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Effects of social story interventions on preschool age children with and without disabilities

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EFFECTS OF SOCIAL STORY INTERVENTIONS ON PRESCHOOL AGE CHILDREN WITH AND WITHOUT DISABILITIES

by

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ABSTRACT

Effects of Social Story Interventions on Preschool Age Children with and without Disabilities

by

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More children are receiving care outside of their home under the age of six (Childstats.gov, 2007). The quality of these programs has a direct impact on student's readiness for school (Burchinal, Roberts, Nabors, & Bryant, 1996). Social readiness is the foundation for school readiness and academic achievement (Blair, 2002; Brigman, Lane, Lane, Lawrence, & Switzer, 1999; Raver, 2004). Acquisition of social skills plays a key role in preschool age children's readiness for school, thus interventions that teach young children social skills are of importance. The purpose of this study was to examine the effects of Social Story interventions on preschool age children with and without disabilities.

In this study, a Social Story-Only intervention was examined along with a Social Story-Plus Practice Session intervention to determine if Social Stories were an effective intervention for preschool- age children with and without disabilities. The study examined teachers' perceptions of the interventions using the *Teacher Impression Scale* (Odom & McConnell, 1997) as well as student interactions using the *Social Interaction Observation System* (Kreimeyer, Antia, Coyner, Eldredge, & Gupta, 1991). The study took place in a public preschool / learning center. Observations of student play were

video recorded during play activities including blocks, housekeeping, table toys and dramatic play. The Social Story interventions were conducted over a five week period, with additional data collected at pre-intervention and maintenance periods.

The data were analyzed using a mixed model ANOVA. Based on the results of the data analysis, there was no statistically significant change in teacher perception over the course of the intervention as a result of the Social Story intervention. There was no statistically significant change in the acquisition of social skills by the participants over the course of the intervention as a result of the Social Story intervention. These results should be utilized cautiously as there were additional factors that may have impacted the results.

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CHAPTER 1

INTRODUCTION

Children learn and grow rapidly between the ages of three and five. Children this age learn to do a myriad of activities almost overnight from learning to speak in expanded sentences, to resolving conflicts and playing with others. However, some children experience difficulties in the early years and require more direct and intensive intervention to make progress. When this occurs, educators, parents and caregivers must find effective interventions to help children develop skills.

Overview

Early intervention has been recognized as an important component and support that helps children who are experiencing difficulties obtain new skills and advance the skills they have (Hanson & Lynch, 1995). Intervention in early childhood typically has focused on the domains of communication, socialization, cognition, fine and gross motor skills, and self help (adaptive) skills. Within these domains there is a broad range of what is considered typical development for preschool-age children. Because of this broad range, when a child has a delay in an area, it is important to intervene early.

Children in early childhood are educated in many different settings. Historically, young children remained in the home until they were kindergarten age, however, with many parents in the workforce, more children are enrolled in child care centers (Osborne, Garland & Fisher, 2002). In 2005, 61% of children age six and under in the United States who were not enrolled in kindergarten, received some sort of out of the home child care (Childstats.gov, 2007).

Unfortunately, caregivers in child care centers are not required to possess a college degree in education or in early childhood education. However, 49 states, plus the District of Columbia, include Child Development Associate (CDA) credentials as a component of their child care licensing requirements (Council for Professional Recognition, 2007). The Council for Professional Recognition also reported that about 15,000 child care providers apply for a CDA credential every year and there are currently more than 200,000 people holding CDA credentials in the United States today. In 2007, there were 24.9 million children in the United States (Childstats.gov, 2007). Given this large number, greater than 200,000 child care providers are required to serve 61% of the population of children under the age of six in the U.S. Therefore, the need for professional training in effective teaching strategies is evident.

The increase in children receiving some form of early childhood education services has led to increased attention to developmentally appropriate practices (DAP) (Bagnato, 2006; Bredekamp & Copple, 1997; Harrington- Lueker, 2000) and accountability in early intervention services. States that serve children with disabilities in Part B and Part C programs of the Individuals with Disabilities Education Act (IDEA) are required to report data on children upon entrance and exit of the programs. These data are required by the Office of Special Education Programs (OSEP) in the U.S. Department of Education (Early Childhood Outcomes Center, 2008). The outcome data are reported in three areas including social / emotional development, using appropriate behavior to meet needs, and acquiring new knowledge (Early Childhood Outcomes Center).

Accountability

Due to the increase in the number of children in preschool / daycare settings and the pressure for more accountability in early childhood education, these child care settings are emerging as centers of research and study. High quality pre-kindergarten experiences can benefit children upon entry to kindergarten. This is especially true for those at-risk for school failure (Perez-Johnson & Maynard, 2007). During the early childhood years, children grow and develop through a period of critical transition as they emerge in understanding their own and others' place in the world as related to actions (Porath, 2003). Enrollment in pre-kindergarten programs has been linked to increased academic performance (Howes, et al, 2008). The quality of the pre-kindergarten program also has an impact on student readiness for kindergarten (Burchinal, Roberts, Nabors, & Bryant, 1996; Phillips, McCartney, & Scarr, 1987). High quality child care has been identified as a predictor of increased vocabulary in students entering kindergarten, but it has also been linked to increased externalizing behaviors which can interfere with learning (Belsky et al., 2007).

One of the key indicators of student success is the acquisition of effective social skills. Social competence has been identified as a foundation for school readiness and academic achievement (Blair, 2002; Brigman, Lane, Lane, Lawrence, & Switzer, 1999; Raver, 2004). Children who experience difficulties with social skills are more likely to have difficulties in the classroom. These difficulties can affect a child's ability to maintain satisfactory peer relationships, which in turn can impact learning behaviors (Vaughn, Hogan, Lancelotta, Shapiro, & Walker, 1992). Children's social competence has been found to be a better predictor of first grade academic competence than family

background or cognitive skills (Raver & Knitzer, 2002). Peer acceptance has also been linked to a child's ability to be successful in the elementary classroom. Researchers have shown that: (a) following directions, (b) listening to instructions, (c) handling temper with peers and adults and, (d) conflict resolution are specific skills teachers have identified as necessary for school success (Agostin & Bain, 1997; Lane, Pierson, & Givner, 2003; Lane, Wehby, & Cooley, 2006).

Children

Children understand the world from their unique perspective and experiences and these experiences influence each child's perception of socially appropriate skills. Early childhood curriculum focuses on addressing the needs of the whole child. Social skill development is a critical part of any early childhood curriculum (Allen & Cowdery, 2009; Bredekamp & Rosegrant, 1992).

Social skill instruction should be integrated into the curriculum throughout the day by the early childhood education teacher (Bredekamp, & Rosegrant, 1992). Key components of effective social skill instruction include modeling, direct teaching, and perspective taking (Bredekamp & Rosegrant, 1995). These strategies can provide children with common experiences that can enhance their ability to communicate and problem solve social dilemmas (Bredekamp & Rosegrant, 1995), which assist children to learn appropriate social skills.

Children With Disabilities

Children with disabilities are often at-risk for delays in social skills (McConnell, 2002). Further, delays in social skill development are noted across disability categories.

These can include autism spectrum disorders (ASD) (American Psychiatric Association, 2000), emotional disturbances (Bos & Vaughn, 1994), language delays (Johnson & Golden, 1997), and learning disabilities (Vaughn, 1992), and intellectual disabilities (Schalock, et al., 2007). Due to the additional deficits in the area of social skills, students with disabilities are likely to be less socially engaged with peers (Odom, 2000). Children who experience difficulties in social skill development may experience difficulties across many settings. Special education services that focus on behavioral interventions are one way to support a child who has social skills deficits. The most successful interventions targeting social skills use multiple learning modes in naturalistic settings, focus on socially valid skills, and utilize positive peer models (Spence, 2003).

Social Stories

The use of Social Stories is one strategy that incorporates a variety of learning modes. Social Stories are stories used for the purpose of conveying social instruction. Social Stories are different from other instructional stories as they tend to be shorter than other stories used for instruction and highlight the student's perspective because they are written from the perspective of the student using first person language (Gray, 2000; Gray & Garand, 1993). Social Stories typically are composed of specific types of sentences including descriptive sentences, perspective sentences, cooperative sentences, affirmative sentences, directive sentences, and control sentences (Gray). Gray also recommends writing the stories at the student's reading level.

A descriptive sentence contains facts that are true and free of assumptions and opinions (Gray, 2004). According to Gray, the descriptive sentence identifies the

important aspects of the topic and is the most frequently used type of sentence in a social story. Because descriptive sentences are thought to be objective, they are used to bring logic and accuracy to the social situation described within the Social Story. Descriptive sentences are the only required component of each Social Story that is written, according to the Social Story 10.0 guidelines (Gray, 2004). Some sample descriptive sentences include: a) Many children wear sunscreen during recess time, b) The rain makes the ground wet, c) My dad reads to me before I go to bed.

Perspective sentences are used to make statements that can refer to a person's internal state. Perspective statements can include, "knowledge/thoughts, feelings, beliefs, opinions, motivation, or physical condition /health" (Gray, 2004, p. 9). Since they require assumptions on the part of the author, Gray does not recommend using this type of sentence when referencing the status of children with ASD unless the child has clearly stated their personal thoughts or feelings (i.e., I like to play with Zach). Perspective sentences typically are used to refer to the status of other people. Sample sentences include: a) Some people like chocolate, b) Sometimes Jeremy likes to play blocks by himself, c) Sometimes people feel tired.

Cooperative Sentences describe what others can do to assist the child complete a task (Gray 2004). These sentences may be left open ended for the child to use as a guide in identifying people who can assist them when necessary. Examples include: a) People who help me open my lunch box are _____, b) When I feel mad, my mom can help me.

Directive sentences are used as a guide for the student (Gray, 2004). Directive sentences identify possible responses or choices to the situation and must be closely

scrutinized for the possibility of being interpreted too literally. They often begin with the phrase "I will try to…" or "I may…" to help avoid a literal interpretation. Possible directive sentences include: a) I may ask Mom for help, b) I will try to keep the sand in the sandbox, c) I may choose a blue crayon.

Affirmative sentences express a commonly shared value or opinion that is present within a given culture as well as the meaning of surrounding sentences within the Social Story. The purpose of an affirmative sentence is to reiterate an important point or refer to a rule or reassure the child about a social situation that might be stressful. If a sentence within the Social Story was "People fasten their seatbelts when they get into a car," the affirmative sentence might be, "This is very important."

Control Sentences are "statements that are written by a child with ASD to identify personal strategies to recall and apply information" (Gray, 2004, p. 8). Control sentences should be reflective of the child's interests or favorite writing style. These typically are added after reviewing the Social Story with the child. For example, if a child dislikes substitute teachers, but enjoys the paraprofessional in the classroom, he might write, "If there is a substitute teacher, Ms. Jones will be in the class to help me. I can ask her for help first."

Typically, Social Stories have been used as an intervention for children with ASD, but they have been used with children who have other disabilities as well. Social Stories are used for several reasons. First, because Social Stories allow for individualization, the stories can meet the needs of individual learners. Second, this individualization allows for extra practice of skills and when implemented across home and school settings can increase communication between parents, teachers, and children (Moore, 2004). Third,

the stories are short and therefore can be implemented in a short amount of time. Next, the stories are easily embedded in the classroom routine during reading instruction (Soenksen & Alper, 2006). Fifth, many children find the stories engaging as they use information that is directly from the child's personal experience. Finally, Social Stories address the needs of students who have learning difficulties by taking complex social skills and breaking them into more easily understandable parts (Barry & Burlew, 2004).

Historically, researchers have used Social Stories to teach a variety of skills to children with learning difficulties. For example, Barry and Burlew (2004) used Social Stories to teach independent play skills to elementary-age children while Delano and Snell (2006) examined the use of Social Stories to increase engagement with peers for elementary-age children. Social Stories were used by Soenksen and Alper (2006) with a preschool-age child to gain the attention of peers. Moore (2004) used Social Stories as part of the bedtime routine for a four-year-old child with ASD to help decrease sleep disturbances. Crozier and Tincani (2005) and Scattone, Wilczynski, Edwards, and Rabian (2002) used Social Stories to decrease disruptive behavior for elementary and high-school- age children with ASD.

As with any body of research, researchers highlight key areas within the examination of Social Stories where further study is needed. In a review of Social Stories used with students with disabilities completed in the United Kingdom, Rust and Smith (2006) found numerous areas of inconsistency in research. One such area is the actual composition of the Social Story. Rust and Smith found there was no standardized way Social Stories were composed and implemented in research. Rust and Smith also found discrepancies in the implementation of Social Stories. For example, some Social Stories are written on

one page while other researchers have written one sentence on each page. The composition of Social Stories also differs in the use of pictures as some Social Stories include pictures while others do not. Another discrepancy in the use of Social Stories is how, when, and where they are implemented. Some Social Stories interventions are implemented immediately before the expected behavior is to occur while others are implemented with increased time between the intervention and the expected behavior.

Agosta, Graetz, Mastropieri, and Scruggs (2004) used Social Stories with picture icons to target behaviors of students during group time to improve sitting and attending behaviors for a six-year-old child with ASD. Agosta et al. recommend future researchers examine the addition of real pictures of students to the stories vs. icons to see if there is an impact on the student's behavior. Rust and Smith (2006) also highlighted the need for larger scale designs rather than single-case designs. Moreover, Rust and Smith raised questions about the types of behavior being targeted in Social Story research. They also point out that a decrease in inappropriate behavior does not necessarily mean a new appropriate skill has been learned. A final recommendation by Rust and Smith was to examine the types students used in research samples to ensure the intervention can be used for most students with ASD.

Sansosti, Powell-Smith, and Kincaid (2004) conducted a research synthesis of Social Stories. Sansosti et al. cited the link between Social Stories and positive intervention effects, but they cautioned against claims that Social Stories were an evidence-based approach, indicating this claim is premature. Several areas were recommended for extended study included examining issues of treatment integrity, implementing experimental controls, and comparing treatment effects with typical peers. Sansosti, et al.

also identified the need to define crucial components of a Social Story and to also check for generalization or target skills. After conducting the literature synthesis, Sansosti et al. recommended examining the use of social stories with typically developing children as well as examining the use of computerized social stories for children with ASD.

