent to participate in the study.

Teacher B selected the transition from center cleanup to morning circle activities, referred to throughout as the *centers to circle* transition.

#### *Teacher C*

Classroom C was staffed by Teacher C, an African-American female with a Master's of Arts degree in Community Counseling, as well as a Bachelor of Science degree in Early Childhood Education. At the time of the study, Teacher C had served 10 years as a Head Start Teacher. Classroom C was also staffed by a female European-American teaching assistant with nine years of experience in working with young children. Classroom C consisted of 12 children, two (i.e., 13.3%) of whom were African-American, three (20%) of whom were European-American, seven (46.7%) of whom were Hispanic, and three (20%) of an "unidentified" nationality. One (0.07%) of the 15 children was identified as having been diagnosed with Down Syndrome. (The mean number of children present in participating classrooms, for each session of all phases of the study, may be obtained from the researcher upon request.)

Teacher C targeted the transition from circle to morning centers, referred to throughout as the *circle to centers* transition.

Though occurrence of challenging behavior was targeted as a dependent variable of interest in the current study, common topographies and dimensions of challenging behavior in children differed across participating classrooms. As reported by Teachers A and C, common topographies of challenging behavior generally included those associated with more age-typical behaviors (e.g., struggling over a common toy, taking a toy or object away from a peer without permission, speaking at volumes louder than that of normal conversational speech, etc.), relative to behaviors common in children referred for intensive, individualized services. As reported by Teacher B and her assistant, topographies of challenging behavior common to children enrolled in Classroom B were of greater intensity and frequency than those of Classrooms A and C, as associated with attempts to or actual occurrences of physical aggression and property destruction (e.g., punching, kicking, biting, using objects in an attempt to harm another, throwing objects at peers or inanimate objects, etc.).

#### Dependent Variables

The researcher identified two dependent variables for data collection, consistent across all three participating classrooms and utilized across all children present during data collection sessions. The two identified dependent variables targeted for study were classroom engagement and occurrence of challenging behavior. As the primary dependent measure, classroom engagement was measured using a modified form of the *Engagement Check II* (McWilliam, 1998a), a variation of the *Planned Activity Check* (PLA-Check; Risley & Cataldo, 1973). In the present study, classroom engagement was defined as: physical orientation and/or movement toward or away from the teacher, materials, location, and/or activities related to directives to transition; eye contact or

orientation toward the teacher to receive transition directives; interaction with peers and/or adults in a manner consistent with transition directives and expectations; and movement from one location to new, teacher-directed locations. For purposes of accurate data collection, operational definitions of classroom engagement for each of the three participating classrooms were dependent upon the extent to which children followed teacher expectations associated with targeted transition activities, as identified by teachers during initial consultations. If children exhibited behaviors incompatible with teacher expectations, they were not scored as engaged. (Refer to Appendices B, C, and D for operational definitions of classroom engagement for Classrooms A, B, and C, respectively.).

Behaviors reflecting lack of engagement were mutually exclusive and generally encompassed those related to lack of attending (i.e., lack of eye contact with the teacher upon delivery of verbal instructions and expectations; body orientation and/or movement away from the teacher, materials and/or physical location related to the delivery of teacher-led verbal instructions and expectations). Behaviors incompatible with engagement also included those that may have interfered with the ability of the child, or of his or her peers, to appropriately attend to teacher-initiated instructions (e.g., crying, screaming, or whining, at volumes louder than that of normal conversational speech).

Occurrence or nonoccurrence of challenging behavior was also scored as a dependent measure during direct observation sessions. Operational definitions of challenging behavior were consistent across all classrooms and included any occurrence within the 15-second interval of physical aggression, with the potential to cause harm to oneself or another (e.g., attempts to or acts of hitting, punching, kicking, biting,

scratching, pinching, pulling hair, pulling clothes, directed toward other children and/or adults, etc.); elopement (i.e., leaving assigned areas without teacher permission); and inappropriate use of materials and/or property destruction (i.e., using materials in a manner other than that intended, such as in throwing or using objects to hit another peer or adult, pulling toys off of shelves, knocking over toy bins or containers, struggling with another child over a particular toy or object, and/or taking toys and other materials without teacher permission).

### Design and Data Collection

The effects of the implementation of systematic transition strategies on mean percentages of classroom engagement and occurrence of challenging behavior during in-class transitions were evaluated in a multiple baseline probe across classrooms design (Horner & Baer, 1978). This design provided an experimentally-controlled analysis of the potential effects of the independent variable on targeted behaviors, as evaluated within and across participating classrooms.

The study was conducted in each teacher's classroom during transitions targeted for intervention, as identified via initial consultations with teachers. Teachers and children were observed three to five days a week, throughout the duration of targeted transitions. During data collection sessions, data collectors were positioned in an area of the classroom conducive to observing all children throughout the targeted transitions and remained as unobtrusive as possible. The total number of children present was counted and confirmed between data collectors prior to each session, and records of children present during each interval included only those in view (i.e., unobstructed by an inanimate object or person). Data collection sessions were initiated with teacher-led

verbal directives to children to end one activity and begin another and ended with all children in the appropriate location, as dependent upon the activity.

During targeted transition activities, data collectors recorded classroom engagement and partial interval measures of the occurrence or nonoccurrence of challenging behavior, utilizing a 15-second observation recording system, followed by five seconds of recording time. Observers used paper and pencil to record direct observation data, using a modification of the *Engagement Check II*. (See Appendix A for a sample data sheet.) Coding consisted of both momentary time sampling and non-continuous interval recording. An auditory cue, heard only by the observers and emitted from an audiotape, was used to signal the start time of each 15-second interval. Each interval functioned as a momentary time sampling (i.e., engagement scan) of all children in the classroom for purposes of determining the number of children engaged. Engagement scans were conducted in a particular pattern for each classroom, as determined by observers prior to data collection sessions. During each interval, to ensure that both data collectors were observing the same children simultaneously throughout the scan, the primary observer (i.e., researcher) either pointed to children and/or tapped out a rhythm that corresponded with children observed, according to the pattern in which scans were conducted. (Engagement scan patterns for Classrooms A, B, and C are indicated within the context of operational definitions, located in Appendices B, C, and D, respectively.).

Partial interval measures for the occurrence or nonoccurrence of challenging behavior were also recorded during 15-second observation intervals. If, at any time during

the 15-second interval, one or more children engaged in challenging behavior, observers scored an occurrence of challenging behavior for that interval.

For each interval of data collection, classroom engagement was calculated by counting the number of children engaged, dividing that number by the total number of children present and observable during each interval, and multiplying by 100 to yield a percentage of classroom engagement. Interval scores of classroom engagement were averaged to produce a mean percentage of classroom engagement for each session (i.e., summation of interval percentages divided by the total number of intervals scored).

For each session of data collection, the percent occurrence of challenging behavior was calculated by dividing the summation of occurrences across intervals by the total number of intervals scored, multiplied by 100 to yield a percent occurrence of challenging behavior for each session.

#### *Interobserver Agreement*

To ensure reliability of dependent variables, a second observer was trained in data collection procedures using *The Engagement Check II*. At the time of the study, the second data collector had several years of previous experience in working with children and was enrolled in the Applied Behavior Analysis Master's program at the University of South Florida. Reliability training consisted of coding videotaped segments of preschool classrooms engaging in both stationary (e.g., circle and tabletop activities) and transitional activities (e.g., moving from inside to outside, etc.). Contingent upon attaining a minimum criterion of 80% interobserver agreement in training for three consecutive data collection sessions, the second observer simultaneously and independently recorded data for a minimum of 30% of all sessions.

Interobserver agreement for classroom engagement was calculated on an interval-by-interval basis, by comparing each interval scored and recorded by the primary and reliability data collectors. Agreements were defined as both observers independently recording the number of children engaged, within one.

Interobserver agreement for challenging behavior was also calculated on an interval-by-interval basis, for total agreement (i.e., occurrence-nonoccurrence agreement). Agreements were defined as both observers independently recording an occurrence or nonoccurrence of challenging behavior.

Interobserver agreement for both classroom engagement and occurrence of challenging behavior was calculated by dividing the total number of agreements by the number of agreements plus disagreements, multiplied by 100 to yield a percentage.

Overall, mean percent interobserver agreement for classroom engagement exceeded 99.0% across all three participating classrooms. Mean percent interobserver agreement totals were 99.3% for Classroom A (range: 97.2% to 100.0%), 99.1% for Classroom B (range: 93.8% to 100.0%) and 99.6% for Classroom C (range: 97.9% to 100.0%).

Overall, mean percent interobserver agreement for challenging behavior exceeded 98.0% across all participating classrooms. Mean percent interobserver agreement totals of challenging behavior were 99.7% for Classroom A (range: 97.4% to 100.0%), 98.3% for Classroom B (range: 88.1 to 100.0%), and a stable 100.0% for Classroom C.

Interobserver agreement measures for classroom engagement and challenging behavior were calculated across 40.0% of sessions for Classroom A, 31.8% of sessions

for Classroom B and 33.3% of sessions for Classroom C, across all phases of the study (i.e., *baseline*, *coaching*, and *independent implementation*).

### Treatment Integrity

Observers scored the integrity with which teachers implemented the systematic transition strategies during all sessions of intervention phases (i.e., *coaching* and *independent implementation*). Scores were based on checklists that reflected components of strategies selected for each individual classroom. Immediately following sessions of intervention, observers scored treatment integrity, based upon the accuracy with which teachers implemented components of intervention. “Accurate” implementation of a particular component, scored as a “yes”, was dependent upon correct and complete use of a component strategy, as relevant to written descriptors of implementation in teachers’ scripts. A “no” was scored for those components that were not implemented at all or were implemented inaccurately (i.e., incorrectly and/or incompletely). An “N/O” (i.e., “no opportunity”) was scored if, during a data collection session, the opportunity to implement a particular component was not presented. Treatment integrity scores were calculated by dividing the number of strategies accurately (i.e., correctly and completely) implemented by the total number of applicable or opportune strategies, multiplied by 100 to yield a percentage of strategies implemented for each session. (Refer to Appendix A for Treatment Integrity Checklists for Teachers A, B, and C.).

To ensure interobserver reliability for treatment integrity measures, a second observer was present for at least 25% of all sessions during which treatment integrity was collected (i.e., during *coaching* and *independent implementation* phases). Agreements were defined as both observers independently recording an exact match (i.e., “Yes”,

“No”, or “No Opportunity”). Interobserver agreement for treatment integrity measures was calculated by dividing the number of agreements by the number of agreements plus disagreements, multiplied by 100 to yield a percentage.

Overall, mean interobserver agreement for treatment integrity measures exceeded 96.0% for all participating teachers. Mean percent interobserver agreement for Teacher A was 100.0% (i.e., stable), 98.1% for Teacher B (range: 92.3% to 100.0%), and 96.7% for Teacher C (range: 90.0% to 100.0%). Interobserver agreement was calculated across 35.0% of intervention sessions for Teacher A, 28.6% of intervention sessions for Teacher B and 33.3% of intervention sessions for Teacher C.

#### Social Validity

To assess teachers' acceptability and perception of the goals, procedures, and outcomes of the systematic transition strategies (Wolf, 1978), the researcher administered questionnaires following each classroom's final session of the *independent implementation* phase. Items on the questionnaire referenced the extent to which teachers found the intervention conducive to goals discussed during selection procedures (e.g., increased classroom engagement and fewer incidents of challenging behavior during targeted transitions), overall satisfaction with actual outcomes, and feasibility of implementation in the classroom. Measures were assessed on a three-point Likert-type scale (i.e., 1 = *Not at all Effective/Well/Easy*; 2 = *Moderately Effective/Well/Easy*; 3 = *Very Effective/Well/Easy*).

In addition to administration of the social validity questionnaire, the researcher conducted direct interviews (i.e., *Consumer Satisfaction Interview*) with each of the participating teachers (i.e., Teacher A, Teacher B, Teacher B's assistant, and Teacher C).

While the purpose of the social validity questionnaire was to obtain a quantitative measure of teachers' perceptions of the goals, procedures, and outcomes of the interventions, interviews were conducted to collect additional qualitative information regarding teachers' overall impressions of the consultation process and data collection procedures. These interview sessions were audio-taped for each of the participating teachers. (Refer to Appendix A for a copy of the social validity questionnaire and *Consumer Satisfaction Interview* questions.)

#### Independent Variable

The independent variable of the present study was the implementation of systematic transition strategies during targeted transitions. Throughout processes of *intervention strategy selection*, the researcher collaborated with teachers to select strategies appropriate for their classrooms and targeted transitions. General strategies, as outlined in Item 9 of the *Teaching Pyramid Observation Tool* (TPOT, Hemmeter & Fox, 2007) and/or reviewed in the literature, were presented to teachers as possible interventions to implement throughout targeted transitions. In the present study, these included both antecedent and consequent manipulations.

Antecedent manipulations, as presented to teachers for possible selection, encompassed the implementation of visual schedules, verbal and auditory cues delivered prior to teacher-initiated directives to move from one activity to another, and the use of supplemental visuals and activities, delivered prior to and throughout the transition, to further clarify teacher expectations and reinforce children's engagement in these expectations.

The content of verbal cues included information regarding the amount of time remaining until the next activity, as well as descriptive statements regarding the content of the upcoming activity and/or of expectations for children during the period of time between delivery of the cue and verbal initiations of the next activity. If chosen as strategies to implement in place of or as supplements to verbal cues, auditory cues (e.g., a ringing bell) were provided prior to teacher-led directives to transition.

Visual schedules, if selected, were made up of posters depicting illustrations of behaviors expected of children throughout targeted transitions. These schedules were reviewed by teachers and posted in areas of the classroom visible to all children. Mini visual schedules, similar in topography but smaller than visual schedules, were utilized for purposes of reinforcing the sequence of tasks in which children were expected to engage, as specific to particular periods of targeted transitions.

Supplemental visuals were also implemented as antecedent manipulations, the functions of which were to serve as additional environmental cues to further clarify teacher expectations. These visuals were individualized for each classroom, as associated with teachers' goals for targeted transitions. Possible options presented to teachers included the use of actual objects and/or pictures to serve as discriminative stimuli for engagement in teacher expectations, as well as to reinforce active engagement throughout targeted transitions.

As a supplemental activity, the "Beat the Buzzer" game has been presented in the literature as a method to reduce cleanup time, as well as to increase children's engagement in cleanup activities. Implementation of the "Beat the Buzzer" game was

presented as an option for one of the three participating teachers (i.e., Teacher B), as she chose to target a transition during which children were expected to clean their areas.

Consequent strategies implemented were consistent across classrooms and included the delivery of descriptive praise, contingent upon exhibiting behaviors compatible with teacher expectations (e.g., “Sally, great job sitting criss-cross-applesauce with your book!”). Redirections were also implemented across classrooms, defined as verbal directives delivered to children contingent upon exhibiting behaviors incompatible with teacher expectations. Redirections included descriptors of expected behaviors, rather than reprimands regarding behaviors incompatible with compliance to teacher expectations (e.g., “John, please place your dirty silverware in the sink.” versus “John, don’t leave your silverware on the table.”). Redirections were occasionally accompanied by visuals, depicting illustrations of teacher expectations to further reinforce appropriate engagement in targeted transition activities (Refer to Appendices E, F, and G for summaries of systematic transition strategies selected by Teachers A, B, and C, respectively.).