In general, research on Social Stories has been conducted using single subject research designs. The Social Stories have also been implemented individually with children. Currently there is little or no research existing that uses a Social Story intervention in a group research design for children with or without disabilities.

Purpose

Educating young children with disabilities can be challenging and additional research supported strategies are needed. Since children with disabilities typically have deficits in the area of social skills, and since social skills are a prime indicator of student success, teachers need interventions to address these deficits. Research conducted to date indicates Social Stories may be a promising intervention. However, more research is needed to determine the effectiveness of Social Stories for preschool-age children with and without disabilities. Research also is needed to determine if Social Stories are effective by themselves or if Social Stories require additional practice and teacher support to enable children to improve their social skills. The purpose of this study was to examine the use of Social Stories with young children age three to five with and without disabilities in an inclusive preschool setting by examining the following questions:

1. Do classroom teachers perceive children in the Social Story-Plus Practice Session group as improving their social skills more than the Social Story-Only group as measured by the *Teacher Impression Scale* (Odom & McConnell, 1997).
2. Do children with and without disabilities in the Social Story-Plus Practice Session group have more effective social behaviors and less ineffective social behaviors than children with and without disabilities in the Social Story-Only group as measured by the *Social Interaction Observation System* (Kreimeyer, Antia, Coyner, Eldredge, & Gupta, 1991).

Significance

As more children enter the preschool setting and as more preschool-age children with disabilities receive services in inclusive settings (Macy & Bricker, 2007), more effective educational interventions must be identified for children with and without disabilities (Dodge, 1995). Many of the staff working in inclusive preschool settings have little preparation in working with children with disabilities and do not have resources, including time, to implement effective strategies for children with disabilities in their classrooms (Macy & Bricker). Social Story intervention is a strategy that requires little training and can be easily implemented during the child's preschool day supporting social skill instruction as an important part of the preschool curriculum (Brigman, et al., 1999; Copple & Bredekamp, 2006; Parlakian, 2003).

One type of successful social skill intervention strategy for preschool-age children focuses on instruction that can be embedded into the early childhood curricula and implemented within the routine of the child's day (Bullis, Walker, & Sprague, 2001; Pretti-Frontczak & Bricker, 2001; Wolery, Anthony, Caldwell, Snyder, & Morgante,

2002). Social Stories fit naturally into early childhood curriculum since children listen to stories throughout the day when they attend preschool.

Social Stories have been researched with children with ASD and other disabilities, but little research has been conducted that examines the use of Social Stories in group settings with preschool-age children with and without disabilities. By using a Social Story intervention for preschool-age children with and without disabilities, more information will be added to the body of research regarding Social Stories as well as the body of research regarding effective Social Skill intervention for preschool-age children.

A great deal of research has been conducted using Social Stories as interventions, yet there is little consistency within Social Story research. Some interventions use Social Stories alone while others have social stories with a supplemental support (Sansosti, et al., 2004; Scattone, 2007). Other Social Story interventions have been implemented with a wait time between the expected use of the target behaviors in the story while other interventions have the expected target behavior occurring immediately after the Social Story is read (Reynhout & Carter, 2006; Rust & Smith, 2006). This study will contribute to the current body of Social Story research by adding a very systematic / replicable Social Story intervention to the current research that examines a Social Story-Only intervention as well as a Social Story-Plus Practice Session intervention.

Definition of Terms

Children with disabilities. Children with disabilities are defined as students who have an educational or clinical diagnosis of one of the 14 disability categories identified by IDEA. These include ASD, deaf-blindness, deafness, developmental delay, hearing

impairment, mental retardation, multiple impairments, orthopedic impairments, other health impairments, serious emotional disturbance, specific learning disability, speech or language disorder, traumatic brain injury, and visual impairment (Friend, 2006).

Children without disabilities. Children without disabilities are defined as children between the ages of three and five who are not eligible to attend kindergarten and are not diagnosed with a disability under the categories as defined by IDEA (Allen & Cowdery, 2009).

Classroom teacher. Classroom teacher is defined as the person assigned to the classroom that is responsible for the implementation of day to day instruction. This includes lesson planning, communication with parents, behavior management, room arrangement, and monitoring the progress of the children in the classroom.

Effective social interaction behaviors. Effective social interaction behaviors are defined as positive interaction, parallel play, associative play, cooperative play, positive linguistic interaction, interaction initiations, and positive responses to peers (Kreimeyer, et al., 1991).

Inclusion classroom. Inclusion classroom is defined as a classroom in a preschool setting where children with disabilities also attend and receive specially designed instruction. In the inclusion classroom there is a classroom teacher, a special education teacher and / or a special education teacher assistant (Allen & Cowdery, 2009).

Ineffective social interaction behaviors. Ineffective social interaction beahviors are defined as negative behaviors, nonplay behavior, solitary play, negative responses to peers, and no response to peers (Kreimeyer et al., 1991).

Modeling. Modeling is defined as providing an example of a specific social skill through a role playing situation (McGinnis & Goldstein, 2003).

Negative social interactions. Negative social interactions are defined as shouting, hitting, pushing away, throwing, pulling or snatching a toy or other material out of a child's hand without asking and receiving permission from the peer (Antia, Kreimeyer, & Eldredge, 1990)

Play group. Play group is defined as a group of four children who play together for 10 minutes after the intervention at the assigned center location. The play group is assigned before the start of the study.

Positive social interactions. Positive social interactions are defined as sharing materials, playing cooperatively, participating in interactive games, physical signs of affection, giving requests, and polite refusals (Antia, et al., 1990).

Practice session. Practice session is defined as the session immediately following the Social Story instruction in which the students practice the target behavior from the Social Story.

Preschool-age child. Preschool-age child is defined as a child who is between the ages of three years of age (36 months) and five years of age (71 months) but not eligible to attend kindergarten.

Social skills. Social skills are defined as "an individual's ability both to emit behaviors which are positively or negatively reinforced and not to emit behaviors which are punished or extinguished by others" (Libet & Lewinsohn, 1973, p. 304). The Social Skills taught in this study were inviting a friend to play, joining a play group, sharing materials, taking turns, giving a compliment, and responding to a friend.

Inviting a friend to play. A child will either verbally invite a child to play (e.g. "do you want to play with me?", "come play with me", "let's go play") or physically invite the child to play (e.g. handing the child a toy, gesturing towards an area, taking the child's hand to guide them towards the area). The other friend does not have to join the group for the behavior to count (adapted from McGinnis & Goldstein, 2003).

Waiting for a turn. Waiting for a turn occurs when a child has either (a) made a request for a toy or other material and the peer did not immediately surrender the item (b) the child reaches for an item but does not attempt to grab it away from the other child, or (c) if the child is playing a turn taking game and it is not their turn to play. Waiting does not occur if the child repeats the request more than two times, or attempts to take the item from the other person. (adapted from McGinnis & Goldstein, 2003).

Sharing materials. The child gives either all or part of an item they were playing with to another child either voluntarily or after a request.

Joining in. Joining in occurs when one or more children are engaged in a play activity. When a child is attempting to join a, the attempt will count if the child will ask "can I play" or begins playing with a play group without asking. Joining will be successful if the play group continues uninterrupted. Joining the play group will not count if the play is interrupted by verbal or physical protest by the other children (e.g. moving away from the child attempting to join the group, keeping toys from the child, pushing the child away).

Giving a compliment. A child says something nice to another child or when one child tells the other child they like something about that child. Some possible

examples include “I like your coat” or “that is a nice drawing” or “you are a good friend”. Some non-examples include, “I have a green boat, too” or other comments related to the child but not about the child.

Responding to a friend. A child makes a comment, asks a question, gives a direction, or makes a request of another child and the other child responds to the child. This response can occur verbally (e.g. when a child answers another child, or when a child comments on what another child says) or physically (e.g. when a child follows a direction, follows through on a request by handing the child an item related to the request). This response should occur within 10 seconds of the initial action by the original friend (adapted from McGinnis & Goldstein, 2003).

Social stories. Social Stories are defined as stories that “describe a situation, skill or concept in terms of relevant social cues, perspectives and common responses in a specifically defined style and format” (Gray, 2004, p. 4).

Special education teacher. Special education teacher is defined as the certified teacher who works with the classroom teacher to implement lessons, provide specially designed instruction, make modifications and accommodations within the classroom, and implement other components of a child’s IEP. The special education teacher also works with children without disabilities who attend the classroom (Friend & Bursuck, 2002).

Special education teacher assistant. Special education teacher assistant is defined as the non certified person who is assigned to the classroom whose duties include working under the guidance of the classroom teacher to implement classroom lessons and provide instruction for the students in the classroom. The primary responsibility of the teacher assistant is working directly with the students while secondary responsibilities

include data collection, paperwork, running errands, cleaning and general classroom maintenance duties (Brewer 2004; Friend & Bursuck, 2002).

Video recorder. Video recorder is defined as a Panasonic brand digital video recorder that recorded to a SD card as well as a hard drive. Each SD Card had the capacity to hold 20 hours of video. The video recorder will be used to record all intervention play group sessions.

Summary

Research related to the social skill development of preschool-age children with and without disabilities is needed. The need has been increasing as the number of children attending preschool increases and as more children are receiving special education services in inclusive settings. It is crucial that effective strategies for teaching social skills are identified so that students with and without disabilities can be successful as they enter kindergarten. The intent of this study was to provide data supporting the use of Social Stories for children with disabilities and children without disabilities in the preschool setting.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter serves four purposes. First, to evaluate and summarize the literature related to social skill development for preschool-age children without disabilities. Second, to analyze and summarize literature related to social skill development for preschool-age children with disabilities. Third, to analyze and summarize literature related to the use of Social Stories as an intervention with preschool-age children without disabilities. Finally to analyze and summarize literature related to the use of Social Stories by preschool age children with disabilities. This review of the bodies of literature was necessary to gain knowledge of the use of Social Stories by preschool teachers as related children with and without disabilities.

The chapter contains the procedures used for the literature review, the selection criteria as well as the criteria used to exclude studies from the review. Next, the analysis and review of literature are presented relating to teaching social skills to preschool-age children, teaching social skills to preschool age children with disabilities and the use of Social Stories as an intervention. The chapter concludes with a summary and synthesis of the presented research.

Literature Review Procedures

A systematic search of several computerized databases was completed (e.g., Academic Search Premier, ERIC, Child Development, PsychInfo, Professional Development Collection, Education Full Text, Child and Adolescent Studies). These descriptors were used: (a) Social Stories, (b) social skills and preschool-age; (c) social

skills and young child; and (d) social skills and children. Next a manual search through the journals (from 2006-2009) that emerged from the computerized search was completed. These journals were the same as the journal titles identified by the computerized search (e.g., Academic Search Premier, ERIC, Child Development, PscyhInfo, Professional Development Collection, Education Full Text, Child and Adolescent Studies). Finally, the search process involved reviewing the reference lists from the various articles obtained to ascertain other relevant research articles.

Selection Criteria

Studies related to the use of Social Stories were included in the review if: (a) the study included an intervention using Social Stories; (b) an intervention other than Social Stories was used to teach social skills to preschool-age children; or (c) an intervention was used to teach social skills to preschool-age children with disabilities. Studies were excluded from the review of literature if they did not meet the aforementioned criteria or did not contain information on a research based intervention. Studies related to the use of Social Skills instruction for preschool age children were included in the review if: (a) an intervention was a direct social skills intervention for preschool age children without disabilities; (b) an intervention was used to teacher preschool age children without disabilities: or (c) an intervention was used to teach social skills to preschool-age children with and without disabilities.

Social Skills Instruction

Social skills are a major component of early childhood education. Children with and without disabilities are found in many different settings. Researchers have focused on interventions in home, preschool and clinical settings. The following research studies examine the effectiveness of social skills instruction on children with and without disabilities in multiple settings.

Preschool-Age Children

One environment where preschool age children are found is the home. Kramer and Radey (1997) used a social skills training model to improve sibling social relationships. The participants in the study included 42 families. Families could participate if they had a child four to six years old with a sibling less than 30 months. Once selected, the families were randomly assigned to an experimental and control group with 21 families in each group. In the experimental group the older siblings had a mean age of 57.65 months and the younger siblings had a mean age of 18.95 months. In the control group, the older siblings had a mean age of 60.14 months while the younger siblings had a mean age of 21.10 months.

The different treatment methods included in the study by Kramer and Radey (1997) examined the effects of social skills training versus the use of books and video tapes. The other procedures in the experiment were exactly the same for both the treatment and control groups. Baseline data were collected in the home and included measures of sibling interaction as well as parent reports of family relationships. The older siblings then met with adult facilitators in groups of four or five participants at the Family

Relationships Laboratory on the University of Illinois campus. Group sessions were 40 minutes and occurred weekly over a period of four weeks.

During the treatment sessions in the experimental group, the children were taught how to initiate play, how to accept an invitation to play, how to refuse an invitation to play, perspective taking, how to deal with angry feelings, and how to manage conflict. Kramer and Radey (1997) employed the model by McGinnis and Goldstsein (1990) which includes instruction, modeling, role playing and positive feedback to help teach the skills. The children were given opportunities to practice each skill. In the control condition, the procedures were implemented in the same way with one slight difference. Instead of using the McGinnis and Goldstein model involving practice of the target behavior, the children watched videotapes, participated in discussions and read books on the targeted behaviors.

Parents in both groups received handouts describing what was discussed in the sessions. Howeve,r in the experimental group, the parents were given suggestions for encouraging and rewarding the behaviors. This did not occur for the control group. After the sessions, the facilitators went to each participant's home to view the sibling interactions. Kramer and Radey (1997) videotaped these interactions. During the home visits, the facilitator in the experimental group prompted and praised the child for exhibiting the target behavior, while the participants in the control group were reminded about what was discussed in the sessions. Parents were encouraged to not intervene unless their child exhibited distress.