### Teacher Consultation Procedures

#### *Initial Consultation*

Prior to the start of the study, the researcher conducted an initial consultation session with each teacher for purposes of identifying transitions to target for intervention, as well as behaviors associated with these transitions. Initial consultations were approximately 20 to 30 minutes in duration and occurred at a time and place most convenient for each teacher. The researcher began with a general discussion of what may constitute transitions in a preschool classroom, described via examples provided in the

literature (i.e., "...teacher-initiated directives to students to end one activity and to start another") (Arlin, 1979). After giving a generalized description, the researcher collaborated with teachers to identify one particularly problematic transition. The process of operationalizing targeted transitions for purposes of data collection involved an inquiry of overt stimuli associated with start and end times, as well as a delineation and operational description of requirements children were expected to follow throughout the selected transitions. As pertinent to teachers' descriptions of expectations for children during targeted transitions, the researcher developed operational definitions of behaviors that reflected appropriate classroom engagement for each of the three participating classrooms. In addition to a description of appropriate engagement, teachers were asked to describe topographies (i.e., intensity and frequency) of challenging behavior common to targeted transitions.

While general descriptions of transitions provided in the literature are simplistic and involve movement from one activity to another, transitions targeted by each of the three participating teachers were complex and encompassed a sequence of multiple activities. The rationale for targeting entire transitions was such that teacher expectations associated with transition activities were completed by children at various times, rather than by all children simultaneously. Below is a description of information gathered during each teacher's initial consultation procedure, as associated with targeted transitions and descriptors thereof.

*Teacher A: Initial Consultation.* Teacher A identified the transition from breakfast to morning language groups as particularly problematic. (This transition will be referred to as the *breakfast to language* transition.). Contingent only upon Teacher A's

verbal instruction to get up from breakfast tables, children were expected to get up from their chairs, push their chairs under their tables, take any disposable breakfast materials to the trash receptacle, place used silverware into the sink, pour any leftover milk from the milk carton into the sink, and stand in line outside the restroom to brush teeth. Following completion of their tooth brushing task, children were expected to leave the restroom area, walk to one of two bookshelves to retrieve a book, walk to their assigned carpeted areas while holding their books in hand, sit cross-legged with their books until the start of morning language activities, and place books back onto the shelves, contingent upon Teacher A's verbal instruction to "put books away". Children were not permitted to leave their assigned areas, prior to teacher-initiated verbal instructions to put books away and transition to morning language groups.

Teacher A indicated that stimuli associated with the start of the *breakfast to language* transition served as prompts for children to end breakfast and prepare for the transition to language. These cues included verbal instructions to children at the breakfast tables to stand up, called according to numbers assigned to each table (e.g., "Table number one, get up.").

The *breakfast to language* transition ended with Teacher A's verbal directive to "put books away" and move to the areas in which language would be conducted for the day (e.g., "Put your books up and go to your table for language."). Children's designated language areas were dependent upon the planned language activity and were generally conducted at the breakfast tables or on two separate carpeted areas. On days during which both Teacher A and her assistant were in the classroom, the children were divided into two groups, each led by Teacher A or the assistant teacher.

When asked to consider challenging behaviors that were particularly common to the *breakfast to language* transition, Teacher A reported that the majority of problematic behaviors were associated with “not following directions” and/or with behaviors incompatible with teacher expectations (e.g., getting up from the table prior to Teacher A’s verbal instruction; leaving leftover breakfast materials on the tables; elopement from teacher-appointed carpeted areas between the period of time between breakfast and language groups).

Teacher A expressed that her goal for the *breakfast to language* transition involved increasing the extent to which children were able to independently follow expectations. She explained the rationale for identifying the *breakfast to language* transition as most problematic, as related to the difficulty of completing various tasks that were required of her (e.g., preparing the children’s toothbrushes, washing tables after breakfast, preparing materials for daily language activities, etc.), while simultaneously attempting to keep the children engaged with all expectations and requirements. Teacher A reported that her ability to divide her attention between tasks was particularly difficult on days when the assistant teacher was absent or attending to responsibilities beyond that of the classroom (e.g., kitchen duty).

The average duration of the *breakfast to language* transition was approximately 13 minutes.

*Teacher B: Initial Consultation.* Teacher B’s targeted transition began with the five-minute period of time prior to center cleanup and continued until the initiation of morning circle activities. (This transition will be referred to as the *centers to circle* transition.). Throughout the five minutes prior to cleanup, as well as during the actual

cleanup process, children were expected to remain within the physical boundaries of their chosen centers. Following cleanup, children were expected to place their nametags, appointed for center activities, onto the counter located near the restroom, remove a book from one of three bookshelves, and sit cross-legged and/or kneeling with their books until the start of morning circle activities. The *centers to circle* transition began with a verbal cue to children regarding the amount of time remaining, prior to the start of cleanup (i.e., “You have five more minutes until cleanup!”), and ended with all children seated on the carpeted area in which morning circle activities were conducted.

Teacher B reported that the period of time between completion of the cleanup task and initiation of circle activities was most problematic, with the highest frequency of problem behaviors. This was particularly true on days during which the lead or assistant teacher was unable to supervise children on the carpeted area. Common topographies of challenging behavior included inappropriate use of materials and/or property destruction (e.g., throwing toys and other items at or near other children or inanimate objects, physical struggles between children over a particular toy or object, and/or taking toys and other materials from other children without permission), as well as incidents of physical aggression (e.g., attempts to or acts of hitting, punching, kicking, biting, scratching, pinching, pulling hair, pulling on the clothes of another, etc.).

In addition to targeting appropriate child engagement, Teacher B communicated that her goals for the *centers to circle* transition were to reduce the amount of time children spent cleaning their areas, as well as to increase the class’s understanding of expectations for the period of time between cleanup and the start of morning circle.

The average duration of the *centers to circle* transition was approximately 13 minutes.

*Teacher C: Initial Consultation.* Teacher C targeted the transition from morning circle activities to the selection of centers. (This transition will be referred to as the *circle to centers* transition.). The transition began with an instruction to the children to sit cross-legged and face the teacher, in preparation to choose centers. At the beginning of the transition to centers, the teacher placed the children's nametags, designated for center activities, onto a nearby table. Contingent upon verbal instructions from Teacher C to choose a center, children were expected to get up, walk toward the teacher, and remove their nametags from the table. After selecting a center, children were instructed to walk directly to their chosen centers, and remain within the boundaries of their chosen areas throughout the duration of the routine.

Beyond that of reinforcing appropriate child engagement in activities associated with the *circle to centers* transition, Teacher C's rationale for identifying *circle to centers* as most problematic was associated with her goal that the routine operate as conducive to increasing the children's understanding and rules regarding available and unavailable centers, as well as to increase the degree of independence required of children to find and remain within the boundaries of their chosen centers. Conversations with the teacher regarding the topography (i.e., frequency and intensity) of challenging behaviors common to *circle to centers* revealed concerns regarding mildly aggressive behaviors (e.g., pushing, pulling, struggling over a common toy, etc.).

The average duration of the *circle to centers* transition was approximately 8 minutes.

### *Intervention Strategy Selection*

Following identification of problematic transitions, the researcher arranged to meet with each teacher for a second consultation. The purpose of the second consultation was to guide teachers in the selection of systematic transition strategies to implement during targeted transitions. This process began with a discussion of issues regarding problems preschool children commonly experience during transitions (e.g., unpredictability, unclear expectations and rules, unclear transition start and end times). Following this discussion, the researcher presented teachers with universal intervention strategies commonly applied to attenuate these problems. Presented strategies included the use of visual schedules, verbal and auditory cues delivered prior to teacher-initiated directives to move from one activity or location to another, and the use of supplemental visuals and activities to further clarify teacher expectations and reinforce children's engagement in expectations.

The researcher collaborated with teachers to select interventions most contextually appropriate for their classroom environments and targeted transitions. The process of selecting intervention strategies began with a discussion of any discrepancies between teacher expectations of children during targeted transitions, as outlined during *initial consultations*, and child behavior observed during *baseline* sessions. After guiding teachers in the selection of systematic transition strategies, the researcher reviewed each component of the intervention with teachers, while simultaneously describing the rationale for each. Teachers were provided with typed scripts of each component for use during subsequent implementation sessions, as well as a time for questions and comments as pertinent to implementation of the components.

*Teacher A: Intervention Strategy Selection.* Selection of antecedent manipulations for Teacher A included the implementation of a visual schedule, use of a mini visual schedule, and the delivery of verbal cues. Selection of supplemental antecedent manipulations (i.e., visuals) was based upon Teacher A's goal to increase children's engagement in expectations, as well as to increase the extent to which children were able to independently follow expectations throughout the *breakfast to language* transition (i.e., "train tickets", colored footprints, circle seat photographs, and book bins).

Consequent strategies implemented included the delivery of descriptive praise to children engaged in expectations associated with the *breakfast to language* transition, as well as providing redirections to those children exhibiting behaviors incompatible with engagement. Visuals were occasionally presented as supplements to verbal statements of redirection, to further reinforce children's understanding of teacher expectations.

The rationale for implementation of the visual schedule was primarily preventative in nature. The use of pictures to illustrate Teacher A's expectations for children throughout the *breakfast to language* transition was projected to increase the overall predictability of these expectations. The visual schedule was placed in an area of the classroom visible to all children from their breakfast tables (i.e., on the front door of the classroom) and remained in this location throughout the duration of the *breakfast to language* transition. Pictures were not removed from the schedule or turned over contingent upon completion of an activity, as common to the implementation of visual schedules. The rationale for this was two-fold. Activities illustrated on the schedule were exhibited by children at differing times throughout the *breakfast to language* transition. Maintaining the visibility of pictures throughout the routine was hypothesized to

strengthen the function of the schedule to serve as a stationary visual cue to children of teacher expectations. Secondary to this rationale was that of supporting Teacher A's goal to increase children's level of independence in following her expectations. As a component of the various strategies selected, Teacher A reviewed the visual schedule with children, prior to delivering the first verbal cue.

Delivery of verbal cues also served a preventative function, as it served to increase the predictability of upcoming events. The first verbal cue was delivered following review of the visual schedule and served to remind children of the amount of time remaining prior to Teacher A's verbal instructions to children at the first table to get up from their table. This predictability was particularly useful, given the tendency of children to stand prior to verbal instructions to get up from breakfast tables. An additional verbal cue was provided at the end of the *breakfast to language* transition, prior to Teacher A's instruction that children put their books away and prepare for the start of language activities (e.g., "You have five more minutes with your books; then, I going to ask you to put your books back in the bins.").

Observations during baseline confirmed the tendency of children to leave leftover breakfast materials on the table, rather than disposing of the materials as per Teacher A's expectation. In collaborating with Teacher A to clarify the expectation that children dispose of waste prior to standing in line to brush teeth, a box of what were referred to as "train tickets" was placed on a shelf, located within five feet of the trash receptacle. During a daily review of the visual schedule, children were instructed to remove a ticket from the box, after disposing of any leftover breakfast materials, and deliver the ticket to Teacher A upon approaching the "train" (i.e., a line children formed near the class

restroom and on which children stood to brush teeth). The established contingency was that children were permitted to stand in line, contingent only upon handing her a train ticket. The proximity of the box to the trashcan was intended to function as a discriminative stimulus and visual cue to children to dispose of any leftover breakfast materials, prior to receiving permission to stand in line to brush teeth.

The colored footprints served as environmental cues to clarify the area in which children were to remain while standing in line to brush teeth and wait to use the restroom. As children arrived to brush teeth, the teacher instructed them to give her their “train tickets” and stand on one of the four sets of colored footprints. As children finished in the restroom, Teacher A used a mini-schedule to remind children of the sequence of expectations in which to engage, following completion of tooth brushing and prior to teacher-initiated directives to transition to language groups.

Other antecedent manipulations applied during intervention phases involved the use of children’s photographs to delineate seating arrangements on each of the two carpeted areas, as well as the placement of an open bin in the center of each carpeted area. The placement of book bins was intended to serve as discriminative stimuli to children of the expectation that they look through a book while waiting for language to begin, as well as to decrease the response cost of getting a book. Eight children were assigned to each carpeted area, and therefore each bin held a minimum of eight books, for use during this targeted transition.

In addition to the application of antecedent prevention strategies, the researcher suggested that Teacher A implement consequent strategies, delivered contingent upon child behavior (i.e., verbal statements of descriptive praise and verbal statements of

redirection). Occasional statements of descriptive praise were delivered to children engaging in behaviors compatible with teacher expectations (e.g., “Sally, great job sitting criss-cross applesauce with your book!”).

Verbal statements of redirection were delivered to children, contingent upon exhibiting behaviors incompatible with teacher expectations. These redirections were to function as descriptors of what children were expected to do, rather than of what they were not permitted to do (e.g., “Johnny, throw your trash in the trash can, then get on the train to brush teeth.”).

*Teacher B: Intervention Strategy Selection.* Teacher B’s selection of antecedent manipulations included provision of a verbal cue prior to cleanup, use of periodic verbal cues to facilitate children’s understanding of the amount of time they had left to clean up, use of a mini visual schedule, the use of a cleanup-themed song, and opportunities for children who finished cleaning early to assist their peers. Selection of supplemental antecedent manipulations (i.e., visuals) was based upon goals to reduce the amount of time children spent cleaning their areas, as well as to increase appropriate engagement during the period of time between cleanup and the start of circle activities.

Consequent strategies included descriptive praise to those children following expectations, and redirections for children who exhibited behaviors incompatible with teacher expectations. Descriptors of and rationales for the aforementioned strategies were also discussed with the assistant teacher. Furthermore, both teachers were present for the initial in-vivo coaching session during which strategies were modeled and teachers were provided feedback on accurate and inaccurate rehearsal of components (i.e., session 11).

Originally, Teacher B and her assistant initiated the *centers to circle* transition with a verbal warning to children that they had “five more minutes left until cleanup”. Following this warning, several of the children began the cleanup process prior to the actual instruction to begin cleanup. As a result, these children often sat on the carpeted area for several minutes, without direct instruction or guidance from a teacher. As discussed during initial consultations with the lead and assistant teachers, this period of unstructured time was frequently associated with incidents of problem behavior, particularly on those days during which only one teacher was present in the classroom and therefore unable to attend to children on the carpeted area. The researcher suggested that Teacher B and her assistant change the current verbiage of the verbal warning, provided prior to the start of cleanup. This warning cue was to be given with the clarification that children had “\_\_\_ minutes left to play”, without reference to cleanup. The purpose of this change was to increase the functionality of the verbal warning to serve as an opportunity for children to finish their current activities, rather than to reinforce initiation of the cleanup process. The overall intent was to extend the time children engaged in play, so as to minimize unstructured time spent on the carpet between cleanup and the start of circle activities.

After delivery of the verbal cue, it was suggested that one or both teachers visit each center and prompt children to discuss what they would put away when instructed to clean up their areas, the rationale for which was associated with providing children a cue as to the upcoming cleanup process. In doing so, one of the teachers used a finger puppet, introduced to the children as “Polly-Pickup”, to increase their engagement in these

discussions, as well as to reinforce the expectation that they remain within the boundaries of their centers during play.

In order to address the teachers' goal that children spend less time cleaning their areas, the actual cleanup process was initiated with initiation of a game known throughout the literature as "Beat the Buzzer". This game has been implemented for purposes of increasing children's engagement in the cleanup process, as well as for reducing the amount of time children spend cleaning up (e.g., Wurtele and Drabman, 1984). Prior to providing verbal instructions to children to begin the cleanup process, teachers encouraged children to clean up their areas, before a timer reached the end of a five-minute countdown. At the start of the game, one or both teachers presented a mini visual schedule, depicting illustrations of expectations associated with the period of time following cleanup and prior to teacher initiation of circle activities (i.e., place nametags on the counter, get a book, and sit on the carpet with a book until circle).

After starting the timer and delivering the verbal instruction to "cleanup", the lead or assistant teacher played a cleanup-themed song, the function of which was to serve as an additional predictability cue to children of the expectation to clean their areas. The use of cleanup-themed music has been shown in the literature to increase child engagement in the cleanup process, as well as to reduce the amount of time children spend cleaning their areas (e.g., Register & Humpal, 2007). One of the teachers also walked around the room with a red glove, used as a supplemental visual aid to facilitate children's understanding of the amount of time remaining. This was indicated by holding up the appropriate number of fingers, as associated with the appropriate amount of time (e.g., five fingers to indicate five minutes left to clean up).

To reinforce teachers' expectations that children sit on the carpet with a book following their completion of cleanup, one or both teachers provided children engaged in these expectations with contingent opportunities to serve as "helping hands". Contingent upon accepting the opportunity to serve as a "helping hand", one or both teachers directed children to centers in which other peers were still cleaning. Teachers presented children on the carpeted area with a mini visual schedule to further clarify the contingency between sitting on the carpet and the opportunity to serve as a "helping hand".

In addition to the implementation of antecedent and preventative visual supports, Teacher B and her assistant implemented consequent strategies to reinforce appropriate engagement, as well as to reduce occurrences of challenging behavior. Throughout the cleanup process, the teacher walked around to each center with "Polly Pickup" and provided occasional statements of descriptive praise to children actively cleaning their areas. Redirections were also delivered to children, contingent upon engaging behaviors incompatible with expectations (e.g., walking within or moving toward areas beyond the boundaries of designated centers, etc.). In addition to verbal redirections, teachers used supplemental mini visual schedules to remind children of teacher expectations, contingent upon exhibiting behaviors incompatible with engagement.

*Teacher C: Intervention Strategy Selection.* As per Teacher C's expectations for children during the *circle to centers* transition, strategies selected included the use of an auditory cue following morning circle activities and prior to the teacher's initiation of the process of selecting centers (i.e., ringing a bell), a mini-schedule depicting illustrated

expectations, center necklaces and stop signs to indicate center availability, and supplemental visuals to increase children's engagement throughout.

Consequent strategies included the delivery of descriptive praise for children who followed the steps of the routine. Redirections were also implemented for children exhibiting behaviors incompatible with teacher expectations.

Teacher C began the targeted transition by ringing a bell, contingent upon which she explained the association between the bell and her expectation that, prior to choosing centers, children sit cross-legged with eyes on her. The rationale for use of the bell, beyond that of serving as an auditory cue, was that the sound of the bell would become a conditioned stimulus for the expectation that children sit with their eyes oriented toward the teacher. As such, Teacher C was observed to ring the bell both at the beginning of the transition and throughout, so as to reestablish the contingency between the sound of the bell and her expectations for the children. This reminder was occasionally supplemented with a mini visual, depicting illustrations associated with Teacher C's expectations.

After having gained the full attention of all children, the teacher explained the rationale for the center necklaces. The necklaces were made up of laminated photographs of each center, attached to a piece of yarn large enough to fit comfortably around a child's neck. The necklaces were hung on hooks, above which were larger photographs of the corresponding centers. The number of necklaces for each center corresponded with the number of spaces available in that particular center, having served as visual reminders to children of the number of spaces designated for each center. As centers became full, Teacher C placed a stop sign over the associated photograph of the center to indicate that it was no longer available for selection. The presence of stop signs and necklaces

therefore became conditioned stimuli for differentiating between unavailable and available centers, respectively.

After explaining the association between center necklaces, stop signs, and the availability of centers, Teacher C pulled photographs of children, each attached to a colored craft stick, from a paper bag. The photograph chosen from the bag corresponded to the child chosen to select a center. During baseline sessions, topographies of behaviors incompatible with classroom engagement included eye contact and body orientation away from the teacher or child selecting the center, as well as getting up from seated positions, prior to teacher-initiated instructions to do so. The use of children's photographs was instituted as a method to increase children's engagement in the selection of centers.

After each child selected a center, Teacher C directed the child to remove the corresponding necklace, place it over his or her neck, and led the child to the chosen center. To reinforce children's understanding of available and unavailable centers, the teacher provided occasional reviews throughout. In doing so, she pointed to and verbally labeled each center and prompted children to discriminate between available and unavailable centers. In addition to providing children with a visual representation of the contingency between stop signs and unavailable centers, as well as between necklaces and remaining centers, these prompted reviews were intended to reinforce the engagement of remaining children in the selection of centers.

The area in which children sat during the *circle to centers* transition was the same as that in which the "construction" center was located. The researcher suggested that the teacher designate an area for children who chose this center to wait. The teacher attached laminated pieces of paper onto the floor, each with pictures of items associated with

construction, the function of which was to serve as environmental cues for children as to where to sit while waiting for remaining children to select their centers.

Consequent strategies included those related to providing descriptive praise to children following teacher expectations, as well as redirections to those children exhibiting behaviors incompatible with engagement during the *circle to centers* transition. In addition to providing verbal redirections to children, Teacher C also occasionally used the mini visual schedule to prompt children to sit cross-legged with eyes oriented toward her. For children having difficulty moving toward and staying within the boundaries of their chosen centers, Teacher C occasionally used the center necklaces as visual reminders to children of the expectation that, after selection, they walk directly to their chosen centers and remain there throughout the duration of play.

#### General Procedures

##### *Baseline*

Following *initial consultation* procedures and prior to *intervention strategy selection*, baseline probes were conducted in each of the three participating classrooms during transitions targeted for intervention. Teachers were instructed to conduct the targeted routines as they normally would, without further instruction from the researcher. Baseline probes were conducted three to five days a week with each teacher (or assistant teacher) until achieving stable or decreasing trends in mean percent classroom engagement and/or stable or increasing trends in percent occurrence of challenging behavior.

## *Intervention*

*Informal In-Vivo Coaching.* Following baseline and *intervention strategy selection* procedures, the researcher conducted one in-vivo coaching session with each teacher, during which they were guided in the implementation of the selected interventions, as applied to transitions targeted for intervention. In-vivo coaching sessions included procedures similar to those outlined in the coaching literature (e.g., Rush, Shelden, & Hanft, 2003). Using scripts developed from strategies selected during *intervention strategy selection* procedures, the researcher began by modeling the correct implementation of individual strategies, with prompts to teachers to rehearse the modeled strategy. Following teachers' rehearsal of each strategy, the researcher provided descriptive praise for accurate (i.e., correct and complete) implementation, as well as corrective feedback for strategies implemented inaccurately (i.e., incorrect and/or incomplete).

Data were not collected during these initial coaching sessions, as the purpose of these sessions was simply to evaluate the extent to which the interventions selected were in fact contextually appropriate for each teacher and classroom, as well as to provide teachers with initial instruction as to implementation of components.

*Coaching.* Following *informal in-vivo coaching* sessions, teachers were instructed to implement the interventions during targeted transitions, independent of in-vivo coaching. Data collection during these sessions proceeded as during baseline, with the addition of treatment integrity data to document teachers' implementation of intervention components. Prior to these sessions, the researcher met with teachers to review scripts of strategies created as a product of *intervention strategy selection*, as well

as to provide an opportunity for questions and concerns regarding implementation. During debriefings following these sessions, the researcher provided teachers with verbal and written feedback, inclusive of praise for components implemented correctly and constructive feedback for components implemented incorrectly or incompletely. These debriefings also served to provide an opportunity to address any questions or concerns. *Coaching* continued until teachers achieved a minimum of three consecutive sessions with treatment integrity measures of at least 90%. Contingent upon achieving this criterion, *coaching* procedures were withdrawn entirely.

*Independent Implementation.* Following teachers' achievement of treatment integrity criterion (i.e., three consecutive sessions with treatment integrity measures of at least 90%), sessions were conducted with each teacher during targeted transitions. No additional coaching was provided during this phase. Treatment integrity data were taken throughout the *independent implementation* phase, for purposes of documenting teacher implementation of intervention components. Sessions were conducted with each teacher until achieving stable or increasing trends in mean percent classroom engagement and/or stable or decreasing trends in percent occurrence of challenging behavior.

Following the last session of *independent implementation* for each teacher, the researcher met with teachers to administer a social validity questionnaire, as well as to conduct *Consumer Satisfaction Interviews* with each teacher.

Results of systematic and visual analyses of dependent measures, as well as teachers' treatment integrity scores and responses to social validity questionnaires, are presented in Chapter three (i.e., Results).

## CHAPTER 3. RESULTS

The purpose of the following chapter is to present the results obtained from the current investigation. Outcomes of the dependent measures evaluated (i.e., classroom engagement and challenging behavior) will be presented. Following an evaluation of changes in dependent measures, a discussion of results obtained from teachers' treatment integrity data and responses to social validity questionnaires will be provided.

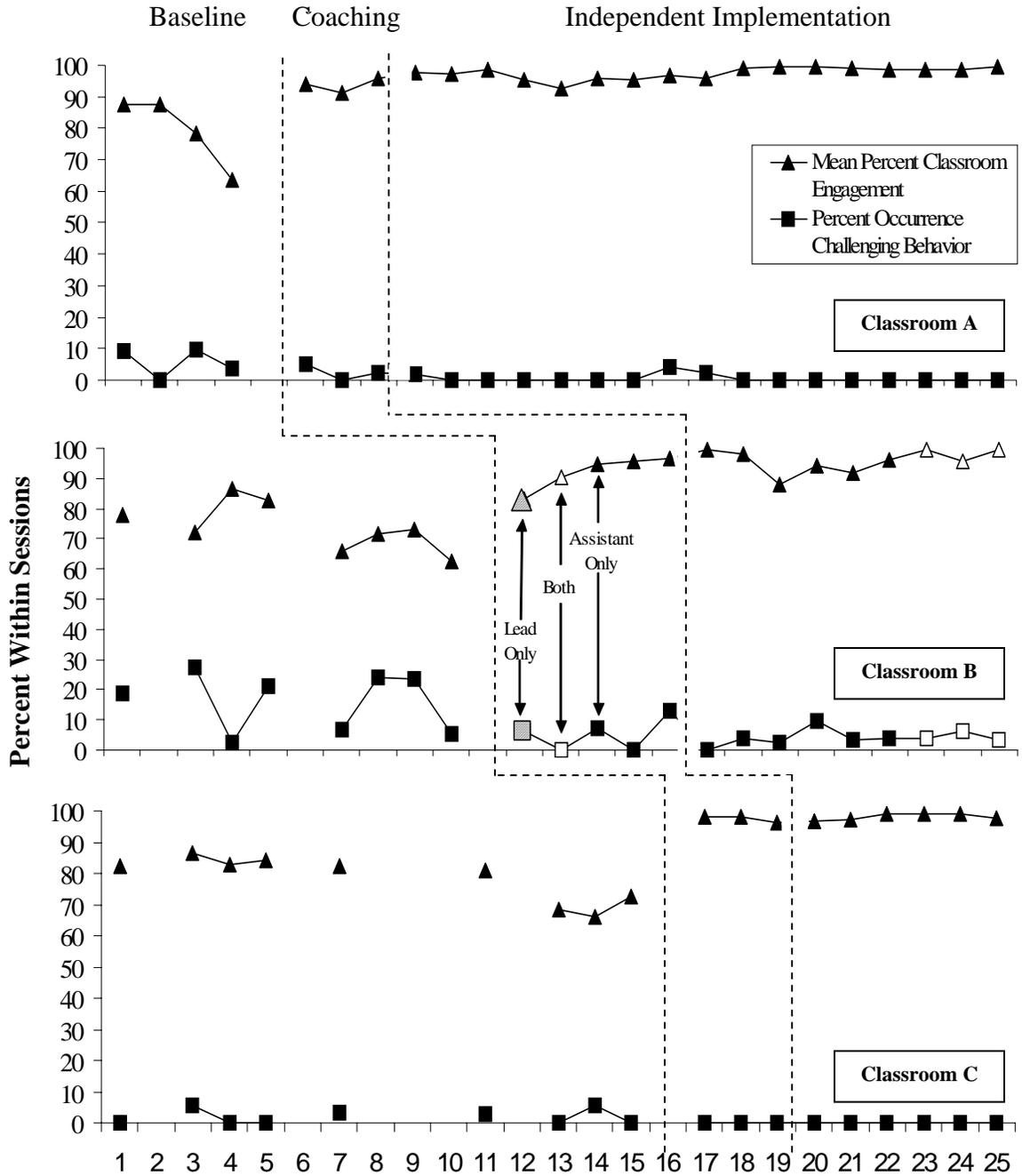
### Methods of Data Analysis

Data were analyzed using systematic behavioral observations, as well as via standardized methods of visual analysis. Analyses were those associated with changes in trend, level, and variability of dependent measures (Kazdin, 1982) across all phases of the study (i.e., *baseline*, *coaching*, and *independent implementation*). These analyses were conducted for all participating classrooms during each phase of the study, as applicable both to changes between classrooms and to changes observed within and across phases for each classroom. Determination of trends was based upon visual analyses of the data; variability was determined based upon ranges in dependent measures within phases; and level was determined based upon mean scores of dependent measures within phases.

Data for each of the three participating classrooms on mean percent classroom engagement and percent occurrence of challenging behavior are shown in Figure 1. (Refer to Appendix H for a table including information on the mean number of children present for each session of data collection, within and across participating classrooms.).

Figure 1.

*Mean Percent Classroom Engagement and Percent Occurrence of Challenging Behavior*



Note: *Informal in-vivo coaching* sessions are represented on the graphs of each participating classroom as blank spaces and synonymous with the first session of the *coaching* phase.

## Data Analyses of Changes in Dependent Measures

### *Classroom A*

Visual analyses of mean percent classroom engagement for Classroom A reveal a downward trend in baseline, a variable trend across *coaching* sessions, and an increasing and relatively more stable trend across *independent implementation* sessions.

The mean percent classroom engagement for Classroom A increased from *baseline* to both phases of intervention (i.e., *coaching* and *independent implementation*), with a mean of 79.3% across all *baseline* sessions, 93.7% across all *coaching* sessions, and 97.6% across all *independent implementation* sessions. Analyses of changes in level for classroom engagement measures indicate a minimum increase of 14.4% from *baseline* to *coaching* and *independent implementation* phases, with increases of 14.4% and 18.3%, respectively. Analyses of changes in variability of mean percent classroom engagement reveal smaller ranges between measures across sessions in both *coaching* (i.e., 91.1% to 95.9%) and *independent implementation* (i.e., 95.1% to 99.5%) phases, relative to the overall range of measures across sessions in *baseline* (i.e., 63.7% to 87.7%).