To measure the effect of the intervention, the parents completed several reports including rating scales and weekly progress reports. The interactions between the

siblings were measured by Kramer and Radey (1997) using an observational assessment of social skill use. These behaviors were recorded at 30 second intervals. Results of the study indicated the social skills training promoted prosocial sibling interactions and decreased some forms of negative sibling interactions. Parent reports indicated increased sibling warmth, decreased levels of rivalry and lower levels of problematic sibling behaviors.

Kramer and Radey (1997) reported siblings in the experiment group were more likely to initiate play with their siblings than siblings in the control group. Kramer and Radey attributed the ability to engage in role playing and to receive feedback from peers and instructors as factors contributing to the treatment effect. Limitations of the study included the small number of participants, and the use of a non-clinical sample. Parents in this study did not view their child has having social difficulties; therefore more research would be required to generalize to this population. It is also important to note that the participants only attended four teaching sessions.

In a related study used with children without disabilities, Mayeux and Cillessen (2003) cited the importance of social problem solving skills to improve peer interactions. In a study conducted over two school grades (kindergarten and first grade), the researchers examined three goals related to social problem solving. First, Mayeux and Cillessen described the social problem solving strategies used most often by boys. Secondly, the researchers examined the patterns and relationships surrounding the problem solving strategies boys used. Finally, peer status was used to measure the correlation between strategy use and social competence.

Mayeux and Cillessen (2003) examined these relationships with 231 kindergarten (n=114) and first grade (n=117) boys who participated in the study. The participants were mostly white and from lower and middle class families. In the study, the participants attended 97 different classrooms placed in 35 different schools. A sociometric assessment was conducted to assess the status of each child. All children from the classrooms (including girls) were interviewed and asked to identify each boy participating in the study from a photograph. The participants were rated on a 3-point scale shown by a happy, a sad, and a neutral face. Mayeux and Cillessen (2003) instructed the participants to point to the sad face if they didn't like the child, the happy face if they liked the child and a neutral face if they did not know how they felt about the child.

The participants were interviewed before a play session. Stories were used to describe social situations including breaking a child's favorite toy, entering a peer group, play goals that conflict, and competing for a desired activity. Mayeux and Cillessen (2003) stated these stories were selected as they tend to illicit conflict in schools. The participants' responses were recorded. Predefined probes were used to illicit more responses and clarifying questions were used to ensure comprehension by the recorder. All participant responses were recorded until the child had no more responses to give to the situation.

The responses were analyzed by Mayeux and Cillessen (2003) using a multivariate ANOVA. When these data were correlated with social status, popular boys requested solutions to problems more than average boys. In the first grade group, the popular boys were more assertive in their responses than the average boys. Rejected boys avoided

conflict significantly more than the other two groups of boys. Overall, the boy's reactions to hypothetical situations were a mix of prosocial strategies combined with avoidant and antisocial responses. According to Mayeux and Cillessen the older students used more effective solutions than the younger participants.

Mayeux and Cillessen (2003) indicated children entering school may have limited social strategies due to their lack of exposure to challenging social situations. They also noted boys of this age do not follow any patterns or strategies, but used combinations of strategies to maintain their social relationships. Popular boys were more likely to be assertive, respond prosocially and request solutions be reached than less popular boys. However, there were no differences found in the use of anti-social responses according to Mayeux and Cillessen. The boys categorized as rejected suggested avoiding conflict and requesting help more often than the popular boys did.

This study relied on interview techniques to examine student behavior. Mayeux and Cillessen (2003) suggested the need for more longitudinal studies analyzing social information processing. The study highlighted the relationship between a child's acceptance by his peers and the function of problem solving skills in during conflict. More research should be conducted to examine what makes a child a more desired classmate. Direct measures of student behavior would also enhance the study of children's behavior.

In another classroom setting, Lau, Higgins, Gelfer, Hong and Miller (2005) examined the social interactions of children with and without disabilities during computer activities. Children, ages three to six years attended preschool. The children were divided into dyads consisting of a child with a disability paired with a child without disabilities.

Eighteen dyads were created. The special education teachers assigned to the inclusive classrooms were the facilitators for the study. The dyads were then placed into two groups. A teacher facilitated group and a computer only group.

During regularly scheduled computer time, Lau et al. (2005) reported the dyads of children would use the computer for eight minutes, four times a week. In the teacher facilitated group, the teacher would provide cues for the children to initiate social interaction, while in the computer only group, the teacher only provided assistance to initially engage in the activity or redirect the children back to the activity. To provide cues and prompts, the teacher facilitators were shown a prompting procedure. During a training session, the teachers practiced the procedure while corrective feedback was given. This continued until the teacher followed the procedure with 100% accuracy with two practice sessions.

To measure the social behaviors, the *TIS* (Odom & McConnell, 1997) and the *SIOS* (Kreimeyer, et al., 1991) were used. The dyads were videotaped to record interactions for later analysis. The TIS data were analyzed using a two way ANOVA. No interaction effect between the disability status and the intervention group were found by Lau et al. (2005). There was a significant main effect for the disability status of the children [$F(1,32)+4.467$, $p = .042$].

The *SIOS* data were analyzed using a MANOVA and significant main effects were found for the behaviors of positive interaction, associative and cooperative play, positive linguistic interaction, peer initiates interaction, child responds positively, child initiates interaction, and peer responds positively. The data indicated a significant increase in the positive interactions, associative and /or cooperative play, positive linguistic interactions,

peer initiations, positive child responses, child initiations and positive peer responses in the teacher facilitated group than the children in the computer-only group. Lau et al., (2005) stated the effect of the intervention may be due to the skill of the teacher, the structured computer time, dyad usage and a peer mediated instructional component. Computer activities paired with teacher support promoted social interactions in inclusive settings for children with and without disabilities. As the study only examined student behavior during computer activities, Lau et al. reported more research is needed across materials and settings. Also, the teacher facilitators had a high degree of skill. Less experienced or skilled teachers may not yield the same effect.

There are few studies that examine the global use of social skill instruction for children without disabilities despite the infusion of social skills throughout the preschool curriculum. Yet there are several studies involving the use of social skills instruction for children with disabilities.

Preschool-age Children with Disabilities

Chung et al. (2007) used a peer-mediated strategy to help improve the social skills for children with autism. Four children with autism participated in the study. Michael was a six year eight month old boy. He was able to engage in conversation for two turns, but had difficulty staying on topic. This conversation behavior was only reported with adults. Steven, another boy, seven years one month old, had difficulties with speech and required prompting during conversation, especially when speaking with his peers. Another participant, Joshua, was seven years seven months old and could initiate conversation. He had difficulties continuing the conversation for more than two turns.

Finally, Richard was six years 11 months old. He exhibited difficulties in language and social communication and would often repeat the same question over and over again.

The four peers included in the study had ages ranging from six years six months old to 10 years one month old. Since not every peer could participate every week, three of the four peers participated in each session. For the intervention, Chung et al. (2007) trained the peers at baseline and immediately before each session to increase understanding of the target skill of the day. The peers were also able to demonstrate how to prompt the participants to use the skill, praise the students, and help motivate the children with autism to ask questions.

The children participated in 11 weeks of social skill training conducted by Chung et al. (2007). Each session consisted of a welcome session, skill explanation, teaching time, practice time which was followed by a snack time, video time and wrap up. No other information was provided about the specific training sessions including information on the video feedback time.

The intervention was conducted over a period of 12 weeks. The target behaviors of appropriate talking and inappropriate talking were examined in the study. Social interaction data were collected using an observation system reported by Thiemann and Goldstein (2001). This system included examining the types of correct responses as well as the frequency of appropriate and inappropriate responses. The data were collected over 15 minute intervals. A percentage of appropriate and inappropriate behaviors were calculated based on the interval data. Chung et al., (2007) used a based comparison design to examine the effectiveness of the intervention.

The results indicated the intervention combining peer-mediated social skills and video feedback was successful. Chung et al., (2007) indicated that three of the four children demonstrated marked improvement in increasing appropriate talking and decreasing inappropriate talking. Chung et al. described perseveration present in one participant as a possible behavioral for the lack of his response to the intervention. Limitations of the study included limited number of baseline data points, coders who were not blinded to the study, lack of a control group, and the comparison design model. Chung et al. recommended the use of more frequent sessions as well as a shorter session length if applied to a school or treatment program.

Children with autism were also the participants in an intervention implemented by Wimpory, Hobson, and Nash (2007). The study examined the correlation between adult's behavior and episodes of child social engagement. Children between the ages of two and four years (n=22) participated in the study. The 19 boys and three girls were selected based on their participation in the Child Development Service assessment. Of the 22 children, 17 were non-verbal and five made one word utterances.

Wimpory et al. (2007) counted the number of Episodes of Social Engagement. These periods were defined as the child looking to the face of the adult while showing a form of communicative behavior (actions, facial gestures, vocalizations, making sounds). These periods were documented while the child was participating in play based assessments conducted by a clinical psychologist, speech language therapists, and a team senior nurse. During the assessment, the clinicians attempted to engage the child by following their lead, watching for spontaneous child interactions. These adult attempts were rated and coded into two mutually exclusive categories--activity and communicative role. The

types of scaffolding and support the clinicians provided were also examined by Wimpory et al. The methods of support were placed into categories including social routines, imitation of the child, self-repetition, and the absence of these supports. These adult behaviors were compared to the number of episodes of social engagement to ascertain the effect adult behavior has on the child with autism's social engagement.

The results of the study indicated when active input (especially musical or physical input) is provided, children with autism will be more likely to socially engage. Wimpory et al. (2007) also indicated the effectiveness of the interactions is increased when the adult input is organized in a way as to scaffold the desired interactions. Finally, Wimpory et al. found adults engaging in repetitive imitation of the child and adults creating social routines can promote social engagement for children with autism. Some limitations of the study included an inter-rater reliability of .57 and the modest number of episodes of social engagement used in the study.

Kroeger, Schultz, and Newsom (2007) also examined components of social engagement by using a two group delivered social skills program with children with autism. The two groups consisted of a direct teaching group and a play activities group. Twenty-five children participated in the study. Thirteen children participated in the direct teaching group and 12 in the play activities group. The children were between the ages of four and six and all had autistic disorder. The verbal levels of the participants were varied. Some were fluent speakers while others were non-verbal without communicative intent. Most of the children were able to make non-spontaneous requests.

Targeting the behaviors of responding, interaction, and imitating, Kroeger et al. (2007) divided the children into two intervention groups. Both groups began the

intervention with a greeting circle. Then both groups participated in free play time. During this time, the direct teaching group viewed video modeling target behaviors during the first half of the free time activity period. Throughout the video there were opportunities for the children to practice the skill and their correct responses were reinforced. During play the direct teaching group was prompted to use the targeted skills. Then both groups participated in an ending circle for the session ended.

Kroeger et al. (2007) found both groups improved in their initiating behaviors F (1,23) =13.234, p =0.001, responding behaviors F (1,23) =9.878, p =0.005, and interacting behaviors F (1,23) =12.035, p =0.002. Significant interaction effects were noted between groups with the direct teaching group making more gains. The scores for initiating behaviors were reported as F (1,23) =6.287, p =0.020, responding behaviors F (1,23) =11.243, p =0.003, and interacting behaviors F (1,23) =9.324, p =0.006.

Kroeger et al. (2007) stated group interventions can be effective for children with autism. They attributed some of the success to the animated video modeling with intermittent reinforcement to maximize attention to task. While the intervention targeted social behaviors, parents reported their children made advances in their social-communicative language. However, these statements cannot be measured from the data collected during the study. Kroeger et al., advised future research involve extending the time of and increasing the frequency of the interventions. They also recommended more data be collected on the generalization and maintenance of skills.

In a related study, Whalen, Schreibman, and Ingersoll (2007) examined the effects of joint attention training on social initiations and non-targeted social communication skills for children with autism. Participants in the study included 10 preschool-age children,

four of whom had autism. The average age of the children was four years two months. To participate in the study, the children were required to have a diagnosis of autism from a physician or psychologist outside of the University of California San Diego (UCSD). The UCSD Autism Research Laboratory was the setting for the study.

Using a single subject multiple baseline design across participants, Whalen et al. (2007) examined spontaneous speech, social initiations, positive affect, and imitation behaviors as well as collateral changes in social behaviors. The baseline period ranged from two weeks to 10 weeks. Baseline, treatment, post-treatment and three month follow up data were collected.

To begin the study, Whalen et al. (2007) administered pre-treatment assessments were before the treatment phase begin. Two phases, response training and initiation training, were implemented in the study. Response training consisted of responding appropriate to joint attention requests. Initiation training included teaching the child to initiate joint attention with the trainer. Whalen et al. did not list any further information, but rather referred to a previous study to gain information on the methods used in the intervention.

As a result of the intervention, all of the participants rated higher on their social initiation score. All participants are noted to have scored in the range of their typically developing peers in social responding at post treatment. While examining collateral changes in social behavior, Whalen et al. (2007) found three of the participants demonstrated improved empathic responses and emotional reaction from pre treatment to post treatment.

Whalen et al. (2007) cited evidence to support the use of joint attention in children with autism to teach other skills. The researchers felt this study may support the hypothesis of the acquisition of joint attention associating with the acquisition of other behaviors. With this, the researchers also found decreases in many of the collateral behaviors from post-treatment to follow up. Whalen et al. recommended additional research to identify interventions that address maintenance of the targeted skills. The researchers also cautioned generalization due to the small population size.

Examining another population of children, Antia and Kreimeyer (1997) examined the social behaviors of children who were labeled as deaf and hard of hearing. There were 45 total children who participated in the study with 43 of the children having the label of deaf or hard of hearing. The children ranged in age from two years three months to six years three months. During the course of the intervention, the children were divided into a social skills group and comparison group. The mean age of children in the social skills group (n=25) was reported at four years two months with a degree of hearing loss at 87 decibels. The mean age of the children in the comparison group (n=18) was four years one month old with a degree of hearing loss reported at 72 decibels.

The intervention targeted the following social skills: greeting, sharing materials, assisting peers, making appropriate refusals, conversing, complimenting and praising peers for their products (Antia & Kreimeyer, 1997). Data on social behavior were collected during play sessions. These data were collected at the point of pre-intervention, immediately after the intervention, as a follow up three to four weeks after the intervention ended, and then again at one year after the intervention was complete for the purpose of obtaining long term data. The children were in play groups of 8-12 children

with and without hearing loss. Data were collected in one minute intervals with eight total minutes of data collected on each participant for each data collection period.

The social skills intervention used teacher modeling and prompting during teacher planned activities requiring interaction amongst the children. Some of the activities used by Antia and Kreimeyer (1997) included art activities, role playing activities and games. The teacher modeled the social skill prior to the activities and then prompted the children who were deaf or hard of hearing as well as the hearing children to use the skill while interacting with each other. There were an average number of 36 intervention sessions for each group. These sessions were conducted for six groups in a special education classroom and for one group in the regular preschool classroom.

Antia and Kreimeyer (1997) implemented a comparison intervention. The comparison intervention also provided opportunities for the children to engage in activities that required social interaction and allowed them the opportunity to become familiar with a group of peers. The students did not receive any prompting or modeling from the teacher. These sessions were conducted in the general education classroom setting for six of the groups, while two groups participated in the special education setting. There were an average number of 39 sessions for each group.

Antia and Kreimeyer (1997) used a repeated measures analysis of covariance (ANCOVA) to analyze the data with group, interactive behavior, and time as the repeated measures. Age, unaided hearing loss, and mode of communication were the covariates used in the analysis. The categories of behavior measured included peer interaction (which was divided into positive, negative and linguistic interaction); play (which consisted of non-play, solitary play, parallel play and associative / cooperative play);

child initiations / peer responses (child imitation, peer positive responses, peer negative responses and peer non-responses) and peer initiations / child responses.

As a result of the social skills intervention, Antia and Kreimeyer (1997) found the children decreased frequency of solitary and parallel play, but the changes were not generalized to a play setting when a teacher was not present. The main form of play changed from parallel play before the intervention to associative play after the intervention. These play changes were maintained one year from the ending of the intervention as well. Antia and Kreimeyer noted several differences in the play behavior at the one year follow, yet cautioned against over generalization. They noticed that the children in the small group indoor play groups had more direct interactions with peers then was observed during the outdoor play time where the students who were deaf or hard of hearing were more easily able to isolate themselves. Even with these differences, positive changes were noted. Antia and Kreimeyer recommend further data collection on the peers to enrich the understanding of the interactions between children with and without disabilities.

Summary of Social Skills Interventions

Social Skills interventions have been utilized for preschool age children with and without disabilities. There are several components found in the effective social skills interventions. First is time set aside for the preschool age children to practice the targeted social skill an effective strategy in several interventions (Chung et al., 2007; Whalen et al., 2007). Teacher prompting of the targeted social skills was noted to be an effective intervention in multiple studies (Kramer & Radey, 1997; Lau et al., 2005; Wimpory et al., 2007). Finally, modeling, whether used by teachers, peers, or video, was an

intervention component found in interventions used to improve social skills (Kramer & Radey, 1997; Kroeger et al., 2007). The importance of friendship to improve children's social skills was also noted (Mayeux & Cillessen, 2003). Throughout the studies examining social skill acquisition in young children, researchers stress the importance of extended research in this area.

Social Story Interventions

Measuring the effectiveness of Social Stories was the topic of research conducted by Rust and Smith (2006). Rust and Smith recommended several factors when evaluating the success of social story interventions. First, effectiveness vs. efficacy needed to be measured. While the environment needs to be controlled for the purpose of the research laboratory, the effectiveness of the intervention should be measured in the specific social situation for which it was intended. Another recommendation is to generalize findings to larger populations. Social Stories have typically been examined in single subject designs. Rust and Smith challenged researchers to use larger sample sizes so the effectiveness can be generalized to most children with autism. Social Stories interventions should also target specific behaviors, should monitor the appropriate behavior change, and must collect maintenance and generalization data.

Rust and Smith (2006) called for examination of the formulation of the Social Stories, descriptions of the presentation of Social Stories, and the influence of students' age and level of functioning on the effectiveness of the intervention. Another important factor to consider is the timing of the implementation of the story. Researchers needed to consider the length of time between the presentation of the story and the targeted social situation.

There is great variation in the current research between the frequencies of the Social Story presentation, so more research is needed to determine the frequency required for the intervention.

Rust and Smith (2006) noted the need for more research in a variety of environments, using frequency and duration of the targeted behaviors. In the research conducted to date, Rust and Smith stated many of the studies have significant confounding variables that interfere with the determination of the effectiveness of the intervention. Overall, more research is needed, according to Rust and Smith, to be able to evaluate the effectiveness of the intervention.

Social Story Only Interventions

Social Stories have been studied as interventions in various settings and with a variety of children with disabilities. The research conducted on Social Stories can be divided into groups. Some of the interventions combine the Social Stories with another intervention or an additional strategy. This section will review the studies which used Social Stories as the only intervention.

Appropriate social interactions. Scattone, Tingstrom, and Wilczynski (2006) conducted a Social Story intervention to examine appropriate social interactions for three boys with autism. Steven, an eight year old boy with autism from a middle class family was verbal, but seldom interacted with his peers. During free time activities he often isolated himself in a corner. He had a composite IQ score of 67. Drew a 13-year old boy with autism from a middle class family, was verbal and able to request help and information. He seldom initiated interactions with his peers and when he did interact, the interactions were often inappropriate. Scattone et al. reported drew made noises or

gestures during different times. He had a composite IQ of 95. Billy was an eight year old boy with Asperger syndrome from a middle class family. Billy was verbal and could request help and ask for information, but was unable to elaborate on conversation. When interacting with his peers, Billy often recited lines from his favorite movies regardless of his peers' interest in the movie. Bill had a composite IQ of 95.

Scattone et al. (2006) designed the Social Story intervention to target the child's appropriate social interaction with peers. The Social Stories were written using the recommendations outlined by Gray (1998). The Social Stories were constructed on white paper with 14 point font and compiled into a spiral bound book with one to two sentences on each page. The Social Story intervention was implemented alone without any other interventions. Scattone et al. implemented the intervention five minutes prior to free time activities in whatever setting the students were located. During this time, the students would read the Social Story, or in the case of Steven, the teacher would read the Social Story to the student. Then the students would engage in free time activities where data were collected on student behaviors and appropriate student social interactions were recorded.

Scattone et al. (2006) used a multiple baseline design across participants. The Social Story intervention was implemented first with Steven, while baseline data were collected for Drew and Billy, then Drew was added to the intervention, while baseline data were collected for Billy and finally the intervention was implemented with Billy. Data were collected over 10 minute periods during free time activities, as well as during lunch and recess. Scattone, et al. used a 10 second partial interval recording method to record the

occurrence of appropriate social interactions. The average of the percent of intervals in which appropriate social interaction occurred was graphed daily.

No change in appropriate social interactions was found for Steven, while Drew had the biggest change in social interactions with a mean changing from 7% to 39%. Billy had a slight change with a mean of 13% increasing to a mean of 28%. An immediate treatment effect was noted for Drew. To modify the intervention, Scattone et al. (2006) recommended involving the students in the design of the Social Story. Several limitations were noted by Scattone et al. including prompting from the teacher, other students hearing the Social Story, and the antisocial nature of Steven's class. The researchers also reported the need to be more specific with Steven's Social Story. Scattone et al. stated the need for more research to identify the target populations that benefit from a Social Story intervention.

Soenksen and Alper (2006) implemented a Social Story intervention to help a five year old boy, TJ, gain the attention of his peers. TJ was identified as being hyperlexic as well as having an educational diagnosis of autism. TJ attended school in a general education setting and results from the Developmental Reading Assessment placed TJ at the third grade reading level. Even though he was able to read words at this level, his comprehension level was below that of his peers. TJ exhibited difficulties maintaining eye contact and independently conversing with peers.

The Social Story intervention targeted the behavior of attaining peer attention. Attaining peer attention was defined as saying the peer's name and or looking at the peer's face as he was talking to the peer. The study was conducted within a kindergarten classroom where there were two adults, a teacher and a paraprofessional, to 26 children.

Soenksen and Alper (2006) arranged the Social Story in a book that consisted of a title page and four additional pages. The pages were centered on an 8.5 by 5.5 inch piece of white paper. Boardmaker icons were used to illustrate the story and the stories were written according to the guidelines set forth by Gray (1995). The Social Stories were read five minutes before each targeted setting. The students would choose an activity. After the activity was selected TJ and his peers sat on the floor to listen to the story. Each student was given a copy of the story, and all students listened as the story was read aloud.

The targeted behavior (gaining peers' attention) was measured immediately after the story session during Math time, choice time, and recess. Using a multiple baseline across settings, the Soenksen and Alper (2006) collected data using 15 minute observational periods over a period of four weeks. A simple frequency count was used to determine the number of times TJ was able to gain his peer's attention.

In the recess setting, TJ had a baseline mean of zero and an intervention mean of 2.9. This increased to a mean of 5.7 during the maintenance phase while the mean for his peers was only 5.0. At choice time, the mean frequency was 0.06 during baseline increasing to a mean of 0.9 during intervention and 1.4 during maintenance. The math mean during baseline was 0.1 moving to 0.6 during the intervention and 0.83 during the maintenance. Soenksen and Alper (2006) report TJ maintaining these levels during a follow up phase in the math and choice time settings. No follow up data was able to be collected on recess due to a change in schedules.

Soenksen and Alper (2006) noted a positive increase in TJs ability to gain his peers' attention. The Social Story intervention was significant since it was implemented in

naturally integrated groups with peers without disabilities in a general education classroom. This is different than previous Social Story interventions. Soenksen and Alper note several limitations of the study including the sample size, the target behavior, and the fact that no attempt was made to measure social reciprocity. The researchers recommend caution when generalizing the results to other populations of children due to the small sample size.

Delano and Snell (2006) conducted a study targeting the duration of social engagement and frequency of target skills that included seeking attention, initiating comments, initiating requests, and responding to peer's initiations. Three students with autism participated in the study which occurred in a resource room. Derrell was a six-year old African American boy who communicated in mostly one and two word utterances. In his kindergarten class, Derrell could only sustain an interaction for two exchanges. Sean was a six-year old Caucasian boy who communicated in long sentences. Sean was able to initiate interactions with his kindergarten peers but often chose to play alone. Thomas was a nine-year old boy who also communicated in long sentences. No information was provided about his social interactions, but he was able to participate fully in the general education curriculum.

The Social Stories were written in accordance with the Gray (2000) guidelines and contained information about the four target skills of seeking attention, initiating comments, initiating requests, and responding to peer's initiations. The Social Stories were written on 8.5 by 11 inch paper using 20-point Times New Roman font. Two to three picture symbols were embedded into the written text. Sean used a program to read the text to him, so no pictures were embedded.

Delano and Snell (2006) used a single subject multiple probe across participants design, baseline data were collected during ten minute play sessions. The intervention occurred over 15 sessions. During the intervention, the teachers read the story to the participants, checked for understanding, then allowed the children to play for 10 minutes. Play interactions were video recorded and then analyzed. Through the course of the study, the interventions were faded over two fade periods with a return to baseline at the end of the study.

The results showed improvement in the duration of play as well as the number of occurrences of target behaviors. Delano and Snell (2006) noted the students used responding to initiations and initiating comments more than the other target behaviors. Maintenance data were collected but reported as unclear. While students maintained a higher level of social engagement, the effects were different for each of the students.

Delano and Snell (2006) noted several limitations to the study. The first limitation noted two of the three students were also receiving discrete trial training which could have an impact on the children's language. Another limitation was one student began using a behavior contract during the course of the study. An additional limitation noted by Delano and Snell was the length of the intervention at only 15 days. Finally peers were trained in conjunction with the study for the purposes of the play sessions which could confound the effects of the treatment. Additional research is recommended by Delano and Snell related to the specific target behaviors.

Sansosti and Powell-Smith (2006) used Social Stories to target the skills of sportsmanship, joining in and maintaining conversations with three children diagnosed with Asperger Syndrome. The three boys, age nine years nine months to 11 years six

months, attended private school and were in the fourth grade. The intervention occurred at home, but the students were observed while they were playing outside at their respective schools.

Three Social Stories were created by Sansosti and Powell-Smith (2006) for the intervention (one per child) to address the target behaviors. The stories were five to nine pages long and were printed with 14 point Times New Roman font on six by eight inch paper. A Mayer-Johnson picture symbol was placed on each page (Mayer-Johnson, 1981).

Behaviors were recorded using a 15 second partial interval recording system (10 seconds observing, five seconds recording). This interval recording was implemented over 15 minute periods. Sansosti and Powell-Smith (2006) used a single subject multiple baseline design across participants, baseline data were collected. During the intervention phase, the Social Stories were read before the students went to school and after the students went to school. The students were allowed to take the stories to and from school to have access to them throughout the day. To ensure the stories were read at home with their parents, a journal was kept by both the students and the parents. Follow-up observations were conducted after the stories were faded.

Sansosti and Powell-Smith (2006) reported two of the students showed improvement with the use of the Social Story intervention and this improvement was maintained during the follow up sessions. One student showed slight improvement, but never maintained a stable baseline or intervention trend. Sansosti and Powell-Smith (2006) collected peer comparison data on the target behaviors as well.

Since the intervention was successful for only two of the three students, Sansosti and Powell-Smith (2006) recommended caution be taken when generalizing the results. Sansosti and Powell-Smith hypothesized the protocol was not followed by the parents' of the student who did not have a success outcome. Another limitation of the study was related to the lack of consistency of the Social Story implementation. Sansosti and Powell-Smith also stated a lack of information on the social consequences of the study and recommend this as a point for future research.