Data regarding changes in level and variability in measures of mean percent classroom engagement within and across phases for Classroom A are presented in Table

1.

Table 1.

*Changes in level and variability of classroom engagement within and across phases for Classroom A*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Baseline</i>	79.3%	(63.7%-87.7%)
<i>Coaching</i>	93.7%	(91.1%-95.9%)
<i>Independent Implementation</i>	97.6%	(95.1%-99.5%)

Visual examination of trend for percent occurrence of challenging behavior reveals a slightly decreasing, though variable, trend across *baseline* sessions, a relatively more stable and decreasing trend across *coaching* sessions, and a decreasing trend across *independent implementation* sessions. Though the slight decreasing trend across *baseline* sessions was not anticipated, measures were more variable in baseline, relative to trends during intervention phases (i.e., *coaching* and *independent implementation*).

Percent occurrence of challenging behavior for Classroom A decreased from *baseline* to phases of intervention (i.e., *coaching* and *independent implementation*) with a mean of 5.7% across all sessions of *baseline*, 2.4% across all *coaching* sessions, and 0.5% across all *independent implementation* sessions. Analyses of changes in level for Classroom A's percent occurrence of challenging behavior reflect a minimum reduction of 3.3% from *baseline* to *coaching* and *independent implementation* phases, with reductions of 5.2% and 3.3%, respectively. Analyses of changes in variability of percent occurrence of challenging behavior reveal smaller ranges between measures across both *coaching* (i.e., 0.0% to 5.1%) and *independent implementation* (i.e., 0.0% to 4.1%) phases, relative to the overall range of measures observed across sessions in *baseline* (i.e., 0.0% to 9.8%).

Data regarding changes in level and variability in measures of percent occurrence of challenging behavior within and across phases for Classroom A are presented in Table 2.

Table 2.

*Changes in level and variability of challenging behavior within and across phases for Classroom A*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Baseline</i>	5.7%	(0.0%-9.8%)
<i>Coaching</i>	2.4%	(0.0%-5.1%)
<i>Independent Implementation</i>	0.5%	(0.0%-4.1%)

Overall, analyses of classroom engagement data across phases for Classroom A reveal that the overall level in baseline was lower and relatively less stable than levels observed within both phases of intervention (i.e., *coaching* and *independent implementation*). Furthermore, analyses of challenging behavior data indicate that the overall level in *baseline* was higher and relatively less stable than levels observed within both intervention phases.

*Classroom B*

Visual analyses of trend in mean percent classroom engagement measures for Classroom B reveal a decreasing trend in *baseline*, an increasing trend across *coaching* sessions, and an increasing trend across *independent implementation* sessions.

The mean percent classroom engagement for Classroom B increased from *baseline* to phases of intervention (i.e., *coaching* and *independent implementation*), with mean a percent of 74.0% across all *baseline* sessions, 91.9% all across *coaching* sessions, and 96.0% across all *independent implementation* sessions. Analyses of changes in level for mean percent classroom engagement indicate a minimum increase of 17.9% from *baseline* to *coaching* and *independent implementation*, with increases of 17.9% and 22.0% respectively. Analyses of changes in variability of mean percent classroom engagement reveal smaller ranges between measures across sessions in both *coaching*

(i.e., 83.3% to 96.8%) and *independent implementation* (i.e., 88.1% to 99.7%) phases, relative to the overall range of measures across sessions in *baseline* (i.e, 62.4% to 86.4%).

Data regarding changes in level and variability in measures of mean percent classroom engagement within and across phases for Classroom B are presented in Table 3.

Table 3.

*Changes in level and variability of classroom engagement within and across phases for Classroom B*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Baseline</i>	74.0%	(62.4%-86.4%)
<i>Coaching</i>	91.9%	(83.3%-96.8%)
<i>Independent Implementation</i>	96.0%	(88.1%-99.7%)

Visual analyses of percent occurrence of challenging behavior for Classroom B reveal a variable trend in *baseline* and relatively stable and decreasing trends across intervention phases (i.e., *coaching* and *independent implementation*).

Percent occurrence of challenging behavior for Classroom B decreased from *baseline* to phases of intervention (i.e., *coaching* and *independent implementation*), with a mean of 16.1% across all sessions of *baseline*, 5.3% across all *coaching* sessions, and 3.8% across all *independent implementation* sessions. Analyses of changes in level for percent occurrence of challenging behavior indicate a minimum reduction of 10.8% from *baseline* to *coaching* and *independent implementation*, with reductions of 10.8% and 12.3% respectively. Analyses of changes in variability of percent occurrence of challenging behavior reveal smaller ranges between measures across sessions in both

*coaching* (i.e., 0.0% to 13.0%) and *independent implementation* (i.e., 0.0% to 9.5%) phases, relative to the overall range of measures across sessions in *baseline* (i.e., 2.3% to 27.5%).

Data regarding changes in level and variability for percent occurrence of challenging behavior within and across phases for Classroom B are presented in Table 4.

Table 4.

*Changes in level and variability of challenging behavior within and across phases for Classroom B*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Baseline</i>	16.1%	(2.3% - 27.5%)
<i>Coaching</i>	5.3%	(0.0%-13.0%)
<i>Independent Implementation</i>	3.8%	(0.0%-9.5%)

Overall, analyses of data across conditions for Classroom B reveal that overall level of classroom engagement was lower and relatively more variable within *baseline* than levels within intervention phases of the study (i.e., *coaching* and *independent implementation*). Analyses of changes in percent occurrence of challenging behavior indicate that overall level in *baseline* was higher and relatively more variable than levels observed within intervention phases.

#### *Classroom C*

Visual analyses of mean percent classroom engagement measures for Classroom C reveal decreasing trends in *baseline*, a sharp increase from *baseline* to *coaching* sessions, and an increasing trend across *independent implementation* sessions.

The mean percent classroom engagement for Classroom C increased from *baseline* to phases of intervention (i.e., *coaching* and *independent implementation*), with a mean of 78.4% across all *baseline* sessions, 97.6% across *coaching* sessions, and 98.2%

across *independent implementation* sessions. Analyses of changes in level for mean percent classroom engagement indicate a minimum increase from *baseline* to *coaching* and *independent implementation* phases of 19.2%, with increases of 19.2% and 19.8%, respectively. Analyses of changes in variability of mean percent classroom engagement reveal smaller ranges between measures across sessions in both *coaching* (i.e., 96.5% to 98.2%) and *independent implementation* (i.e., 96.5% to 99.3%) phases, relative to the overall range of measures across sessions in *baseline* (i.e., 65.9% to 86.5%).

Data regarding changes in level and variability in measures of mean percent classroom engagement for within and across phases for Classroom C are presented in Table 5.

Table 5.

*Changes in level and variability of classroom engagement within and across phases for Classroom C*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Baseline</i>	78.4%	(65.9%-86.5)
<i>Coaching</i>	97.6%	(96.5%-98.2%)
<i>Independent Implementation</i>	98.2%	(96.5%-99.3%)

Visual analyses of percent occurrence of challenging behavior reveal a slightly variable trend in *baseline* and relatively stable trends across *coaching* and *independent implementation* sessions.

Percent occurrence of challenging behavior for Classroom C decreased from *baseline* to phases of intervention (i.e., *coaching* and *independent implementation*), with a mean of 1.9% across all sessions of *baseline*, and 0.0% across all sessions of both

*coaching* and *independent implementation* phases. Analyses of changes in level indicate an overall 1.9% reduction from *baseline* to *coaching* and *independent implementation* phases. Though seemingly modest, percent occurrence of challenging behavior was completely eradicated during both *coaching* and *independent implementation* phases of the study. Analyses of changes in variability of percent occurrence of challenging behavior reveal smaller ranges between measures across sessions in both *coaching* (i.e., 0.0%) and *independent implementation* (i.e., 0.0%) phases, relative to the overall range of measures across sessions in *baseline* (i.e., 0.0% to 5.6%).

Data regarding changes in level and variability for percent occurrence of *challenging behavior* within and across phases for Classroom C are presented in Table 6.

Table 6.

*Changes in level and variability of challenging behavior within and across phases for Classroom C*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Baseline</i>	1.9%	(0%-5.6%)
<i>Coaching</i>	0.0%	(0.0%)
<i>Independent Implementation</i>	0.0%	(0.0%)

Overall, analyses of classroom engagement data across phases for Classroom C reveal that the overall level in baseline was lower and relatively less stable than levels observed within both phases of intervention (i.e., *coaching* and *independent implementation*). Analyses of challenging behavior data indicate that the overall level in *baseline* was higher and relatively less stable than levels observed within both intervention phases.

*Summary of Results for Classrooms A, B, and C.* Analyses of changes in dependent measures across participating classrooms reveal that mean percent classroom

engagement and percent occurrence of challenging behavior changed in directions projected by the researcher, contingent only upon implementation of systematic transition strategies. The use of a multiple baseline probe was useful in demonstrating these experimental effects, both within and across the three participating classrooms. Overall, mean percent classroom engagement from *baseline* to intervention phases increased by a minimum of 14.4% across all three participating classrooms; and percent occurrence of challenging behavior decreased by a minimum of 3.8% across participating classrooms. Ranges in measures across sessions for phases of intervention (i.e., *coaching* and *independent implementation*) were less than those across sessions in *baseline*. Results therefore demonstrate the presence of a treatment effect, contingent upon implementation of the independent variable (i.e., systematic transition strategies).

#### Data Analyses of Treatment Integrity Measures

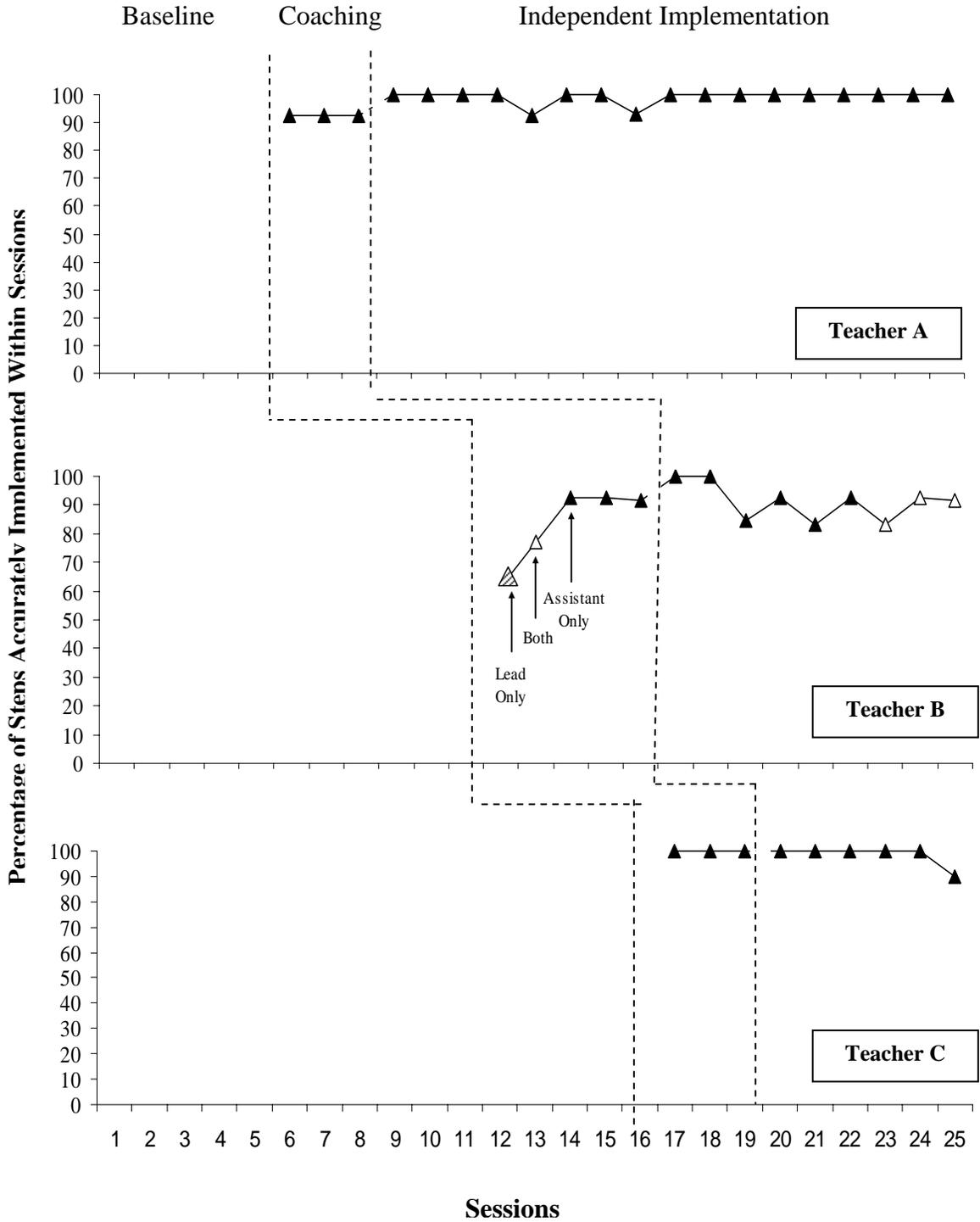
In the current investigation, treatment integrity measures were documented to monitor the implementation of the independent variable by each of the three participating teachers. The following are analyses in trend and level of treatment integrity scores for all three participating teachers, within intervention phases of the study (i.e., *coaching* and *independent implementation*). Treatment integrity data within and across all three participating teachers are presented in Figure 2.

##### *Teacher A*

Visual analyses of treatment integrity measures reveal a stable trend across *coaching* sessions and an increasing trend across *independent implementation* sessions.

Figure 2.

*Percentage of Systematic Transition Strategies Accurately Implemented Within and Across Intervention Phases for Teachers A, B, and C*



Analyses of overall level in treatment integrity scores reveal a mean across *coaching* sessions of 92.3% (range: 92.3%) and a mean across *independent implementation* sessions of 99.1% (range: 92.3% to 100%).

Level and variability of treatment integrity measures within intervention phases (i.e., *coaching* and *independent implementation*) for Teacher A are presented in Table 7.

Table 7.

*Level and variability of treatment integrity measures within intervention phases for Teacher A*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Coaching</i>	92.3%	(92.3%)
<i>Independent Implementation</i>	99.1%	(92.3%-100%)

*Teacher B*

Visual analyses of treatment integrity data for Teacher B reveal a sharp, increasing trend across *coaching* sessions and a relatively variable trend across *independent implementation* sessions.

Analyses of overall level in treatment integrity scores reveal a mean across *coaching* sessions of 82.9% (range: 61.5% to 92.3%) and a mean across *independent implementation* sessions of 91.1% (range: 83.3%-100%).

Level and variability of treatment integrity measures within intervention phases (i.e., *coaching* and *independent implementation*) for Teacher B are presented in Table 8.

Table 8.