Three students with pervasive developmental disorders not otherwise specified participated in a study conducted by Ivey, Heflin and Alberto (2004). Ron was a seven year five month old Caucasian boy who attended school part of the time in a special education classroom, and part of the time in a general education classroom. Adam was five year one month old and attended a special education preschool program. Hal was a five year eight month old African American boy who attended a general education kindergarten class with special education support. All children received speech language therapy as an outpatient and the Social Story intervention occurred in this setting.

The Social Stories for the intervention were constructed by Ivey et al. (2004) using the guidelines recommend by Gray (1994) and Gray and Garrand (1993). The stories were made on 8.5 by 11 inch paper folded in half with 16 point Arial font. Digital photographs and Boardmaker pictures were used in the stories. The text of the Social Stories was included in the article.

Four types of novel behaviors were examined in the study. These included setting changes, novel toys presented by an unfamiliar person, purchases, and novel activities occurring within the session. The target behaviors for the Social Story intervention by

Ivey, et al. (2004) were behaviors related to these novel events. Five behaviors were selected for each novel event with the use of new vocabulary included in one of the five target behaviors. A chart of the behaviors was included in the study and included such behaviors as remaining on task, commenting, making a choice and asking a question.

Using an ABAB single subject design, Ivey et al. (2004) collected baseline data. A week before the students were to engage in a novel event, the parents were instructed to read the Social Story to the children one time each day for five days as well as right before going to speech therapy. During this time the speech therapist arranged a novel activity between two target activities. The children had the opportunity to complete five target skills mentioned in the Social Stories. The children were given credit for completing the target skill if they completed it independently or with one prompt. After this point Ivey et al. removed the Social Story treatment. Baseline data were collected again, and then the Social Story intervention was implemented again.

Results of the intervention showed an increase in participation in novel events among the three participants in the study. Ivey, et al. (2004) reported a range of increase of participation when the Social Story intervention was in place from 15% to 30 %. A 15% to 30% range of decrease was also reported when the Social Story intervention was removed.

Ivey, et al. (2004) reported several limitations to the study. The use of novel events could have confounding effects as the events were novel to speech therapy, but may not have been novel to the individual children. Another limitation was using a predetermined number of days for each phase instead of letting the data level before switching conditions. Ivey et al. reported the small number of target behaviors as a limitation to the

study as well as a final limitation of a possible carryover effect as a result of an ABAB design. Future research recommendations included using truly novel events, examining the amount of time needed for a Social Story intervention to be effective before a novel event, and replication with more participants and participants of varying skill levels.

An eight year old girl with autism was the subject of a study conducted by Norris and Dattilo (1999) evaluating the effects of Social Stories on inappropriate social interactions. Jennifer was classified as having average to low average intelligence, below level reading and math skills, and mild to moderate autism. Jennifer was fully included in a general education classroom with support from a special education teacher. She was able to verbally communicate with others.

The Social Stories were constructed by Norris and Dattilo (1999) on six by nine inch pink and yellow paper. The stories were laminated and six to seven pages in length. The book stapled in the upper left hand corner. The font was 12 point Times New Roman, and each page contained a corresponding picture from the Mayer Johnson Pictures Symbols.

Norris and Dattilo (1999) defined appropriate social interactions as initiation or responding to other students verbally, physically or gesturally. Verbalizations were deemed appropriate as long as they were related to what was occurring at the table. Inappropriate social interactions were defined as verbalizations not related to the topic, singing by oneself or making noises. Norris and Dattilo also examined the absence of social interactions. Baseline and intervention sessions were videotaped and interobserver agreement data were collected during 20% of the baseline sessions and 25% of the

intervention sessions. The range of agreement was from 89% to 100% for all sessions. Procedural reliability was reported at 100%.

Norris and Dattilo (1999) used an AB design, baseline data were collected over a period of five sessions and intervention data were collected over a period of 15 sessions. There was no change in the level of appropriate social interactions, inappropriate social interactions decreased and the absence of interactions also slightly increased. No immediate change was noted immediately after the start of the intervention. Significant changes were not noted until the four day of the intervention.

Due to the lack of replication, the effect of the intervention could not positively be determined by Norris and Dattilo (1999). The intervention was also implemented prior to rather than during the period of time when the targeted behavior occurred. This may have impacted the effectiveness of the intervention as well. The inverse relationship between inappropriate social behaviors and the absence of social behaviors was also noted by the authors. Norris and Dattilo hypothesized as the inappropriate behaviors decreased the student did not have skills to replace the inappropriate behaviors with appropriate social behaviors therefore leading to the absence of any interaction. The authors also used three Social Stories during the intervention phase instead of just one story, which may have lead to conflicting ideas for the student. More research is recommended by the authors on this theory.

Improving communication skills. Dodd, Hupp, Jewell, and Krohn (2008) implemented a Social Story intervention with two boys with pervasive developmental disorder-not otherwise specified. Mark was a nine year 10-month old Caucasian boy who could hold a conversation, but parents reported concerns about his social skills. Logan

was a 12- year- seven-month old Caucasian boy who also had good verbal skills but had difficulty with giving compliments.

Dodd et al. (2008) constructed the Social Stories following Gray's (2004) guidelines. The Social Stories were written on 8.5 by 11 inch cardstock which was folded in half. The two Social Stories used for Mark contained actual pictures of Mark playing with his brother while the Social Story used for Logan contained clip art pictures. No information was given regarding following certain guidelines, but the Social Stories were included in the article. Dodd et al. also included comprehension questions which were asked after reading the story.

Using a multiple baseline design across behaviors, Dodd et al. (2008) studied the effect of Social Stories on Mark giving excessive directions as well as the number of compliments used by Mark and Logan. Dodd et al. conducted a baseline phase. After the baseline phase, the parents were asked to read a story to the children, ask questions about the story, allow the children to play with their sibling, and then offer a reward for playing. The reward was not contingent upon their behavior. These sessions were video recorded to obtain frequency counts of the target behaviors. During the intervention phase, the same procedures were followed, with substitution of the parents reading a Social Story for the general story. Interrater reliability data were collected and reported at 100%.

The results showed an increase of the number in the number of compliments given by Mark and a decrease in the number of excessive directions while playing given by Mark. Logan had an initial burst of compliments (seven), but then the number of compliments tapered down to zero as the intervention continued. Dodd et al. (2008) noted several

limitations to the study including the short intervention phase and the primary observer was not blind to the condition. Dodd et al. stated Mark's mom had used Social Stories previously. This was not listed as a limitation to the study. Future research recommendations by Dodd et al. included including more females as well as comparing Social Stories to other interventions.

Lunchtime behaviors. Researchers have used Social Story interventions to help improve the lunchtime behavior in several studies. Rowe (1999) used Social Stories to improve the lunchtime behavior of a second grade student diagnosed with Asperger syndrome. In the classroom, the student required assistance communicating with others. The student was also noted to have difficulty entering the lunch room, often refusing to enter, and vocalizing his displeasure. The student also had difficulty finishing his lunch because he was preoccupied with the other students.

The Social Story was written following the guidelines of Gray (1994). According to Rowe (1999) the Social Story was constructed on three pages and included 12 sentences of varying function. No other information about the story construction was reported. The story was read to the student before lunch time. After the first reading, Rowe noted the student saying, "Now I'll know what to do!"(p. 13).

Using qualitative methods, the student was observed walking down the hall, finding a seat, and eating his lunch. A Social Story intervention was implemented before lunch providing strategies for the student to use and the students behavior was reported to change immediately. This behavior was monitored for 12 weeks and the student remained successful. No quantitative data were collected as Rowe (1999) considered the student's immediate acceptance of the intervention and sudden and continued behavior

change successful. There were also no limitations listed for the study nor were there recommendations for further research.

Lunchtime behavior was also targeted by Topis and Hadwin (2006) during an intervention implemented with five students with disabilities. The students attended an inclusive elementary school. Three boys and two girls participated with mean ages of seven years five months. Minimal additional information was given about the children participating in the study.

Toplis and Hadwin (2006) examined the participants' ability to follow lunchtime routine. Lunch time routine was listed as the target behavior and further described as waiting to be dismissed, collecting lunch materials, and going to the dining room. Once in the dining room the children were expected to find their assigned seat and wait to start eating until they were given permission. In order to reach the target behavior, the participants had to complete this routine within two minutes of being dismissed from class.

The Social Stories were composed by Toplis and Hadwin (2006) following the recommendations of Gray (1994) with the exception of including icons to match the story if the participant requested it. Each story was written in book format with a title page and a total of eight pages. One to two sentences were written on each page. The Social Story was read to the child 10 minutes before lunch each day in a quiet area of the classroom.

During the lunchtime routine, Toplis and Hadwin (2006) scored the students based on a set of defined criteria. The students received a score of two if they displayed an independent response, a score of one if they gave a prompted response and a score of zero if they were physically assisted or did not respond within two minutes. Using an

ABAB single subject design, baseline were collected for four days, the intervention was implemented for six days, there was a return to baseline over a period of four days and then the intervention was implemented again for four days.

Toplis and Hadwin (2006) reported the study showed Social Stories to be an effective intervention for three out of the five children who participated in the study. These three children showed a significant increase in independent behavior at lunchtime. This study extended the line of research from working only with children with autism to children identified by their teachers as having social difficulties. Toplis and Hadwin recommended more research examining the benefits of Social Story research in wider social contexts. There was also no maintenance phase to determine the lasting effect of the intervention. Toplis and Hadwin also noted the small sample size as a limiting factor to the generalization of the results of the study.

Bledsoe, Myles, and Simpson (2003) targeted mealtime skills for an adolescent with a diagnosis of Asperger syndrome and Attention Deficit Hyperactivity Disorder. The 13 year old male had a full scale IQ of 82. He was also reported to attend a specialized class in a separate public school facility for students with behavior disorders. The student was taking several different medications including Adderall, Risperdol, and Zoloft to assist with behavior control and obsessive compulsive issues. During lunchtime Bledsoe et al. noted that student was interested in interacting with his peers. His peers, however, did not want to interact with him because he did not consistently wipe food from his face, he talked in a loud voice, and he failed to clean up his area when he finished eating. Bledsoe et al. targeted the behaviors of spilling and wiping.

A Social Story book was made with Times New Roman 12 point font print and included six perspective / descriptive sentences and two directive sentences as well as photos demonstrating appropriate eating behaviors by the peers as well as the participant. The story was read with the student immediately before lunch. The behaviors were measured using event recording and reliability was reported at 90%. Bledsoe et al. (2003) implemented an ABAB design with the first baseline occurring over seven days, the first intervention phase lasting for five days, a return to baseline of five days and the second intervention phase lasting four days.

The Social Story intervention was effective in increasing the number of wiping incidents and decreasing the number of spills. Bledsoe et al. (2003) reported the return to baseline also showed an increase in the number of spills and a slight decrease in the number of wiping incidents. However, the participant in this study was motivated to fit in with his peers and had an awareness of the behaviors that were interfering with his ability to maintain social interactions. Bledsoe et al. recommended investigating the characteristics that can be attributed to a student's responsiveness to Social Stories.

Decrease of target behaviors. Many of the Social Story interventions targeted undesired behaviors in an effort to decrease these behaviors. Reynhout and Carter (2007) examined the use of Social Stories with an eight-year nine-month old boy with ASD who exhibited hand tapping behaviors during reading tasks. The student was considered moderate to severely impaired and his speech was limited to two to three word utterances. He was able to read about 300 sight words but exhibited difficulty attending to self-care needs independently.

The Social Stories were constructed by Reynhout and Carter (2007) following the guidelines outlined by Gray (2003) and the draft was shown to his parents and teacher to determine the appropriateness of the story. The story was constructed on 20 cm by 20 cm paper with one sentence typed in 20-point font. Each page contained one sentence and one photograph. The story was bound with two plastic curtain rings.

The target behavior was to reduce tapping of hands. Frequency data were collected by Reynhout and Carter (2007) at the start of the reading lesson and collection continued for 20 minutes using 10-second partial interval recording. Data were also collected on the participant's answers to questions and were coded as correct or incorrect. The percentage of questions answered correctly each day was calculated from this information. A single subject ABCA design was used. Baseline (condition A) occurred for seven days. The first intervention phase (condition B) was implemented for five days. During this period, Reynhout and Carter (2007) reported the teacher read the Social Story before the reading lesson occurred and made the Social Story available for the student. The next intervention phase (condition C) was implemented at this time. The change that occurred in this phase was the addition of the teacher rereading the Social Story when she deemed it necessary to do so. This condition lasted for 44 school days. The intervention was terminated and maintenance data were collected after four weeks.

Reynhout and Carter (2007) indicated a decrease in hand tapping behavior from 63% to 41%. The student's comprehension increased from 39% to 76 %. Maintenance data indicated tapping remained at the lower level found during the intervention. One limitation of the study included considering the source of the student's comprehension difficulties to determine if the intervention was truly effective. Another limitation of the

study was the use of a single participant. Finally, no data were reported on the number of times the teacher referred to the Social Story during condition C.

In a study conducted by Adams, Gouvousis, VanLue, and Waldron (2004), Social Stories were used with a seven year old child, Peter, diagnosed with Asperger syndrome. Peter was enrolled in a first-grade classroom and received speech therapy services. His parents reported that he was below grade-level in math and reading, exhibited fine and gross motor delays and took 0.5 ml of Prozac each day. Peter interacted with friends socially, but preferred to do so on his terms. He exhibited some repetitive behaviors which increased from the morning time to the afternoon.

The effectiveness of Social Stories was examined using a single subject ABAB design. During homework time, Peter exhibited frustration by crying, falling, hitting, and screaming. Adams et al. (2004) developed one Social Story was to address these target behaviors. The Social Story for this intervention followed all of the guidelines provided by Gray and Garand (1993) except one. The Social Story targeted four behaviors instead of one behavior as recommended by Gray and Garand. The text of the Social Story was provided, but no other information about the construction of the Social Story was provided.

Adams et al. (2004) stated the Social Story was implemented prior to the start of homework, but no specific amount of time was listed. The homework sessions were videotaped to ascertain a frequency count of the target behaviors. Crying episodes decreased by 48% moving from a total of 33 during the initial baseline phase to a total of 17 during the final intervention phase. Screaming episodes went from a total of 51 during the initial baseline phase to 20 during the final intervention phase. This marked a

decrease of 61 %. Falling episodes decreased by 74% going from 43 episodes to 11 and hitting episodes went from 15 episodes to six episodes, a decrease of 60%. In an interview, the parents reported to Adams et al. that Peter was more able to verbally express his frustration after the Social Story intervention was introduced. Peter's classroom teacher reported in an interview that Peter cried less after the introduction of the Social Story intervention.

Adams et al. (2004) noted limitations to the study. First, Adams et al. noticed a change in how Peter's father worked with Peter during the intervention period. His father used more redirection and decreased the number of verbal power struggles. Secondly, the mother and father both intervened during the homework session, but not in the same amount. Finally, the Social Story directed Peter to ask for help. Many times when Peter would ask for help, his parents would redirect him instead of following through on the help request. These limitations should be considered when examining this study.

Kuoch and Mirenda (2003) implemented Social Story interventions for young children with Autism Spectrum Disorders. The first student was a three year 10 months old boy who received a score of 95 on the *Peabody Picture Vocabulary Test-Revised* (PPVT-R) and received 30 hours per week of home based, one on one, discrete trail instruction. In addition to this, he attended a preschool for one day a week for three hours. Kuoch and Mirenda (2003) targeted the behaviors of yelling, crying and aggression specifically while sharing toys.

As reported by Kuoch and Mirenda (2003) the second student was a five year nine month old boy who received a score of 44 on the PPVT-R. He also received home-based instruction which was one on one using discrete trial interventions for 15 to 30 hours per

week. The second student attended a general education Kindergarten with the support of a full time teaching assistant. The targeted behaviors were to reduce screaming, squealing and crying, throwing up food and putting his hands in his pants during snack time.

The third student was six years four months old who received a standard score of 107 on the PPVT-R. Kuoch and Mirenda (2003) stated he was diagnosed with Pervasive Developmental Disorder Not Otherwise Specified. He completed kindergarten with the help of a teaching assistant and received home instruction in discrete trial training for 15 hours per week. The target behaviors identified for him included behaviors needed to play games including reducing cheating, moving a players piece on the board, touching other players, and saying negative things about losing.

Kuoch and Mirenda (2003) implemented the interventions using ABA designs for two of the children and an ACABA design for the third participant. The targeted behaviors for the study were defined and interrater reliability checks were conducted for a mean of 23.5 % of the sessions with agreement ranging from 86.9% to 100% with a mean of 97.9%. Procedural reliability data were also collected and were reported at 98.4% (range = 91%-100%). Kuoch and Mirenda wrote the Social Stories following the proportion of 2 to 5 descriptive, perspective, affirmative and / or cooperative sentences for every 0 to 1 directive sentence. Prior to the situations where the target behaviors typically occurred, the participants listened / read the Social Stories over a three to four minute period. For the student who participated in the ACABA design, the Social Story was replaced by reading a story that was similar in complexity and length to the social story and was related to the student's interest. After the story was completed, the

interventionist prompted the student to use appropriate behaviors in the upcoming situation.

Kuoch and Mirenda (2003) report a reduction in all targeted behaviors that remained when the intervention was withdrawn and baseline data was collected again stating that irreversible learning may have occurred as a result of the intervention. The study also indicated that the PPVT-R scores appeared unrelated to the success of the Social Story intervention, since all three students each scored in a different range. The stories were modified to incorporate the students' special interests which may have increased their effectiveness.

Limitations of the study as reported by Kuoch and Mirenda (2003) included the participation of all three subjects in one on one discrete trial training for 1.5 to 3.5 years. It was also reported that the Social Stories were written for behaviors that occurred in specific contexts so generalization of the skills is unknown. Finally, the Social Stories included child specific interests which may have impacted the results.

Scattone et al., (2002) implemented Social Stories to decrease disruptive behavior in students with autism. The subjects in the study were a seven year old male who flipped his chair in class, a 15-year-old male often found staring inappropriately at females during recess and male who was seven years old and shouted during recess. The IQ standard scores for the participants ranged from 40 to 82. Each student had a Social Story written targeting the specific behaviors exhibited by each child. The stories were eight to nine pages in length, on white paper with 16-point font mounted on black construction paper and laminated.

Scattone et al. (2002) used a multiple baseline design across participants. Interobserver agreement data was collected and measured during 30% of the observations and was calculated at 93%. Treatment integrity data were collected in 35% of the intervention sessions and were calculated at 100% for two of the participants and 91% for one of the participants. Data were collected using a partial interval recording system, during a 20-minute observation three times per week.

A decrease in disruptive behaviors was shown for all students. Scattone et al. (2002) reported difficulties in ascertaining the extent of generalization of positive behaviors of the student. Teachers were also observed using verbal prompts related to the Social Story when disruptive behaviors occurred, so it is difficult to know how the verbal prompt impacted the effect of the Social Story intervention. Because the interventionists were only in the classroom during the story phase, it is not known how many prompts were occurring throughout the day. Scattone et al. recommended a more tightly controlled experimental situation as well as identifying the features of Social Stories that are most often identified with positive outcomes.

Social Stories have also been used by Kuttler, Myles, and Carlson (1998) to reduce precursors to tantrum behaviors in a 12-year-old boy who was diagnosed with autism. Jon, the participant, attended a residential school and took 100 mg of Amitriptyline to assist with behavior control. Jon communicated in two to three word utterances and was aided by a communication book with 100 icons, and he also communicated with some signs and gestures. Jon exhibited difficulties in situations that required transitions, unexpected waiting and free time.

The intervention took place in a self contained classroom with seven other students enrolled in the class. Kuttler, Myles, and Carlson (1998) used an ABAB design with two Social Stories to reduce the frequency of inappropriate vocalizations and dropping to the floor. During observational data collection, it was determined that these two behaviors were precursors to tantrum behaviors. Two Social Stories were created in accordance with the guidelines established by Gray (1994) and Gray and Garrand (1993). The stories were made on six by six inch tagboard with a corresponding picture icon placed below the text. The book was bound with two metal rings on the right hand side of the book.

Data were collected in the morning during work time and during lunchtime. Event recording was used by Kuttler et al. (1998) to determine the frequency of the tantrums an interrater reliability data were collected on 34% of the observations and calculated at 93%. Baseline data were recorded for five days and the first intervention phase was implemented for five days. During the intervention phase, the Social Stories were read to the student immediately before work time and lunch time. The intervention period showed a significant decrease in the targeted behaviors. During the return to baseline phase the Social Story intervention was withdrawn, and a significant increase in behaviors was noted by Kuttler et al. When the intervention was implemented again in phase four, the behaviors decreased again. A treatment effect was noted.

Limitations of the study included the use of only one participant. Generalization of the results of this study to other participants must consider the functioning level of the participant in this study. Kuttler et al. (1998) did not collect maintenance or generalization data, so the long term effect of the intervention could not be determined. The study was also implemented during a period less than 20 days. This factor should

also be considered. Previously, the student had been introduced to the use of picture schedules as a way to reduce the occurrence of negative behaviors. Then Kuttler et al. concluded that the use of pictures alone may not be enough for some students. These students may require more information to be successful in the classroom.

Another intervention focusing on the reduction of tantrum behaviors was implemented by Lorimer, Simpson, Myles, and Ganz (2002). The participant in the study was a five year old boy diagnosed as having mild to moderate autism. The student attended an early childhood special education program four days a week, received speech therapy services at home and in school, and took Clonidine and Zoloft to assist in behavior control. The participant was estimated to have above average intelligence. He was able to communicate his wants and needs. Lorimer et al. reported the participant exhibited tantrum behaviors that escalated from verbal tantrums to physical tantrums when he wasn't allowed to participate in activities of his choice.

For the purpose of the intervention, Lorimer et al. (2002) constructed two Social Stories in book form on five by seven inch poster board. The poster board was laminated and bound with metal rings. Each page contained symbols from the Picture Communication Symbols Book (Mayer-Johnson, 1981). Event recording data were collected on the frequency of tantrums over the 45 minute therapy sessions. Data were also collected by Lorimer et al. on behaviors identified as precursors to tantrums. Interobserver reliability data were collected and averaged 96.1% throughout the study.

Lorimer et al. (2002) implemented a single subject ABAB design. During baseline, no interventions were added, although the student had access to his classroom supports that were already in place. These included a timer, an emotion worksheet and a mini-

schedule. The timer was set for 10 minutes when the student interrupted the teacher to assist the child with waiting. After the initial baseline phase of seven days, the intervention was implemented. The Social Story was read to the participant immediately before the student went to speech therapy. The student also had access to the Social Stories throughout the day.

Lorimer et al. (2002) implemented the intervention for seven days. During this time, both the frequency of vocalizations and tantrum behaviors decreased significantly. Then the Social Story intervention was removed for three days. The student's behaviors increased in both areas. When the intervention was re-implemented, the behaviors decreased again. The student had no tantrum behaviors on six out of seven days. Suggestions were made that research should examine the types of students that would benefit from a Social Story intervention. Lorimer et al. also recommended repetition of the student with larger groups of students.

Teacher assistant led interventions. Teachers and therapists are not the only interventionists implementing Social Story Interventions. Teacher assistants were instructed how to create Social Stories in research conducted by Quilty (2007). Using a multiple baseline design across subjects, Quilty paired three teacher assistants with three students with autism. The teacher assistant participants included (a) Kate, a female teacher assistant with three years of experience and one year of college, (b) Amy, a female teacher assistant with three years of experience and an associate's degree and (c) Meghan, a female teacher assistant with three years of experience and an elementary education degree.

According to Quilty (2007), the students participating in the story included (a) Ben, a six-year old boy who received one on one support from the teacher assistant in both the general education and special education setting, (b) Amy, a 10 year nine month old girl who received one on one support the school day where she spent 90% of her time in an autism resource room, and (c) Adam, a 10 year four month old boy who spent 80% of his day in a fourth grade classroom with support from a teacher assistant.

The Social Stories were written by the paraprofessionals. Once each story was written, Quilty (2007) stated that they were all formatted in similar ways. Each story was mounted on 4.5 inch by six inch black construction paper. The stories were typed and included photographs. No information was provided about the font that was used. The stories were bound using a spiral binding machine.

As part of the intervention implemented by Quilty (2007), the teacher assistants were taught to target behaviors, identify specific periods of time in which the behaviors occur, and construct Social Stories. After this training occurred, each teacher assistant selected a target behavior for the child with whom they were paired. Then a Social Story was constructed by the teacher assistant. The stories were checked for validity by a graduate student in speech-language pathology who had experience writing Social Stories. Then baseline data were collected by the teacher assistants. The target behaviors included (a) reducing the frequency Ben used the phrase “go home” for the last hour of the school day, (b) teaching Sarah to ask for a break, and (c) reducing the frequency of inappropriate behaviors during special activities for Adam.

Quilty (2007) stated the teacher assistants were taught how to implement the Social Story interventions, but no specific information was given on when the intervention was

implemented during the student's school day. Data were collected during the intervention period and maintenance data were collected at six and nine weeks from the completion of the study.

The results of the intervention completed by Quilty (2007) indicated the teacher assistants were able to complete the Social Story intervention. Student results saw a decrease in all negative behaviors. Maintenance data collected at the six week period showed zero negative behaviors exhibited for all students while maintenance data collected at nine weeks saw an increase in behaviors, but still within the range of behaviors seen during the intervention period. Quilty recommended caution when generalizing the results to other teacher assistants and children with autism as the study contained a small sample size for each population.

Social Stories Combined with Other Interventions

Tangible reinforcement. Many researchers combined a Social Story Intervention with other interventions and teaching methods to effect behavior. Several studies used tangible reinforcement of desired behaviors as a strategy used in the Social Story intervention. A tangible reinforcer is a reinforcer that is provided to a student after a desired behavior that the student is able to physically hold in their hand. For example, a tangible reinforcer can be something to play with, look at or eat.

In a study conducted by Burke, Kuhn, and Peterson (2004), a Social Story was read to children before they went to sleep with reinforcement for desired behavior in an effort to reduce disruptive bedtime behaviors and night waking. Four children participated in the study and all but one of the children participated in behavioral health services. Jeff, a five-year-old Caucasian male, exhibited bedtime resistance behaviors which included

tantrums, hitting, kicking, and destruction of property (breaking windows, urinating on the floor, beating the wall). Hector, a seven-year old Hispanic male had difficulties falling and remaining asleep without his parents being with him. Two Caucasian sisters, Michelle (age seven) and Susan (age two), exhibited behavior problems which included refusing to get ready for bed, arguing, screaming once in bed, crying, waking, and entering their parents' room in the middle of the night.

The behaviors targeted in the study by Burke et al. (2004) were disruptive bedtime behaviors, sleep onset and sleep duration. The study started out as a single subject ABAB design, however one of the parents expressed concern about the withdrawal phase, so a single subject multiple baseline across participants design was used for remaining three participants. Interrater reliability data was collected by the non-intervening parent for two parent households and by follow up morning phone calls by the researcher for single parent family households. The interrater agreement for Jeff was reported at 91% for disruptive behaviors and 100% for sleep onset and duration while the interrater agreement for Hector was 100% for all behaviors. Susan and Michelle's parents reported 92% agreement for all behaviors.