*Changes in level and variability of treatment integrity measures within intervention phases for Teacher B*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Coaching</i>	82.9%	(61.5%-92.3%)
<i>Independent Implementation</i>	91.1%	(83.3%-100%)

*Teacher C*

Visual analyses of treatment integrity data for Teacher C reveal a stable trend across *coaching* sessions and a relatively variable trend across *independent implementation* sessions.

Analyses of overall level in treatment integrity scores reveal a mean across *coaching* sessions of 100% (range: 100%) and a mean across *independent implementation* sessions of 98.3% (range: 90.0% to 100.0%).

Level and variability of treatment integrity measures within intervention phases (i.e., *coaching* and *independent implementation*) for Teacher C are presented in Table 9.

Table 9.

*Changes in level and variability of treatment integrity measures within intervention phases for Teacher C*

<b>Phase</b>	<b>Mean Score</b>	<b>Range of Scores</b>
<i>Coaching</i>	100%	(100%)
<i>Independent Implementation</i>	98.3%	(90.0%-100%)

Data Analyses of Social Validation Measures

Following the final session of *independent implementation*, the researcher administered a social validity questionnaire to each of the three participating teachers. Items on the questionnaire were associated with teachers' perceptions of the goals, procedures, and outcomes of the study. Ratings were measured on a 3-point Likert-type scale, ranging from 1 (i.e., *Not well at all/Not Effective/Not Easy*) to 3 (i.e., *Very well/Very Effective/Very Easy*).

Overall, responses to social validity questionnaires across the three participating teachers reveal that the systematic transition strategies chosen were valid methods

whereby to increase classroom engagement and to decrease occurrence of challenging behavior across children in a preschool classroom. In addition to support of a functional relationship between projected changes in dependent measures and implementation of the strategies, teachers' responses were supportive of the ease and comfort with which strategies were implemented, as well as overall contextual fit with children and classroom environment. (Responses to social validity questionnaires within and across participating teachers are presented in Table 10.)

In addition to responses to social validity questionnaires, the researcher conducted direct interviews with each participating teacher, following the final data collection session of *independent implementation* for each teacher. The purpose of the interview was to inquire of teachers' perceptions of issues beyond those related to the overall effects of systematic transition strategies on dependent measures. The researcher conducted interviews with Teachers A, B, and C, as well as the assistant teacher for Classroom B, as she was present for the majority of data collection sessions.

General responses to *Consumer Satisfaction Interview* questions are discussed within the context of the following chapter (i.e., Discussion). The following chapter also discusses the aforementioned results in light of the research questions presented in Chapter 2 (i.e., Methodology), as well as of implications for future study.

Table 10.

*Social Validation Measures within and across Teachers A, B, and C*

<b>Question</b>	<b>Teacher A</b>	<b>Teacher B (Assistant Teacher's Score)</b>	<b>Teacher C</b>	<b>Overall Mean (Range)</b>
1. How well do you feel the strategies helped to improve children's appropriate involvement in transition activities (e.g., compliance, following directions) in completing steps of the routine?	3	3 (3)	3	3 (3)
2. How well do you feel the strategies addressed the overall goals you've set for the children in your classroom, particularly during the transitions you've targeted as most problematic?	3	3 (2)	3	2.8 (2-3)
3. How well do you feel the strategies helped to reduce children's overall incidents of problem behavior?	3	3 (3)	3	3 (3)
4. If you do in fact feel the strategies were effective in accomplishing goals thus far, how well do you think they will continue to work in the future?	3	3 (3)	3	3 (3)
5. Do you think the strategies were effective for all children, regardless of diversity (gender, developmental disability, ethnicity, race, nationality, etc.)?	3	2 (3)	3	2.8 (2-3)
6. How easy was it for you to use the strategies?	3	3 (2)	3	2.8 (2-3)
7. How well did the strategies fit with your classroom routine?	3	3 (3)	3	3 (3)
8. How well did the strategies fit with your teaching style?	3	3 (3)	3	3 (3)

Note: Scores were based on a 3-point Likert-type scale, with 1 = *Not Well/Effective/Easy at all*, 2 = *Moderately Well/Effective/Easy*; and 3 = *Very Well/Effective/Easy*.

## CHAPTER 4. DISCUSSION

The purpose of the following chapter is to address the research questions proposed in Chapter 2 (i.e., Methodology), based upon results obtained via visual and systematic analyses of dependent measures (i.e., mean percentages of classroom engagement and occurrence of challenging behavior) and supplemental measures (i.e., treatment integrity data and social validation measures).

### Discussion of Research Questions

#### *Research Question # 1*

Will the use of systematic transition strategies, as implemented by preschool classroom teachers, affect the classroom engagement of preschool children during targeted transitions from one activity to another?

The first research question addressed the extent to which the implementation of systematic transition strategies would affect the mean percent classroom engagement of children in three preschool classrooms. As postulated by the researcher, measures of mean percent classroom engagement would increase relative to *baseline* measures, contingent upon implementation of the universal intervention strategies during *coaching* and *independent implementation* phases. As validated by visual and systematic analyses of data, classroom engagement measures changed in the projected direction for all three participating classrooms.

Beyond evidence of a functional relationship between implementation of systematic transition strategies and projected changes in classroom engagement, it should be noted that the magnitude and variability of these changes differed across participating classrooms. Though only anecdotal, these differences may have been associated with a number of extraneous variables. These include, but are not limited to, the number of children present across sessions, the number of days between sessions, and the number of teachers present in the classroom during data collection sessions. Though a possible extraneous variable, the number of children present across sessions was relatively stable within all three participating classrooms, with insignificant differences across classrooms. Number of days between sessions was also relatively stable within and across classrooms and likely contributed little to variability in measures.

Given Teacher B's additional role as Director of the Head Start Center, the assistant teacher consented to serve as a participant of the study and therefore implemented strategies on those days during which the lead teacher was not present during data collection sessions. Furthermore, regardless of the number of teachers present in Classrooms A and C during data collection sessions, both Teachers A and C served as the primary behavior change agents, for all sessions of intervention.

### *Research Question #2*

Will the use of systematic transition strategies, as implemented by preschool classroom teachers, affect the challenging behavior of preschool children during targeted transitions from one activity to another?

The second research question addressed the extent to which the implementation of systematic transition strategies would affect the mean percent occurrence of challenging

behavior incidents across children in three preschool classrooms. Analyses of results indicated that, relative to *baseline* measures, mean percent occurrence of challenging behavior decreased within both *coaching* and *independent implementation* phases of the study, for all three participating classrooms.

Despite changes in the projected direction, it is important to note that the magnitude and variability of changes in the mean percent occurrence of challenging behavior were different across participating classrooms. The overall reduction across participating classrooms in the mean percent occurrence of challenging behavior from *baseline* to intervention phases was highest for Classroom B (i.e., 10.8%), relative to reductions across phases for Classrooms A and C (i.e., 3.3% and 1.9%, respectively). In addition to differences in the magnitude of changes in dependent measures, the data indicate that ranges across mean percentages of classroom engagement and occurrence of challenging behavior were lower within all phases of the study for Classrooms A and C, relative to Classroom B. This may suggest a possible association with differences in variability of measures across participating classrooms.

In consideration of these differences across participating classrooms, it should be noted that the topographies and dimensions of challenging behavior reported via consultations with teachers (i.e., *initial consultation* and *intervention strategy selection*), as well as observed during data collection sessions, were different across classrooms. In particular, mean percent occurrence of challenging behavior associated with the greatest reductions of variability and increases in level across *baseline* and intervention phases (i.e., *coaching* and *independent implementation*), was also representative of the classroom

(i.e., Classroom B) with the most intense topographies of challenging behavior (i.e., physical aggression and property destruction).

In addition to differences in topography of challenging behaviors reported and observed across participating classrooms, one additional extraneous variable may be that associated with the presence of additional children during data collection sessions. The frequency of this addition was highest for Classroom B, in that a child from Early Head Start was present in the classroom for six of the 22 sessions (i.e., 27.3%). Though only anecdotal, the majority of challenging behavior occurrences during these sessions (i.e., 18, 19, 20, 23, 24, and 25) appeared to have been attributable to this child.

#### Consumer Satisfaction Interviews: General Results

The content of direct interview questions was that associated with teachers' impressions of the overall consultation processes, general data collection procedures, and provision of coaching and feedback during phases of implementation (i.e., *coaching* and *independent implementation*). Interviews were conducted with Teacher A, Teacher B, Teacher B's assistant, and Teacher C.

In asking teachers to describe the extent to which they were comfortable with the presence of one or more data collectors in the classroom during transitions targeted for intervention, all reported that they did not feel as though data collection processes "got in the way of" or interfered with classroom routines or the ability of children to adhere to teacher expectations associated with targeted transitions. In asking teachers to describe their perceptions of the overall consultation processes (i.e., *initial consultation* and *intervention strategy selection*), all four expressed that it was "helpful" to speak to someone, both in regards to identifying problematic transitions to target for intervention,

as well as in selecting individualized systematic transition strategies. In relation to this, teachers expressed that past attempts to do so included the noncontingent delivery of tangible rewards (e.g., stickers), as well as generalized statements of redirection. While statements of descriptive praise and redirection were presented to teachers as strategies to deliver contingent upon child behavior, the intent of the present study was to expand upon the use of class-wide intervention strategies, beyond the one-dimensional use of consequent manipulations alone.

Embedded within the overall consultation process was the use of informal coaching procedures, particularly those associated with the delivery of feedback related to implementation of strategies. When inquiring about teachers' perceptions of these processes, overall comments suggested that feedback was provided in a "constructive" and "positive" manner. Teachers generally expressed limited "discomfort" in the withdrawal of coaching procedures, contingent upon the start of *independent implementation* phases of the study. This was noted both anecdotally, during occasional conversations with teachers throughout the course of the study, as well as during interview processes. All teachers communicated their appreciation for verbal and written feedback and expressed that any "discomfort" experienced following the withdrawal of feedback was "short-lived". With respect to accommodating systematic transition strategies with teachers' typical methods of teaching and overall classroom dynamics, teachers reported that implementation was "a good fit". All reported that they would continue to use the strategies with little or no modification, as well as to recommend use of the strategies to other teachers.

## Limitations and Implications for Future Study

Several noteworthy limitations exist for the present study. Systematic transition strategies selected and implemented in each of the three participating classrooms were designed and chosen on the basis of teachers' individual needs and appropriate environmental fit with classroom environments. While intentional, the prospect of designing interventions in this manner poses implications for the analysis of a functional relationship between implementation of systematic transition strategies and changes in dependent measures, both within and across participating classrooms. With individualization of strategy selection, the topography and overall number of strategies implemented were different across participating classrooms. Teacher A, for instance, chose to implement a visual schedule with the intent to increase the predictability of teacher expectations for children throughout the targeted transition (i.e., breakfast to morning language groups). While suggested as a possible strategy for Teachers B and C, both teachers chose not to implement the visual schedule as a component of the overall intervention. It was the intent of the researcher, however, to encourage selection of interventions based upon teacher preference and environmental fit to the targeted transitions, in an effort to reinforce implementation of intervention components. Thus, the experiment did not allow for an examination of the functional relationship between a particular transition strategy and dependent measures evaluated. In addition, teachers selected the transition routine that was most problematic for them; targeted transitions were therefore inconsistent across teachers. Future studies should evaluate the effects of the implementation of systematic transition strategies on classroom engagement and

occurrence of challenging behavior, as applied to the same or similar transitions across participating teachers.

As related to differences across participating classrooms, information reported by teachers during consultation processes (i.e., *initial consultation* and *intervention strategy selection*), as well as via direct observation sessions conducted by the researcher throughout the study, revealed a range of variability in topography and dimension (i.e., frequency and duration) of challenging behaviors commonly exhibited during targeted transitions. Classroom B, for instance, was associated with the most frequent and intense occurrences of challenging behavior, as commonly exhibited by the same child or small group of children. The general isolation of these occurrences to a particular child or small group of children suggests the need for individualized behavior interventions for targeted children in this classroom. While systematic transition strategies as a universal intervention are designed to affect the engagement and behavior of the entire classroom, they are not expected to be effective in addressing the challenging behavior of individual children.

The systematic transition strategies used in this study were multicomponent and comprised of a package of systematic transition strategies. Experimental analyses of the present investigation confirm a functional relationship between implementation of the whole package and contingent changes in dependent measures. Future studies should conduct analyses of the effects of the implementation of individual components on measures of classroom engagement and occurrence of challenging behavior. Past research, for instance, has provided some evidence for a functional relationship between teacher-child interactions and child engagement measures (e.g., Mahoney & Wheeden,

1999). In the present study, consequent strategies (e.g., descriptive praise and redirections) were employed by all teachers. Though implementation of these strategies was analyzed via documentation of treatment integrity data, the topographies and dimensions of these strategies were not systematically measured during data collection sessions. The implementation of descriptive praise, for instance, was documented as having occurred or not occurred throughout the duration of targeted transitions; however, the actual frequency with which praise was delivered was not documented. Treatment integrity of this particular measure only required that teachers provide statements of praise, the majority of which were to be descriptive in topography.

Perhaps secondary to a component analysis of the effects of systematic transition strategies on classroom engagement and occurrence of challenging behavior is the need to evaluate the relationship between the extent to which behavior change agents accurately implement intervention strategies (i.e., treatment integrity) and concomitant changes in dependent measures. While the researcher of the current study evaluated the extent to which teachers' implemented the universal intervention strategies with integrity, the direct relationship between accurate (i.e., correct and complete) implementation and measures of classroom engagement and occurrence of challenging behavior was not systematically evaluated or defined in the current study. The rationale for documentation and evaluation of treatment integrity measures was based upon the need to monitor teachers' implementation so as to determine appropriate points at which to fade coaching procedures, as is common to consultation in applied settings. Regarding the establishment of a functional relationship between measures of treatment integrity and the extent to which an intervention is effective, future studies should provide a more rigorous

component analysis of intervention strategies implemented, and the effects of specified implementation on possible treatment effects.

An additional limitation of the present study is that related to the lack of follow-up or maintenance data. Given the time constraints of the current study, as well as Teacher C's impending plans to change occupations, the researcher chose not to continue evaluation of intervention effects. Furthermore, generalization may have been limited in that evaluation of systematic transition strategies on classroom engagement and occurrence of challenging behavior was conducted across children in three preschool classrooms, all within the same Hillsborough County Head Start Center. Future research should evaluate these effects across multiple classrooms and preschools.

#### Summary and Conclusions

Even given the aforementioned limitations and implications for future research, results of the current investigation provide support for a treatment effect and thus a functional relationship between implementation of systematic transition strategies and increased measures of classroom engagement and reduced occurrences of challenging behavior in three Head Start preschool classrooms. In addition to systematic and visual analyses of data, evidence for a functional relationship was provided via teachers' responses to social validity questionnaires, as well as through responses to *Consumer Satisfaction Interviews*. The individualization of strategy selection for each of the three participating teachers, as relevant to functional and environmental fit to targeted transitions, may provide additional support for the importance of contextual fit, as embedded in processes of consultation with preschool teachers.