For the intervention, the parents recorded the time they read the Social Story to the children. Part of the intervention implemented by Burke et al. (2004) utilized the Sleep Fairy. The sleep fairy would leave a surprise under the pillow for the children when they exhibited the desired behaviors. One parent only reinforced a selected target behavior. Then the parents recorded the events in a sleep diary. The Sleep Diary included a frequency count for disruptive bedtime behaviors, night waking, sleep onset time and total sleep time as well as the start time of the Social Story. These data were collected

during the baseline and intervention phases The Sleep Problems subscale on the Child Behavior Checklist (Achenbach, 1991) was used to ascertain treatment effect and treatment acceptability data were collected using the Treatment Evaluation Inventory (Kazdin, 1980).

Burke et al. (2004) reported all children decreasing the number of disruptive bedtime behaviors. Jeff went from 20.3 per night to 1.0 per night. Susan reduced her behaviors by 93% and Michelle reduced her behaviors by 96%. Hector's disruptive behavior reduced by 57%, which was a less noticeable effect, but his mother only reinforced the "not waking behavior". Sleep onset improved significantly for three of the four children in the study. Hector's night waking improved from 2.4 events during baseline to 0.5 events during the intervention phase to zero during the three month follow up. Total sleep time did not improve significantly, but the children were in the normal range at the start of the study. The scores from the Child Behavior Checklist indicated all four children were in the clinical range at baseline. During the post-treatment, scores were unchanged for Hector, improved for Michelle and in the normal range for Jeff and Susan. The parents rated the intervention as highly acceptable.

Limitations of this study as reported by Burke et al. (2004) included the study size, the limited number of behaviors exhibited by the children, and identifying which of the components of the Social Story contribute to the treatment effect. Other limitations of the study not identified by the researchers included examination of the reinforcers used as well as systemizing how the reinforcers were distributed. Burke et al. also recommended using partial interval time sampling to identify disruptive behaviors instead of relying on

parent reports via sleep diaries. This intervention was effective and incorporated reinforcement of desired behaviors targeted in the Social Story.

Yet another study examining sleep and bedtime routine and utilizing a Social Story intervention combined with a tangible reinforcer was implemented with a four year old boy with severe learning disabilities and autism. Moore (2004) reported the subject would only sleep in his parents' room, and would take between one and two hours to fall asleep with his mother close to him. The four year old boy would wake during the night wanting milk and woke early in the morning. If any of these conditions were not fulfilled by the mother, the child would scream and tantrum aggressively.

Moore (2004) conducted an interview with the parent and then the teacher to ascertain the history of behaviors and identify specific behaviors. Observations were also conducted in school and at home. Moore (2004) determined the behaviors surrounding sleep were affecting his overall behavior. The bedtime routine was video-taped by his mother and a sleep diary was also completed to provide baseline information. Each parent also completed the Motivational Assessment Scale by Durand to determine the function of the child's tantrums. The parents also completed a reinforcer assessment for the child.

Moore (2004) developed a Social Story to relay information about the new routine to the child. The book used pictures of items that were reinforcing to the child based on the reinforcer assessment conducted by the parents as well as pictures of his family, his pajamas, and consequences for following the routine. The story was read with the child before bedtime. The story was paired with a reinforcer. If the child's behavior stayed the same or got better, he earned a token on a chart.

According to Moore (2004) if the child woke in the night, the mother applied the principles of graduated extinction including gradually increasing the amount of time before response and minimal attention. During the first day of the intervention, it was reported that the child seemed slighted confused, whereas he accepted the change during the rest of the 28 day intervention with a two day lapse of sleeping in his parents' bed during a period of illness. After the first two weeks of the intervention, the child's brother slept in the top bunk of the bed.

Social validity data was collected by Moore (2004) via interview. The mother found the program was extremely successful, simple to carry out and caused little stress to her or her family. It was also noted that the amount of time for the child to fall asleep was reduced to around 30 minutes as reported by the mother. Moore stated that Social Stories work in different ways for different children and no two stories are the same. Moore also stated the success of the story is dependent upon its individualized qualities for each subject.

Another intervention using tangible reinforces was implemented by Bernad-Ripoll (2007). This intervention combined Social Stories with Video Self Modeling. Reinforcement for desired behaviors was used as this study progressed. The participant in the study was a nine-year old boy with high functioning autism. He attended a fourth grade general education class and received support from four paraprofessionals throughout the day, although he did not receive assistance from more than one adult at a time. Alan was having difficulty controlling anxiety, frustration and anger. For the video self modeling part of the intervention, Alan was videotaped engaging in activities that

elicited tantrums as well as activities Alan found enjoying. These video tapes were grouped into segments that paired a negative emotion with an opposing positive emotion.

Bernad-Ripoll (2004) used a single subject AB design with generalization to examine this combined method. All phases of the intervention took place in Alan's home. During the baseline phase, Alan would view two video taped segments from a variety of situations in his home with one segment showing Alan expressing a positive emotion, and the other segment showing Alan expressing a negative emotion. After viewing each segment, Alan was asked to describe how he was feeling, why he felt that way, and what he could do next time. His answers to these questions were recorded. The baseline phase lasted for 10 sessions.

In the intervention phase, two Social Stories were introduced to Alan each session. Bernad-Ripoll (2004) reported the Social Stories contained photographs of Alan eliciting different emotions with a description of each emotion. These emotions were opposing emotions (one positive, one negative). After the Social Stories were read, a video segment of Alan eliciting each emotion was viewed. Then Alan was asked to describe how he was feeling, why he felt that way, and what he could do next time. In the case of happiness and calmness the last question was omitted or changed to asking Alan what makes him calm. At this time a reinforcement system was introduced. The reinforcement system consisted of (a) food or games and (b) community reinforcers (e.g. going to McDonalds). These could be earned after viewing the second set of video tapes or during break the break. Bernad-Ripoll (2004) did not state the number of days over which the intervention occurred, but did mention a 10-20 minute break between sessions. The intervention lasted for 10 sessions.

During the generalization phase which lasted for 10 days, Alan's parents read him one Social Story of his choice each day for four days. After the four day period, Alan's parents were encouraged to read the appropriate Social Story to him whenever Alan was engaging in any of the negative behaviors. His parents were also instructed by Bernad-Ripoll (2007) to prompt Alan to follow through with the solutions he suggested throughout the intervention. In this phase, a reinforcement system was implemented where Alan received points for answering questions. The points could be exchanged for activities after the lesson.

Bernad-Ripoll (2007) reported an increase in Alan's ability to label emotions correctly. He labeled 55% of the emotions correctly during the baseline phase, 95% of the emotions correctly during the intervention phase, and 100% of the emotions correctly during the generalization phase. Alan's ability to provide an explanation for why he felt a certain way and an action response went from 10% in the baseline phase to 100% in the generalization phase.

Limitations of this study conducted by Bernad-Ripoll (2007) included the AB single subject design which lacks replication, the use of only one student, a lack of examples of the Social Stories, no Social Story guidelines, and no interobserver reliability data were collected. The study also took place over a short period of time, so no maintenance phase was introduced. During the generalization phase, it is unclear how many times the Social Story was used each day, making replication difficult.

Teacher prompting and guidance. Two students with severe autism participated in a study conducted by Barry and Burlew (2004). Aaron was an eight-year old boy who attended school in a self-contained classroom. Aaron engaged in several self stimulatory

behaviors and only used speech when repeating words and phrases spoken to him. Holly was a seven-year old girl who attended the same self-contained program. Holly followed verbal directions, but did not initiate speech unless it was to say, "no".

Barry and Burlew (2004) used three Social Stories in this intervention. The first two Social Stories focused on choice making behaviors while the third social story targeted play behaviors. The Social Stories were illustrated using pictures of the participants and included descriptions of the settings, environmental cues, behavioral cues, character's thoughts, feelings, and reactions and directive statements. According to Barry and Burlew, the stories were read to the individual participants on a daily basis. After the stories were read the classroom teacher and teacher assistant would create opportunities for the children to practice the skills described in the story.

A single subject ABCD multiple baseline across participants design was used. The target behaviors identified by Barry and Burlew (2004) were choice making and appropriate play. Phase A was a baseline phase, followed by Phase B a teacher lead instruction phase focusing on choice making. In Phase B, two of the Social Stories were read and opportunities were created for the children to practice the skill of choosing a center as described in the Social Stories. The teacher would prompt the students to practice the skills using a prompt hierarchy from least invasive prompt to most invasive prompt. Verbal praise was also provided when children demonstrated the target behaviors. The level of prompting required for each student to choose a center was recorded by the teacher and the teacher assistant as well as the duration of play.

Phase C of the study conducted by Barry and Burlew (2004) consisted of the addition of a third Social Story describing how to play with peers. The teacher assistant read this

story to the children. The children also had access to the previous stories. Then opportunities to practice the target behaviors were created by the classroom teacher. The level of prompting required for each student to choose a center was recorded by the teacher and the teacher assistant as well as the duration of play.

In Phase D, the Social Stories were read in the morning and available in the classroom. The teacher intervention during center time was discontinued. The level of prompting required for each student to choose a center was recorded by the teacher and the teacher assistant as well as the duration of play. Interobserver agreement data were collected on 33% of the intervention sessions. Barry and Burlew (2004) reported interobserver agreement for choice making was 100% and was 97% for duration of play.

The results of the study showed a decrease in the level of prompting required for each student as well as an increase in the duration of play. Barry and Burlew cited limitations of the study included possible confounding variables of possible cumulative effects of the intervention, peer modeling, the use of only two students, and lack of explicit descriptions of how the teacher created opportunities for students to practice the skills described in the Social Stories. The samples of the Social Stories were not included in the article, making replication difficult.

Another study that combined a Social Story intervention with a tangible reinforcement system was conducted by Agosta et al. (2004). This study of Social Stories was implemented for a six-year old boy with autism. The participant in the study had limited language abilities. He was able to repeat one to two word utterances for desired objects and he used an augmentative communication device as well as a picture exchange system, but only when prompted to by the classroom teacher.

The boy was exhibiting difficulty during group circle time activities. The target behaviors identified by Agosta et al. (2004) included screaming, yelling, crying and humming. In order to obtain a frequency count of the behaviors, the behaviors were a 15 second interval recording system was implemented during a 20 minute data collection period. Duration data were also collected to ascertain the amount of time spent between screams.

Two Social Stories were prepared by Agosta et al. (2004) to teach more appropriate responses. The Social Stories were created using the guidelines suggested by Gray and Garrand (1993) with the addition of pictorial icons from Boardmaker: The Picture Communication Symbols (Mayer-Johnson, 2003). One sentence was included on each page of the Social Story along with the coordinating picture icon.

Baseline data were collected for nine days. After this, Agosta et al. (2004) implemented the first intervention phase was implemented. During phase two, the Social Stories were read to the student prior to his transitioning to the circle time activity. In this first intervention phase, the use of a tangible reinforcement system (a smiley face that could be exchanged for candy after five minutes of acceptable behavior) was included in the Social Story. As data were collected over nine days the researchers discovered the student was not interested in the tangible reinforcement system. During the second intervention phase, the tangible reinforcement system was removed from the intervention. Data were collected for nine days. Then the intervention was removed and data were collected for nine more days.

Agosta, et al. (2004) found the intervention to be successful in reducing the target behaviors as well as increasing the amount of time between screams. The baseline data

on the number of screams showed a downward trend, so it is hard to ascertain from the chart whether this is a result of the intervention alone or whether the student was already learning behaviors. When Agosta et al. examined the data for the amount of time the student spent sitting quietly, a significant improvement was demonstrated.

The limitations of the study included only one participant, the downward trend during baseline, a lack of mention of treatment integrity and inter-observer agreement data. Agosta et al. (2004) also did not list number of times the story was reread to the student during the large group time. Replication of this study should address these points to strengthen the results of the study findings.

Teacher prompts. Marr, Mika, Miaglia, Roerig, and Sinnott (2007) used a modified version of a social story to increase the on task behavior of students with autism during a preschool circle time activity. Using an ABA design, a Social Story written specifically for sensory activities, called a Sensory Story, was used with cues to assist the students in dealing with possible aversive sensory stimuli. There are thirty pre-written Sensory Stories that were included in this study, but no additional information was presented about the story construction or composition.

Four students with an average age of four years eight months participated in the study conducted by Marr et al. (2007). *The Short Sensory Profile* was administered for each child and a Time Sampling Data Form was developed by the authors as a method of recording the 10 second interval observations. Marr et al. collected data on the frequency of leaving their seat for two students, the frequency of tantrum behaviors for one student, and the frequency of engagement in stereotypic behaviors. Interrater reliability data was

collected and the mean agreement was 94.1% (range 77-100%) during the observation period.

Since the behaviors were occurring during circle time for four of the students, data were collected by Marr et al. (2007) on those students. The target behavior for three of the students was to stay seated during the activity while the target behavior for the fourth student was to decrease stereotypical behaviors. Baseline data were collected over four days, the intervention phase lasted for two weeks then the return to baseline occurred again for four days. Marr et al. found the intervention significant for three of the four students with p=.004 for those students. Some limitations of the study included a short baseline phase, small sample size and use of convenience sampling. Additional research is needed to evaluate the effectiveness of Social Stories used for sensory skills.

Crozier and Tincani (2005) examined the use of prompts with Social Stories to determine the effectiveness of Social Story intervention on talking out behavior. The participant was an eight-year old boy. Diagnosed with autism, the student attended a private school. Crozier and Tincani used teacher interviews and direct observation to identify the target behavior of talking out during independent work time. The intervention took place in the classroom. The incidents of talking out were recorded using an event recording session over a 30 minute observation period.

Crozier and Tincani (2005) used a modified Social Story which contained descriptive perspective and directive sentences but used a ratio of 3:5 instead of the recommended 1:2-5. The story did not include words that could be ambiguous such as sometimes or usually due to the literal translation that can be made by students with autism. Using an ABAC design, baseline data were collected for five days. Then the intervention was

implemented for six days with a return to baseline of six days, and then the social story with prompts phase was used for six days.