Beyond a preliminary demonstration of a functional relationship between

implementation of systematic transition strategies and projected changes in dependent measures (i.e., increased classroom engagement and reduced occurrences of challenging behavior), the purpose of the present study was to extend the current knowledgebase associated with the application of multi-tiered approaches to early childhood interventions. Out of this multi-tiered approach, the *Teaching Pyramid* (Fox et al., 2003) was created as a hierarchical model intended to support all children at the universal level, children at-risk for developing patterns of challenging behavior, and children in need of individualized supports. The model is founded on practices of promotion, prevention, and intervention (Hemmeter, Ostrosky, & Fox, 2006), as conducive to promoting the social-emotional competence of young children and addressing challenging behavior.

Systematic transition strategies are among the interventions outlined in the first tier of practices (i.e., universal interventions for all children), presented in the literature as essential to classroom management and promoting young children's engagement. In an effort to expand upon the current knowledgebase regarding the efficacy of these class-wide strategies, the current investigation examined whether the implementation of systematic transition strategies would produce an observable impact on young children's engagement in classroom activities and occurrences of challenging behavior.

Though preliminary, this study offers some evidence of a functional relationship between implementation of systematic transition strategies and increased measures of child engagement, as well as reduced occurrences of challenging behavior. Furthermore, this study contributes to research efforts to identify evidence-based practices that may be implemented by teachers in a preschool classroom, with the intent to foster environments

conducive to overall social-emotional development and increased engagement in academic and pro-social activities.

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APPENDIX A  
MEASUREMENT TOOLS

APPENDIX A (CONTINUED)

Sample Data Sheet

Date: \_\_\_\_\_ Primary Data Collector: \_\_\_\_\_ Reliability Data Collector: \_\_\_\_\_

Teacher: \_\_\_\_\_ Session #: \_\_\_\_\_ Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

Number of Children Present (at onset): \_\_\_\_\_

Interval/ Percent Engaged	Enter(+) Exit (-) (#)	Cannot Score (#)	Number Engaged	Occurrence of Challenging Behavior	Interval/ Percent Engaged	Enter(+) Exit (-) (#)	Cannot Score (#)	Number Engaged	Occurrence of Challenging Behavior
1				Yes	31				Yes
2				Yes	32				Yes
3				Yes	33				Yes
4				Yes	34				Yes
5				Yes	35				Yes
6				Yes	36				Yes
7				Yes	37				Yes
8				Yes	38				Yes
9				Yes	39				Yes
10				Yes	40				Yes
11				Yes	41				Yes
12				Yes	42				Yes
13				Yes	43				Yes
14				Yes	44				Yes
15				Yes	45				Yes
16				Yes	46				Yes
17				Yes	47				Yes
18				Yes	48				Yes
19				Yes	49				Yes
20				Yes	50				Yes
21				Yes	51				Yes
22				Yes	52				Yes
23				Yes	53				Yes
24				Yes	54				Yes
25				Yes	55				Yes
26				Yes	56				Yes
27				Yes	57				Yes
28				Yes	58				Yes
29				Yes	59				Yes
30				Yes	60				Yes

APPENDIX A (CONTINUED)

Treatment Integrity Checklist for Teacher A

Please check a Yes (Y) or No (N) for the following. To score a “Yes”, the entire step must have been completed appropriately (i.e., accurately and consistently). Check N/O if the opportunity is not presented for the teacher to engage in a particular step.

	Date: _____ Primary Data collector: _____ _____	Session #: _____ Reliability Data Collector:	Y	N	N/O
1	The <u>colored footprints</u> are down on the floor, forming what is referred to as “the train”.				
2	There is a <u>bin of library books</u> at the center of each carpeted area.				
3	The <u>circle seat pictures</u> are down on each carpeted area.				
4	The <u>train tickets</u> are out and in an area accessible to ALL children (i.e., near the trashcan).				
5	The <u>visual schedule</u> is posted on the inside of the front door or in an area of the classroom visible to and at eye level to ALL children (i.e., from their breakfast tables).				
6	The teacher <u>reviews the visual schedule</u> with the children, prior to giving the first verbal cue. <i>This “review” should include both verbal explanations of the steps of the routine, as well as occasional opportunities/prompts to the children to repeat the expectations.</i>				
7	The teacher provides a <u>verbal cue, prior to calling the first table to get up from breakfast</u> (e.g., “In five minutes, I’m going to call the first table to get up!”)				
8	As children get to the train, the teacher takes their train tickets and <u>directs children to stand on one of the colored sets of footprints on the floor.</u>				
9	There are <u>no more than four children on the train at one time.</u> <i>Score a “no” if, at any time during the session, there are more than four children on the train at once.</i>				

APPENDIX A (CONTINUED)

Treatment Integrity Checklist for Teacher A (Continued)

10	<p>When children are <u>done brushing teeth</u>, the teacher instructs them to:</p> <ol style="list-style-type: none"> <li>1. get a book from the bin on their assigned carpeted area,</li> <li>2. find their picture, and</li> <li>3. sit criss-cross applesauce on their picture (with their book) until it's time for language</li> </ol> <p><i>The majority of these directives must include <u>all three expectations</u> in order score as "yes".</i></p>			
11	<p>The teacher provides a <u>verbal cue prior to beginning language</u> (e.g., "Three more minutes, then it's time to put your books in the bin and get ready for language!")</p>			
12	<p>The teacher provides <u>descriptive praise</u> to children who are following the steps of the routine (e.g., "Wonderful standing on the train and brushing teeth, Hannah!").</p> <p><i>The majority of praise statements must be <u>descriptive</u> in order to score as "yes".</i></p>			
13	<p>The teacher <u>redirects</u> children who appear to be having difficulty with any of the steps of the routine.</p> <p><i>The majority of these redirections must clearly indicate the teacher's expectation in positive terms in order to score a "yes" (i.e., what TO do, vs. what NOT to do).</i></p>			

Treatment Integrity (%) = Steps implemented accurately (i.e., correctly and completely) divided by the total number of opportune steps, multiplied by 100 to yield a percentage

APPENDIX A (CONTINUED)

Treatment Integrity Checklist for Teacher B

Please check a Yes (Y) or No (N) for the following. To score a “Yes”, the entire step must have been completed appropriately (i.e., accurately and consistently). Check N/O if the opportunity is not presented for the teacher to engage in a particular step.

	Date: _____ Primary Data collector: _____	Session #: _____ Reliability Data Collector: _____	Y	N	N/ O
1	<p><u>Prior to giving the first verbal cue</u>, the teacher ensures that she has all her materials prepared and ready to use (i.e., timer, five-minute glove, “Polly Pickup finger puppet, CD set on “repeat” to play song 14)</p>				
2	<p><u>Prior to announcing clean up</u>, the teacher provides a verbal cue that specifies the amount of time children have left to play, prior to the start of cleanup (e.g. “You have five more minutes left to play!”). <i>The verbiage used to do so must <u>exclude</u> mention of “cleanup time”, in order to score a “yes”.</i></p>				
3	<p><u>After giving the verbal cue</u>, the teacher <u>walks around to each center</u> and directs each child to tell “Polly-Pickup” what he or she is planning to pickup when “cleanup time” begins.</p>				
4	<p>When it’s time to clean up, the teacher <u>explains the rules of the “beat the buzzer” game</u> (i.e., The children are reminded that they are to clean up their own areas, within the five minutes of time allotted.).</p>				
5	<p>The teacher <u>explains the use of the five-minute glove</u> (e.g., “During cleanup time, Polly and I are going to be walking around to each center with this glove. The glove will tell you how many minutes you have left to clean up...”)</p>				
6	<p>After the rules of the game are reviewed, the teacher <u>reminds the children of what they are to do after they’re finished cleaning up their areas</u>:</p> <p>1-Put your nametag on the counter. 2-Get a book. 3- Sit criss-cross applesauce with your book until it’s time for circle. <i>This explanation must include <u>all three</u> expectations, as well as prompt(s) to the children to repeat the expectations, in order score a “yes”.</i></p>				
7	<p>After giving children the directive to begin cleanup, the teacher <u>starts the timer</u>.</p>				

APPENDIX A (CONTINUED)

Treatment Integrity Checklist for Teacher B (Continued)

8	The “ <u>cleanup-themed</u> ” music is playing in the background.			
9	During cleanup, the teacher walks around the room with the <u>five-minute glove</u> and uses the glove to indicate the amount of time children have left to finish cleaning their areas.			
10	During cleanup, the teacher walks around to each center to provide <u>descriptive praise</u> to children actively cleaning their areas (e.g., “Sally, great job putting the blocks on the shelf!”) <i>The majority of praise statements must be <u>descriptive</u> in order to score a “yes”.</i>			
11	During cleanup, the teacher walks around to each center to provide <u>redirection</u> to those children having difficulty cleaning up their areas. <i>The majority of these redirections must clearly indicate the teacher’s expectation in positive terms, in order to score a “yes” (i.e., The teacher tells the children what TO do, vs. what NOT to do).</i>			
12	As children finish cleaning their areas, the teacher <u>directs those finished early and following teacher expectations to serve as “helping hands” for children in need of help.</u> <i>This may be done with or without the use of the First/Then visual (i.e., “First, ‘sit criss-cross with a book’; then, ‘be a helping hand’.”).</i>			
13	For children who arrive to the carpet early and are not serving as “helping hands”, the teacher <u>directs them to get a book and sit criss-cross on the carpet until it’s time for circle.</u> <i>This may be done with or without the use of the First/Then visual (i.e., “First, ‘get a book’; then, ‘sit criss-cross applesauce’.”).</i>			

Treatment Integrity (%) = Steps implemented accurately (i.e., correctly and completely) divided by the total number of opportune steps, multiplied by 100 to yield a percentage

APPENDIX A (CONTINUED)

Treatment Integrity Checklist for Teacher C

Please check a Yes (Y) or No (N) for the following. To score a “Yes”, the entire step must have been completed appropriately (i.e., accurately and consistently). Check N/O if the opportunity is not presented for the teacher to engage in a particular step.

	Date: _____ Primary Data collector: _____	Session #: _____ Reliability Data Collector: _____	Y	N	N/O
1	At the end of circle, the teacher transitions children into choosing centers by providing an <u>auditory cue (i.e., ringing the bell)</u> and announces that “it’s time to choose centers!”.				
2	The teacher <u>reminds children of the expectation that they are to be sitting “criss-cross applesauce”, with eyes on her</u> , before she is able to call the first child to choose centers. <i>This may be done with or without the supplemental use of the First/Then visual (i.e., “First, ‘sit criss-cross with eyes on the teacher’; then, ‘choose centers’.”).</i>				
3	The teacher provides <u>descriptive praise</u> for children sitting “criss-cross”, with eyes on her. <i>The majority of praise statements must be <u>descriptive</u> in order to score a “yes”.</i>				
4	The teacher <u>redirects</u> those children who appear to be having difficulty with the expectation that they are to be sitting “criss-cross”, with eyes on her. <i>The majority of these redirections must clearly indicate the teacher’s expectation in positive terms in order to score as “yes” (i.e., what TO do, vs. what NOT to do).</i>				
5	The teacher <u>explains the association between the number of center necklaces on the hooks and the number of children allowed in each center</u> , as well as the significance of placing stop signs over centers to differentiate available and unavailable centers.				
6	The teacher <u>uses pictures of the children, attached to craft sticks, to choose the order in which children choose centers</u> . <i>The teacher may allow a child who is following her expectations to serve as a “helper” in pulling a picture from the bag.</i>				
7	After a child chooses a center, the teacher instructs the child to <u>remove the appropriate center necklace from its corresponding hook</u>				

APPENDIX A (CONTINUED)

Treatment Integrity Checklist for Teacher C (Continued)

	and <u>directs the child (either verbally or by gesturing/pointing) to move in the direction of his or her chosen center.</u>			
8	The teacher places <u>stop signs</u> over centers that are no longer available and <u>reviews available and unavailable centers with the children remaining.</u>			
9	The teacher <u>directs children who choose to go to the “construction” center to sit on the spots designated for these children, located on the boundaries of the carpeted area.</u>			
10	After all children have chosen a center, the teacher provides <u>descriptive praise</u> to those who are within the boundaries of their center. <i>The majority of praise statements must be <u>descriptive</u> in order to score a “yes”.</i>			
11	After all children have chosen a center, the teacher <u>redirects</u> those children who appear to be having difficulty finding their center. She may do this verbally and/or by pointing to the child’s center necklace as a reminder of where the child has chosen to go.			

Treatment Integrity (%) = Steps implemented accurately (i.e., correctly and completely) divided by the total number of opportune steps, multiplied by 100 to yield a percentage

APPENDIX A (CONTINUED)

Social Validity Questionnaire

Teacher: \_\_\_\_\_

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

*Please circle the number that corresponds to your response on each of the following.*

1. How well do you feel the strategies are helping to improve children's appropriate engagement in transition activities, as related to their compliance in following the steps of the routine?

*1 = Not well at all                      2 = Moderately well                      3 = Very Well*

2. How well do you feel the strategies are helping to reduce children's overall incidents of problem behavior?

*1 = Not well at all                      2 = Moderately well                      3 = Very Well*

3. How well do you feel the strategies address the overall goals you've set for the children in your classroom, particularly during the transitions you've targeted as most problematic?

*1 = Not well at all                      2 = Moderately well                      3 = Very Well*

4. If you do in fact feel the strategies have been effective in accomplishing goals thus far, how well do you think they will continue to work in the future?

*1 = Not well at all                      2 = Moderately well                      3 = Very Well*

5. Do you think the strategies were effective for all children, regardless of diversity (gender, developmental disability, ethnicity, race, nationality, etc.)?

*1 = Not at all Effective                      2 = Moderately Effective                      3 = Very Effective*

6. How easy was it for you to use the strategies?

*1 = Not at all easy                      2 = Somewhat easy                      3 = Very easy*

7. How well do the strategies fit with your classroom routine?

*1 = Not well at all                      2 = Moderately well                      3 = Very Well*

8. How well did the strategies fit with your teaching style?

*1 = Not well at all                      2 = Moderately well                      3 = Very Well*

## APPENDIX A (CONTINUED)

### Consumer Satisfaction Interview Questions

1. How did you feel having someone in the room collecting data while you lead class activities? Describe your comfort level with this, as well as how you feel it may or may not have affected you as a teacher.
2. Please describe your overall impressions of the consultation process. (To what extent were you comfortable speaking to someone about difficult transitions, as well as with having someone help you select strategies to apply to these transitions? What about this process made you feel this way? Would you recommend this process to another teacher? Would you go through the process again yourself?)
3. What were your perceptions of having the consultant provide feedback on your use of the suggested strategies? How did it feel to have this feedback withdrawn after the first few sessions?
4. In considering the expectations you'd like children to follow during the routine you selected as problematic, please describe whether you feel the strategies you selected have affected your children and classroom environment. Please describe how these changes, if any, have affected you as a teacher.
5. Describe changes, if any, you've seen in the problem behavior of children since applying the strategies.
6. Describe how the transition strategies did or did not fit with your teaching style and overall classroom environment. Describe your comfort level and confidence in using the strategies. (What were some difficulties you experienced in using the strategies? What were some successes?)
7. Describe some things you've tried in the past, in order to help children follow your expectations. How do these things compare and contrast with the transition strategies you've recently applied to you classroom (effectiveness, ease of use, fit with your teaching style and classroom environment)?
8. Did you find that any of the strategies were more effective for some children than others? If so, please describe.
9. Do you plan to continue using the strategies? If so, are there any changes you would make to any of the strategies?

APPENDIX B

OPERATIONAL DEFINITIONS OF CLASSROOM  
ENGAGEMENT FOR CLASSROOM A

<b>Expectation</b>	<b>Scoring Instructions for Classroom Engagement</b>
<p>1. Children are to remain at their breakfast tables until Teacher A calls them to get up and push in their chairs.</p>	<p>1. Score children who have not yet been called to get up as engaged if they are sitting in their chairs with their entire bottoms touching their chairs, both feet on the floor, and all four legs of the chair touching the floor.</p> <p>Do not score children as engaged if they are doing one or more of the following:</p> <ul style="list-style-type: none"> <li>-standing and/or orienting their bodies in such a way that their entire bottoms are not touching their chairs</li> <li>-standing and/or orienting their bodies in such a way that both feet are not touching the floor</li> <li>-moving their chairs in such a way that all four legs of their chairs are not touching the floor</li> </ul>
<p>After getting up from the table, the children are to exhibit the following behaviors (i.e., items 2 through 4):</p>	<p>Score children who have been called to get up as engaged if they are doing one or more of the following (i.e., items 2 through 4):</p>
<p>2. push their chairs under the table;</p> <p>3. throw their trash into the trashcan;</p>	<p>2. standing up from their assigned chairs and/or pushing their chairs under their tables;</p> <p>Do not score children as engaged if they are remaining seated in their chairs, with entire bottoms touching chairs)</p> <p>3. walking back and forth between the trashcan and tables with used breakfast materials and/or throwing soiled materials into the trash receptacle;</p>

	<p>During <i>coaching</i> and <i>independent implementation</i> phases of the study, include those children walking toward and/or removing “train tickets” from the designated box, located on the bookshelf within five feet of the trashcan.</p>
4. empty their dirty silverware and pour any leftover milk into the sink;	4. walking toward the sink to deposit dirty silverware and to drain partially filled milk containers and/or depositing silverware and leftover milk into the sink;
5. stand on the “train” (i.e., a line formed outside the bathroom door) to brush teeth;	<p>5. walking toward or standing on the “train” and exhibiting one or more of the following behaviors:</p> <ul style="list-style-type: none"> <li>-retrieving their toothbrushes and/or cups from the table, positioned near the class restroom</li> <li>-holding their toothbrush and cup; and/or</li> <li>-brushing teeth with cup in hand;</li> </ul> <p>(Children may be facing forward or backward but must be standing within two feet of other children on the “train”.)</p> <p>During <i>coaching</i> and <i>independent implementation</i> phases, include those children handing Teacher A a “train ticket”.</p>
6. place toothbrushes back onto the toothbrush rack;	<p>6. walking toward the table on which toothbrushes are kept and/or placing their toothbrushes back onto the rack on the table;</p> <p>For items 3-6, do not score children as engaged if they standing and/or moving within areas of the room other than those between breakfast tables, the trash receptacle,</p>

7. get a book;	<p>7. walking toward one of two bookshelves to get a book, each located within the boundaries of the two carpeted areas and/or standing within the boundaries of the assigned carpeted areas. (The carpeted areas are those on which children are instructed to sit for the period of time between breakfast and language. There are two separate carpeted areas, each assigned to eight children.)</p> <p>During <i>coaching</i> and <i>independent implementation</i> phases of the study, include those children standing between the train and tables, receiving or waiting to receive instructions from Teacher A as to her expectations for the period of time following tooth brushing. Include also those children walking toward or getting a book from the bins located at the center of the carpeted areas.</p>
8. sit “criss-cross applesauce” with a book until language begins.	<p>8. sitting cross-legged with a book until Teacher A instructs children to place books back onto the shelves; (In order to score children as engaged, their eyes do not need to be oriented toward their books, but they must be holding a book and sitting with their entire bottoms touching the carpeted area. Children may talk with peers and adults during this time, as long as they are holding a book, their entire bottoms are touching the floor, and their entire bodies are within the boundaries of their assigned carpeted areas.)</p> <p>During <i>coaching</i> and <i>independent implementation</i> phases of the study, include those children sitting on their designated circle photographs and/or are sitting with their entire bottoms touching the floor.</p>

	<p>Do not score children as engaged if they are doing one or more of the following:</p> <ul style="list-style-type: none"> <li>-sitting and/or orienting their bodies in such a way that their entire bottoms are not touching the floor (e.g., laying on their backs, sides, stomachs, etc.)</li> <li>-sitting and/or orienting their bodies in such a way that their entire bodies are not within the physical boundaries of the carpeted area</li> </ul>
<p>9. put books away and “get ready” for language.</p>	<p>9. Score children as <i>engaged</i> if they are getting up and walking toward one of the two bookshelves and/or placing books back onto the bookshelves, contingent upon the teacher-initiated directive to “put books away”.</p> <p>During <i>coaching</i> and <i>independent implementation</i> phases of the study, include those children getting up from their circle seat pictures, moving toward the bins located at the center of the carpeted areas, and/or placing books back into the bins.</p> <p>Do not score children as engaged if they are doing one or more of the following:</p> <ul style="list-style-type: none"> <li>-remaining seated (i.e., entire bottoms touching the floor), with book in hand</li> <li>-sitting, standing, or moving in such a way that they are orienting their bodies away from the bookshelves</li> </ul>
<p>Data collection sessions for <i>breakfast to language</i> will begin with Teacher A’s verbal instruction to the first table to get up (e.g. Table number one, get up.”) and will end with all children in their appropriate language groups and Teacher</p>	

A's verbal initiation of discussion and activities associated with language (e.g. "What letter are we studying this week?").

Instructions for conducting the *Engagement Scan*:

Begin with the breakfast table in closest physical proximity to the area in which data collection is conducted. Begin with the child at that table in closest physical proximity and move from child to child in a clockwise direction.

\*Note that the breakfast tables and seats at which children sit will change on a daily basis. Prior to each session, data collectors will agree on the child with whom to initiate data collection. The order in which tables are scanned will also be discussed prior to each session.

As children are dismissed to brush teeth, scan children at tables, in the same pattern as that described above, and move from tables to areas of the classroom to which children move (i.e., areas between tables and the trashcan, the line on which children stood to brush teeth, the two carpeted areas on which children sat to look at books prior to the start of language activities).

For scans of children standing in line to brush teeth, begin with the child in the back of the line and move from child to child toward the front of the line.

Begin scans of children on the two carpeted areas with the carpet located furthest from the area in which data collection is conducted. Begin scans of children seated on the carpet with the child in closest physical proximity and continue around to other children in a clockwise direction.

\*Note that while carpeted areas on which children sit are consistent, children are not assigned to particular areas of the carpets. The child with whom to begin scans on the carpet will be discussed during each data collection session, as children arrive to the carpets.

APPENDIX C

OPERATIONAL DEFINITIONS OF  
CLASSROOM ENGAGEMENT FOR CLASSROOM B

<p>1. Children are to remain within the boundaries of their center, during the entire five minutes prior to cleanup.</p>	<p>1. When Teacher B (or the assistant teacher) announces that children have “five more minutes until cleanup”, score children as engaged if their entire bodies are within the boundaries of their appointed centers and they are either continuing play or beginning the cleanup process.</p> <p>During <i>coaching</i> and <i>independent implementation</i> phases of the study, include those children speaking with Teacher B (or the assistant teacher) about the items they plan to pick up. (This will occur following delivery of the verbal cue that children have “five minutes left to play”.)</p> <p>Do not score children as engaged if they are moving and/or stationed in areas of the classroom other than those within the boundaries of a center</p>
<p>2. When Teacher B (or the assistant teacher) announces that it is time to clean up, children are to remain within the boundaries of their own centers and pick up the toys and materials within those centers.</p>	<p>2. When Teacher B (or the assistant teacher) announces that it is time to clean up, score children as engaged if their entire bodies are within the boundaries of their chosen centers and they are actively “cleaning” their areas (i.e., picking toys and other materials off the floor; placing toys and others items back onto appropriate shelves or bins; hanging clothes back onto appropriate hooks, etc.).</p>

<p>When children are finished cleaning their areas, they are to exhibit the following behaviors (i.e., items 3 through 5):</p>	<p>Do not score children as engaged if they are moving and/or stationed in areas of the classroom other than those within the boundaries of a center</p> <p>Score children who have finished cleaning their areas as engaged if they are doing one or more of the following (i.e., items 3 through 5):</p>
<p>3. place their nametags on the counter,</p>	<p>3. walking toward the counter near the restroom to put their nametags away and/or actually placing their nametags onto the counter;</p>
<p>4. get a book;</p>	<p>4. walking toward one of three bookshelves and/or are in the process of removing a book from a bookshelf; (One of the three shelves is located within the carpeted area on which children sit for circle activities, and the other two are separating the math and art centers from the library center.)</p>
<p>5. sit “criss-cross applesauce” with their books until Teacher B announces that it is time for circle.</p>	<p>5. walking toward the carpeted area on which circle activities are conducted and/or are sitting on the carpeted area with their books. (Children’s eyes do not need to be oriented toward their books, but they must be holding a book and sitting with their entire bottoms touching the carpeted area and/or kneeling with knees touching the carpeted area. Children are permitted to talk with peers and adults during this time, as long as they are holding a book, their knees and/or bottoms are touching the floor, and</p>

	<p>their entire bodies are within the boundaries of the carpeted area.)</p> <p>During <i>coaching</i> and <i>independent implementation</i> sessions, include children standing and/or moving toward a center to serve as “helping hands” for other children cleaning their areas, contingent only upon being appointed by Teacher B (or the assistant teacher) to do so.</p>
<p>6. put books away and “get ready” for circle.</p>	<p>6. Score children as engaged if they are getting up and placing books back onto one of the three bookshelves, contingent upon the teacher-initiated directive to “put books away and get ready for circle”.</p> <p>*Do not score children as engaged if they are doing one or more of the following:          -remaining seated (i.e., entire bottoms touching the floor), with book in hand          -sitting, standing, or moving in such a way that they are orienting their bodies away from the bookshelves</p>
<p>Data collection sessions for <i>centers to circle</i> will begin with Teacher B’s (or the assistant’s) verbal cue as to the amount of time children have left to play (e.g. “You have five minutes left to play...”) and will end with all children seated on the carpet and teacher initiation of circle activities (e.g., “Good morning class; It’s time for circle.”)</p>	
<p>Instructions for conducting the Engagement Scan:          The scan will begin with the child or children in one particular center, as discussed prior to data collection sessions, and will continue in a clockwise direction to children in the nine remaining centers. As children finish cleaning and move to the carpeted area, the scan of children will begin with the child in closest physical proximity to the area in which data</p>	

collection is conducted, whether walking toward one of three bookshelves to get a book or seated on the carpet. The scan will continue with children on the carpet, in a clockwise direction.

APPENDIX C (CONTINUED)

APPENDIX D

OPERATIONAL DEFINITIONS OF  
CLASSROOM ENGAGEMENT FOR CLASSROOM C

<b>Expectation</b>	<b>Scoring Instructions for Classroom Engagement</b>
1. When Teacher C announces that it is time to choose centers, children are to be sitting “criss-cross applesauce” with eyes on the teacher and/or on the child choosing his or her center;	<p>1. Score children who have not yet been called to choose a center as engaged if they are sitting with their entire bottoms touching the floor and eyes oriented toward the teacher and/or the child who has been called to choose a center;</p> <p>Do not score children as engaged if they are doing one or more of the following:            -sitting on the carpet in such a way that their entire bottoms are not touching the floor (e.g., kneeling, laying on side, stomach, back, etc.)            -orienting their eyes away from the teacher and/or child choosing his or her center (i.e., looking down or in a direction opposite that of the teacher and/or child choosing centers)</p>
When Teacher C calls a child to choose a center, he or she is to exhibit the following behaviors (i.e., items 2 through):	Score children who have been called to choose a center as engaged if they are doing one or more of the following (i.e., 2-4):
2. get up from the floor and inform her of the center in which they’d like to play for the period designated for child initiative (i.e., centers);	<p>2. getting up from the floor, contingent <b>ONLY</b> upon being called by Teacher C to choose a center;</p> <p>Do not score children as engaged if they are doing one or more of the following:            -remaining seated on the carpet</p>

	-orienting eyes and/or body away from the teacher
3. get his or her center nametag from the table;	<p>3. walking toward the table of nametags and/or are in the process of picking nametags from the table;</p> <p>Do not score children as engaged if they are walking away from the teacher and/or area in which they are instructed to go to choose centers (i.e., the table on which center nametags are placed).</p> <p>During <i>coaching</i> and <i>independent implementation</i> sessions, nametags designated for centers are replaced by center necklaces. As such, score children as <i>engaged</i> during these phases if, after Teacher C calls them to choose a center, they are exhibiting one or more of the following behaviors, as related to implementation of center necklaces:</p> <ul style="list-style-type: none"> <li>-announcing their chosen centers;</li> <li>-pointing to or walking toward the center necklaces that corresponds to the chosen centers;</li> <li>-retrieving the appropriate center necklaces from the corresponding center hook or waiting for Teacher C to retrieve the necklaces; and/or</li> </ul>

	<p>-placing the corresponding center necklaces around their necks</p> <p>Do not score children as engaged if they are walking away and/or area in which they are instructed to go to choose centers (i.e., the table on which center nametags are placed).</p> <p>During <i>coaching</i> and <i>independent implementation</i> sessions, nametags designated for centers are replaced by center necklaces. As such, score children as <i>engaged</i> during these phases if, after Teacher C calls them to choose a center, they are exhibiting one or more of the following behaviors, as related to implementation of center necklaces:</p> <ul style="list-style-type: none"><li>-announcing their chosen centers;</li><li>-pointing to or walking toward the center necklaces that corresponds to the chosen centers;</li><li>-retrieving the appropriate center necklaces from the corresponding center hook or waiting for Teacher C to retrieve the necklaces; and/or</li><li>-placing the corresponding center necklaces around their necks</li></ul> <p>Do not score children as engaged if they are walking away</p>
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<p>4. walk directly to the chosen center and remain within the boundaries of that center for the duration of play</p>	<p>4. walking directly toward their chosen centers and remaining within the physical boundaries of their chosen centers for the duration of play, unless otherwise instructed.</p> <p>Do not score children as engaged if they are moving and/or stationed in areas of the classroom other than those within the boundaries of a center</p>
<p><i>Circle to centers</i> begins with Teacher C’s instruction to children to sit “criss-cross applesauce with eyes on (her)” and ends with all children within the boundaries of a center.</p>	
<p>Instructions for conducting the <i>Engagement Scan</i>:</p> <p>Children are positioned on the carpet in rows, facing Teacher C. The engagement scan will begin with the child in the back row, furthest from Teacher C and in closest proximity to the area in which data collection will occur, continuing to children in the same row and to the left of this child. The scan of children in the next row will begin with the child furthest from the site of data collection and will move to children to the right of this child. This pattern will continue until the last child, seated in the front row and in closest proximity to the site of data collection, had been scanned.</p> <p>*Note: The order in which children sit will change, however patterns of engagement scans will be consistent across sessions. As children stand to go to their chosen centers, the scan will continue from the carpeted area to the child or children in one of the 10 center locations, as discussed prior to data collection sessions, and will continue in a clockwise direction to children in the nine remaining centers.</p>	

APPENDIX E

SUMMARY OF SYSTEMATIC TRANSITION STRATEGIES  
SELECTED BY TEACHER A

<b>Systematic Transition Strategy</b>	<b>Operational Description</b>
<b>Verbal Cue (A)</b>	<p>A verbal statement of warning, provided 3 to 5 minutes prior to transition from one activity to another (i.e., prior to verbal directives to end one activity and begin another).</p> <p>1. The first verbal cue was provided following review of the visual schedule and 3 to 5 minutes prior to Teacher A’s verbal instruction to children at the first table to get up from breakfast. This statement included information regarding the amount of time remaining, prior to Teacher A’s verbal instruction to the first table to get up (1) and a statement regarding the activity to follow (2). e.g., “In five minutes (1), I’m going to call the first table to get up from breakfast (2).”</p> <p>2. The second verbal cue was provided 3 to 5 minutes prior to Teacher A’s verbal instruction to children to put books away and move to designated language activities. This statement included information regarding the amount of time remaining, prior to Teacher A’s verbal instruction to put books away (1) and a statement regarding the activity to follow (2). e.g., “You have five more minutes with your books (1), then I’m going to ask you to put your books away (2).”</p>
<b>Visual Schedule (A)</b>	<p>A 22” by 28” navy blue poster board with 5” by 6.5” laminated pictures illustrating teacher expectations</p> <p>Illustrations included pictures taken from Microsoft Office Clipart, as well as digital photographs. Above each picture were descriptors of the illustrated expectations, typed in 50-point Arial text.</p>

<p><b>Visual Schedule (Continued)</b></p>	<p>Illustrations and associated descriptors included the following:</p> <ol style="list-style-type: none"> <li>1. clipart of a child sitting at a table (i.e., “Sit at Table”);</li> <li>2. digital photograph of a classroom chair (i.e., “Push in Chair”);</li> <li>3. digital photograph of the classroom trash receptacle (i.e., “Throw Away Trash”);</li> <li>4. clipart of a train (i.e., “Get Train Ticket”);</li> <li>5. digital photograph of the classroom sink (i.e., “Put Silverware in Sink”);</li> <li>6. clipart of a footprint (i.e., “Stand on Train”);</li> <li>8. clipart of a toothbrush (i.e., “Brush Teeth”);</li> <li>9. clipart of a child retrieving a book from a bin (i.e., “Get a Book.”);</li> <li>10. clipart of a child’s portrait (i.e., “Find Picture”); and</li> <li>11. clipart of a child sitting with a book (i.e., “Sit ‘Criss-Cross”)</li> </ol>
<p><b>Mini Visual Schedule (A)</b></p>	<p>An 8.5” by 11” piece of laminated paper, depicting 2” by 2” illustrations of expectations associated with particular periods of time during <i>breakfast to language</i> (i.e., following completion of the tooth-brushing task and prior to teacher initiation of circle activities)</p> <p>Illustrations included pictures taken from Microsoft Office Clipart, as well as digital photographs. Below each picture were written descriptors of the illustrated expectation, typed in 32-point Arial font.</p> <p>Illustrations and associated descriptors included the following:</p> <ol style="list-style-type: none"> <li>1. clipart of a child retrieving a book from a bin (i.e., “Get a Book.”);</li> <li>2. clipart of a child’s portrait (i.e., “Find Picture”); and</li> <li>3. clipart of a child sitting with a book (i.e., “Sit Criss-Cross.”)</li> </ol>
<p><b>“Train Tickets” (A/SV)</b></p>	<p>Laminated pieces of 2” by 4” paper, each depicting a picture of a train (i.e., Microsoft Office Clipart.)</p>

<b>Colored Footprints (A/SV)</b>	10" by 3" cut-out pictures of colored footprints (i.e., Microsoft Office Clipart) , attached to the floor with contact paper
<b>Circle Seat Photographs (A/SV)</b>	Laminated 5.8" by 4.5" digital photographs of children, attached to carpeted areas with Velcro  Above each photograph, in 44-point Comic Sans MS text, was the name of the child depicted in the photograph.
<b>Descriptive Praise (C)</b>	A verbal statement of acclamation, delivered to children contingent upon appropriate behaviors  These statements were provided throughout <i>breakfast to language</i> and functioned to label and reinforce children's engagement in teacher expectations (e.g., "Good job sitting 'criss-cross applesauce' on your circle seat, Susan!").
<b>Statement of Redirection (C)</b>	A verbal directive, delivered to children contingent upon exhibiting inappropriate behaviors, inclusive of statements regarding behaviors in which children were expected to engage, rather than behaviors incompatible with teacher expectations (e.g., "Place dirty silverware in the sink, Bobby." versus "Bobby, don't leave dirty silverware on the table.").  These statements were delivered throughout <i>breakfast to language</i> and functioned to label and reinforce children's engagement in teacher expectations.

APPENDIX F  
SUMMARY OF SYSTEMATIC TRANSITION STRATEGIES  
SELECTED BY TEACHER B

Systematic Transition Strategy	Operational Description
Verbal Cue (A)	<p>1. The initial verbal cue was provided approximately 5 minutes prior to the teacher’s (i.e., lead or assistant) verbal instruction to begin cleanup.            *This statement included information regarding the amount of time remaining prior to verbal instructions to begin cleanup (1), as well as a statement regarding the expectation that children continue play throughout this period of time (2).            e.g., “You have <u>five minutes</u> (1) left <u>to play</u> in your areas (2).”</p> <p>2. Following the teacher’s (i.e., lead or assistant) verbal instruction to children to begin cleanup, one or both teachers walked around the room, providing verbal cues as to the amount of time remaining for cleanup. This verbal cue was delivered 5, 4, 3, 2, and 1 minute(s) prior to the end of cleanup.            e.g., “You have 5...4...3...2...1 minute(s) left to cleanup!”</p>
Mini Visual Schedule (A)	<p>An 8.5” by 11” piece of laminated paper, depicting 4” by 4” illustrations of expectations associated with a particular period of time during <i>cleanup to circle</i> (i.e., following cleanup and prior to teacher initiation of circle)</p> <p>Illustrations were taken from Microsoft Office Clipart. Below each picture were written descriptors of the illustrated expectations, typed in 40-point Arial font.</p> <p>1. The first mini schedule was introduced following the delivery of the first verbal cue (i.e., “You have ___ minutes left to play!”).</p> <p>Illustrations and associated descriptors included the following:            clipart of a child retrieving a book from a bookshelf (i.e., “Get a Book.”), next to which was clipart of a child sitting cross-legged with a book (“Sit Criss-Cross.”).</p>

<b>Mini Visual Schedule (Continued)</b>	<p>2. The second mini schedule was introduced to children as they finished cleaning their areas and arrived to the carpeted area. The purpose of the visual was to clarify the contingency between following the expectation and contingent opportunity to serve as a “helping hand” for other children.</p> <p>Illustrations and typed descriptors included clipart of a child sitting cross-legged with a book (i.e., “First, Sit Criss-Cross.”) and clipart of a child’s hand (i.e., “Then, be a ‘helping hand’.”).</p>
<b>5-Minute Glove (A/SV)</b>	A red glove, paired with verbal cues as to amount of cleanup time remaining, worn by the teacher providing the cues
<b>“Beat the Buzzer” Game (A/SA)</b>	Teacher sets an electronic timer for five minutes and instructs children to finish cleaning their areas, prior to the end of a five-minute countdown
<b>Descriptive Praise (C)</b>	<p>A verbal statement of acclamation, delivered to children contingent upon appropriate behaviors</p> <p>These statements were provided throughout <i>centers to circle</i> and functioned to label and reinforce children’s engagement in teacher expectations. e.g., “Good job picking up the blocks, Juan!”</p>
<b>Statement of Redirection (C)</b>	<p>A verbal directive, delivered to children contingent upon exhibiting inappropriate behaviors, inclusive of statements regarding behaviors in which children were expected to engage, rather than prohibited behaviors (e.g., “Sit with a book, Janine.” Versus “Stop crawling around the carpet, Janine.”).</p> <p>These statements were delivered throughout <i>centers to circle</i> and functioned to</p>

<b>Statement of Redirection (Continued)</b>	label and reinforce children's engagement in teacher expectations.
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Note:

A = Antecedent Manipulation (i.e., preventions and environmental manipulations)

A/SV = Antecedent Manipulation/Supplemental Visuals (i.e., preventions and environmental manipulations involving the supplemental use of visuals)

A/SA = Antecedent Manipulation/Supplemental Activities (i.e., preventions and environmental manipulations involving the supplemental use of activities)

APPENDIX G

SUMMARY OF SYSTEMATIC TRANSITION STRATEGIES  
SELECTED BY TEACHER C

Systematic Transition Strategy	Operational Description
<b>Auditory Cue (A)</b>	In place of a verbal cue provided prior to the start of <i>circle to centers</i> , Teacher C rang a bell, contingent upon which children were expected to sit "criss-cross applesauce" and orient their eyes and bodies toward her.
<b>Mini Visual Schedules (A)</b>	An 8.5" by 11" piece of laminated paper, depicting 4" by 4" illustrations of expectations associated with <i>circle to centers</i> -Below each picture were written descriptors of the illustrated expectations, typed in 40-point Arial font. (Pictures were taken from Microsoft Office Clipart.) *Illustrations and typed descriptors included clipart of eyes and of a child sitting cross-legged ("First, Sit Criss-Cross with eyes on Ms.____."), next to which was a digital photograph of one of the center necklaces (i.e., "Then, Choose Centers.")
<b>Center Necklaces (A/SV)</b>	4" by 5" digital photographs of each, the number of which corresponded to the number of children allowed the ce areas, attached to 24" pieces of yarn -Center necklaces were hung on hooks attached to the wall, above which were identical 6" by 7" photographs of the associated centers.
<b>Children's Photographs (A/SV)</b>	Laminated 2.5" by 2.5" digital photographs of children, each attached to a craft stick and pulled from a paper bag to determine the order in which children were chosen to select centers  Above each photograph, in 36-point Comic Sans MS text, was the name of each photographed child.
<b>Descriptive Praise (C)</b>	A verbal statement of acclamation, delivered contingent upon appropriate child behavior  These statements were provided throughout <i>circle to centers</i> and functioned to

<b>Descriptive Praise (Continued)</b>	label and reinforce children's engagement in teacher expectations. e.g., "Good job sitting 'criss-cross applesauce' with eyes on the teacher, Joey!"
<b>Statement of Redirection (C)</b>	<p>A verbal directive, delivered to children contingent upon exhibiting inappropriate behaviors, inclusive of statements regarding behaviors in which children were expected to engage, rather than prohibited behaviors.</p> <p>These statements were delivered throughout <i>circle to centers</i> and functioned to label and reinforce children's engagement in teacher expectations. e.g., "Sit criss-cross with eyes on me, John." versus "Stop looking at your hands, John."</p>

## Note:

A = Antecedent Manipulation (i.e., preventions and environmental manipulations)

A/SV = Antecedent Manipulation/Supplemental Visuals (i.e., preventions and environmental manipulations involving the supplemental use of visuals)

A/SA = Antecedent Manipulation/Supplemental Activities (i.e., preventions and environmental manipulations involving the supplemental use of activities)

C = Consequent Manipulation (i.e., statements of response, delivered contingent upon child behavior)

APPENDIX H

MEAN NUMBER OF CHILDREN PRESENT DURING DATA COLLECTION  
SESSIONS, WITHIN AND ACROSS CLASSROOMS A, B, AND C

Mean Number of Children Present During Data Collection Sessions within and across Classrooms A, B, and C

<b>Session #</b>	<b>Classroom A (Phase)</b>	<b>Classroom B (Phase)</b>	<b>Classroom C (Phase)</b>
1	13.6 ( <i>BL</i> )	15.0 ( <i>BL</i> )	11.9 ( <i>BL</i> )
2	13.6 ( <i>BL</i> )		
3	16.0 ( <i>BL</i> )	13.9 ( <i>BL</i> )	11.9 ( <i>BL</i> )
4	14.0 ( <i>BL</i> )	14.0 ( <i>BL</i> )	12.0 ( <i>BL</i> )
5	<i>In-Vivo Coach</i>	13.9 ( <i>BL</i> )	13.0 ( <i>BL</i> )
6	15.0 ( <i>Coach</i> )		
7	12.0 ( <i>Coach</i> )	13.9 ( <i>BL</i> )	14.0 ( <i>BL</i> )
8	12.7 ( <i>Coach</i> )	14.9 ( <i>BL</i> )	
9	13.1 ( <i>Ind Imp</i> )	14.0 ( <i>BL</i> )	
10	13.7 ( <i>Ind Imp</i> )	14.1 ( <i>BL</i> )	
11	12.7 ( <i>Ind Imp</i> )	<i>In-Vivo Coaching</i>	14.0 ( <i>BL</i> )
12	14.9 ( <i>Ind Imp</i> )	15.0 ( <i>Coach</i> )	
13	12.1 ( <i>Ind Imp</i> )	14.0 ( <i>Coach</i> )	14.0 ( <i>BL</i> )
14	15.2 ( <i>Ind Imp</i> )	13.6 ( <i>Coach</i> )	14.0 ( <i>BL</i> )
15	14.0 ( <i>Ind Imp</i> )	13.9 ( <i>Coach</i> )	<i>In-Vivo Coaching</i>
16	14.4 ( <i>Ind Imp</i> )	11.0 ( <i>Coach</i> )	
17	13.6 ( <i>Ind Imp</i> )	8.9 ( <i>Ind Imp</i> )	13.0 ( <i>Coach</i> )
18	14.9 ( <i>Ind Imp</i> )	7.0 ( <i>Ind Imp</i> )	13.0 ( <i>Coach</i> )
19	12.3 ( <i>Ind Imp</i> )	11.6 ( <i>Ind Imp</i> )	12.8 ( <i>Coach</i> )
20	12.7 ( <i>Ind Imp</i> )	11.9 ( <i>Ind Imp</i> )	13.0 ( <i>Ind Imp</i> )
21	12.3 ( <i>Ind Imp</i> )	12.0 ( <i>Ind Imp</i> )	12.9 ( <i>Ind Imp</i> )
22	12.6 ( <i>Ind Imp</i> )	12.6 ( <i>Ind Imp</i> )	12.0 ( <i>Ind Imp</i> )
23	13.0 ( <i>Ind Imp</i> )	11.9 ( <i>Ind Imp</i> )	12.0 ( <i>Ind Imp</i> )
24	13.7 ( <i>Ind Imp</i> )	11.9 ( <i>Ind Imp</i> )	14.0 ( <i>Ind Imp</i> )
25	12.4 ( <i>Ind Imp</i> )	11.8 ( <i>Ind Imp</i> )	13.8 ( <i>Ind Imp</i> )
<i>Overall Mean across phases</i>	13.5	12.8	13.8

Note: *BL* = Baseline; *Coach* = Coaching; *Ind Imp* = Independent Implementation