A training session occurred on the first day of the intervention. Crozier and Tincani (2005) describe this session as the author reading the story with the student and asking questions to ensure comprehension. The story was read with the student before independent work time. During the first phase of intervention, the author checked for comprehension. During the social story with prompts phase, the identical procedure was used for the initial reading, with the intervention of verbal prompts given on an interval schedule equal which averaged to about one prompt every six seconds. Crozier and Tincani conducted maintenance probes two weeks after the final intervention session. Treatment integrity data was collected and rated at 100%, while interobserver agreement data was collected and averaged at 90%.

During baseline phase, the number of talk-outs averaged to 11.2 during a 30 minute period. The intervention phase of Social Story-Only showed a decrease of talk-outs to 2.3 per 30 minute observation period. In the second baseline phase, Crozier and Tincani (2005) reported the talk-outs increased to an average of 8 per a 30 minute period, while decreasing to 0.2 per 30 minutes during the final intervention phase of Social Story-Plus verbal prompt phase. The talk-outs during the maintenance phase were 0 per 30 minute observation period. The modified Social Story was successful in reducing the number of talk-outs. Crozier and Tincani (2005) recommend that researchers examine the use of prompts in combination with Social Stories as well as studying the different applications of Social Stories. Studying Social Stories with young children that use picture-based depictions of classrooms could also be the source of future research.

Continuing the research on Social Stories combined with verbal prompts, Crozier and Tincani (2007) conducted an additional study. Using three children with autism attending an inclusive preschool setting, Crozier and Tincani implemented a single subject ABAB design for two students and an ABCABCB multicomponent reversal design for the third student. Both Thomas and Daniel were three years nine months old boys, while James was five years one month old. The target behaviors for the study were determined by the observer after interviews with the teachers and classroom observations. The target behavior for Thomas was sitting appropriately during circle time, with duration recording used to identify time engaged in sitting. The target behavior identified for Daniel was talking with peers during snack time, and the target behavior for James was appropriate play in the block center. Event recording was used for both Daniel and James.

The Social Stories constructed by Crozier and Tincani (2007) were printed on 8.5 by 11inch paper in 14 point Times New Roman font with one sentence and simple color icon per page. The stories complied with Gray's (2000) guidelines for Social Stories. The text for the Social Stories was included in the article. During baseline (A) data were collected on each of the participants over 10 minute observations to assess the occurrence of the target behaviors. During the intervention phase (B) the Social Stories were read immediately before the target activity. The first baseline period implemented by Crozier and Ticani ranged from five to eight days, depending on the data collected. Phase B for Thomas and James was seven days and five days for Daniel. Crozier and Tincani report at this point no intervention effect was seen for Daniel, so a second intervention was

implemented combining Social Stories with Teacher Prompts. To ensure the treatment effect an ABCACBC design was used.

Thomas and James returned to baseline and then ended with the Social Story-Only intervention. Maintenance probes were conducted at two and three weeks. Thomas' sitting improved from 16.4% to 80.4% during the second intervention phase. James averaged 5.71 inappropriate behaviors which dropped to 1.8 during the second intervention phase. His appropriate play behaviors averaged 1.14 during the initial baseline phase and increased to an average of 17 per session.

As reported by Crozier and Tincani (2007), Daniel averaged 0.2 and 0.6 interactions during the baseline and Social Story-Only phase. This changed to 4.7 prompted interactions and 4.3 unprompted interactions during the Social Story –Plus Prompt phase. This increased to 7.5 prompted and six unprompted interactions during the final Social Story-Plus Prompt phase. The results indicate Social Stories have an effect on behaviors.

Crozier and Tincani (2007) listed possible limitations to the study. First, the experimenter was not part of the children's classroom staff. A second limitation may be the use of a reversal design, which may not have given enough time for a treatment effect to take hold. Third, Crozier and Tincani stated the lack of a prompt only condition for Daniel. Since this condition was not implemented, it cannot be determined whether the prompts alone were sufficient to elicit behavior change or whether it was the combination of the Social Story-Plus prompts. Crozier and Tincani recommended future research examine techniques for fading the Social Story from classroom instruction, additional research conducted with preschool children with autism, and whether or not three weeks is sufficient time for the intervention.

Video modeling. Scattone (2008) implemented a Social Story intervention combined with video modeling to improve the social behaviors of a nine year old boy with Asperger's Disorder. Matthew, the participant in the subject, demonstrated poor eye contact and had difficulty with reciprocal conversation. He often participated in speech that was one sided and classified as perseverative. Matthew had a Composite IQ score of 109. His mother and his teacher had attempted to teach him conversational skills in the past, but Matthew did not show improvement in this area.

There were three targeted social skills used in the Social Story intervention implemented by Scattone (2008)—eye contact, smiling, and initiations. Eye contact was considered looking at the person he was conversing with for three seconds or more. Smiling was operationally defined as either grinning or laughing. Scattone defined initiations as unprompted questions or comments that Matthew made to his partner.

The Social Stories were developed by Scattone (2008) according to the guidelines described by Gray (2000). All stories were between six to 10 pages in length. An adult narrated the stories on the video which also showed the wording of each page. Two adults modeled the target skills on a five minute video taped conversation. Initial viewing of the video tape occurred in the clinical setting. Then he was allowed to view the video at home in the evening. The video was also shown just before data collection.

Using a multiple baseline across behavior design, Scattone (2008) implemented the intervention at a medical center over a period of 15 weeks. The study consisted of 24 total sessions. One to two times per week, data were collected using a 10 second partial interval recording. The participant was videotaped interacting with an adult for five

minutes after viewing the video. Probe data were also collected during lunch time at Matthew's school.

At baseline, the mean level of eye contact was reported by Scattone (2008) at 6% and then at 97% during the intervention phase. Smiling was reported at 0.6% during baseline and 7% during the intervention. A baseline of 8.8% was reported during baseline for initiations and 33% during intervention. The probe data taken at school also improved to 63% for eye contact, 23% for smiling and reciprocal interactions at 20% of the intervals.

Scattone (2008) reported the intervention to be success for the participant with an immediate effect noted for eye contact. Even with the success of the intervention, Matthew's mother reported difficulties in maintaining his interest over the period. Another limitation of the study is the introduction of video modeling and Social Stories at the same time. Scattone recommended additional research to ascertain the effect of each intervention. Only one generalization probe and the small sample size indicate a need for caution when generalizing the results of this study.

Another intervention using video modeling was implemented by Theimann and Goldstein (2001). This study used a Social Story intervention combined with written text cues and video feedback to improve the social communication skills of five students with autism. Participants were chosen for the study if they demonstrated deficits in social communication while having functional verbal communication, emerging reading skills and they were included in general education for all or a portion of their day.

As reported by Theimann and Goldstein (2001), Dan was an 11- year-old boy with autism who was fully included in his fifth grade classroom. He comprehended sentence level text. Dan made few initiations with his peers and used simple sentences during his

communication which was typically directed at adults. Greg was a seven year old boy with autism who attended a first grade classroom for approximately a third of his day. Greg was able to make verbal requests and comment, although he demonstrated significant delays in his grammar. John was an eight-year-old boy with mild to moderate autism. He was fully included in his first grade classroom and tended to converse using scripts from movies or video games. Casey was a six year old boy with autism who was included in his first grade classroom for approximately one third of his day. He demonstrated characteristics of hyperlexia and often had echolalic utterances. Casey seldom initiated interactions with his peers. Finally, Ivan was a fully included 12-year-old boy with autism. He tended to avoid interaction with his peers socially, but would converse with adults on topics he found interesting. Ten typical peers also participated in the study. The peers were selected on the basis of language skills, social modeling and their ability to complete assigned class work in a timely fashion. The students participating in the study were placed in triads containing one child with autism and two typically developing peers, one boy and one girl.

The targeted behaviors were operationally defined in the study by Theimann and Goldstein (2001) and included initiating comments and requests, securing attention, and appropriate contingent responses. Thiemann and Goldstein also measured the number of inappropriate responses for each student. Frequency counts were collected in one minute interval timings over a 10 minute social interaction period.

The intervention periods were divided into three sessions. The first section was a 10-minute instruction, followed by 10 minutes of social interaction and finalized by 10-minutes of video feedback. Theimann and Goldstein (2001) report that during the

instructional period, the participants read one social story based on a targeted behavior and upon completion was asked four or five questions to assess the participants comprehension of the story. When the participant reached 75% accuracy in answering questions, the triad was united to look at a picture with written text cues of two children performing the targeted skill. The child with autism would rehearse the conversation written on the text cue.

At this point, the three children in the triad engaged in a 10-minute social interaction. If the focus child did not spontaneously use the target social skills during the first minute, the examiner would provide a visual or verbal prompt as instructed by Theimann and Goldstein (2001). Casey was dependent on adult prompting, so his peers in the triad were taught to provide the prompts for him. Only the students with autism were provided prompts. After the session, the students sat in front of a television with a clip board that listed the targeted skill and a yes or no column. The video tape was shown and after a conversational exchange, the children circled yes or no if they heard examples of the targeted social skill. The tape was paused a minimum of three times. If the focus child did not demonstrate the targeted behavior during the course of the video play back, peer modeling was provided for him.

A maintenance phase and generalization probes were included by Theimann and Goldstein (2001) as part of the study. All students showed an increase in their ability to initiate comments and secure attention. Theimann and Goldstein reported four out of five students showed an increase in contingent responses and inappropriate responses decreased for three students in which data were collected. These skills were maintained

at a higher level than baseline for three of the five boys when the maintenance data and generalization probes were conducted.

The intervention combined Social Stories with video modeling and written text cues increased the social interaction for five boys with autism. Theimann and Goldstein (2001) state interventions improving social skills may assist the child in improving daily classroom interactions. The researchers report the study results support the use of text based visual cues for children with autism. The only limitation noted by the authors is the ability of the findings to assess the effectiveness of social skills as an intervention used to improve social and behavioral skills for children with autism. Additional research is recommended in this area.

Additional strategies. Haggerty, Black and Smith (2005) combined a Social Story intervention with an apron storytelling intervention to decrease the number of frustration behaviors exhibited by a 6.5-year-old boy (Kirk) of multiethnic decent. The child exhibited behaviors consistent of a child with a learning disability, but was not formally assessed per parent request. Kirk would exhibit frustration behaviors that interfered with his learning.

The teachers constructed a Social Story following the guidelines set forth by Gray and White (2002). Haggerty et al. (2005) constructed the stories with four to six sentences written on a nine by 12- inch construction paper page. Each page contained a picture of Kirk. The stories also contained drawings from Kirk as he enjoyed looking at his artwork. Haggerty et al. (2005) felt this would increase his ownership of the stories. Also constructed was an apron that Kirk could wear. The apron contained felt pieces that

Kirk could use to act out parts from the Social Story. Baseline data was collected for four weeks.

Haggerty et al. (2005) introduced the story during 10 minutes of the morning language arts activity. The teacher would read the story and Kirk would practice the frustration reducing techniques (e.g. breathing, counting to 10). He also read the story at home with his mom on Monday through Friday during the four week intervention. After two weeks of the intervention, the Apron Storyboard was introduced. While the teacher read the Social Story, Kirk would act out the skills using the storyboard felt pieces.

Haggerty et al. (2005) reported the number of frustration behaviors during the four week baseline period was 30 (M= 7.5, SD=1.91). During the intervention phase, Kirk reduced his frustration behaviors by 20% with a total number of 12 behaviors counted (M=3.0, SD=1.41). The duration of the frustration behaviors during the baseline period totaled 159 (M=39.75, SD= 24.80). This reduced 82% to a total of 28 minutes (M=7.0, SD=4.76) during the intervention phase. The effect size for the difference in duration was r = 0.68. The intensity level of frustration also decreased by 79%.

Limitations reported by Haggerty et al. (2005) included the use of one participant, the experimental design which did not allow the establishment of a functional relationship, and allowance for the possibility that the specialized attention had an effect on the outcomes. With the inclusion of two interventions at the same time, there is no method of ascertaining which intervention had the primary effect.

Story telling took the form of comic strips in a study conducted by Rogers and Myles (2001). Social Stories were used in conjunction with a comic strip conversation format to assist an adolescent with Asperger Syndrome in interpreting social situations. The

student attended school as a 14 year old and viewed himself as having many friends, even though Rogers and Myles reported the people he viewed as friends did not even know his name. He seldom had interactions with the students. When he did have interactions with students in the resource room, his interactions were not always positive. Most of his behavior problems that were noticed in the classroom were after the lunch period. Teacher's described the student as confused. They noted behaviors such as making facial grimaces, flapping hands and talking to himself as well as pacing in front of his locker instead of changing clothes for physical education. He required several prompts to get ready and even with prompts he was late for class.

Rogers and Myles (2001) noted the resource teacher intervened for the first week by having a daily discussion with the student before he went to lunch with the intent of assisting the student in getting to physical education class on time. This happened during the first five days of the intervention. Then Social Stories were implemented by the resource room teacher. Physical education class was immediately after the lunch period. The student read the stories with the teacher before lunch for five days to help him interpret situations that he was having difficulty interpreting during the lunch period. After the first five days of the intervention, the resource teacher elaborated on some of the situations the student was seeing and revised the social story. Two days after the revision, the comic strip format was introduced to identify specific situations the student was finding problematic.

Rogers and Myles (2001) measured the success of the intervention by comparing the number of redirections the student required to get to physical education class as well as the number of minutes tardy the student was for physical education. During the

discussion only phase, the student was late an average of 7.4 minutes and needed an average of 13 redirections. While implementing the first Social Story, Rogers and Myles reported the student was not late and averaged 13.75 redirections. During the revised Social Story phase, the student continued to be on time for class with an average of 6.5 redirections. During the last phase of the intervention, the comic strip phase, the redirections reduced to three and he was on time.

Rogers and Miles (2001) reported that the student's behavior changed and hypothesized that the comic strip conversations were most effective in helping the student interpret social situations. However, the comprehension of social situations was not measured in the study. The amount of redirection and tardy minutes showed an increase in the student's on time behavior, but is not a measure of the student's ability to understand social situations.

Hagiwara and Myles (1999) used a Multimedia Social Story to effect hand washing and on-task behavior for three boys with autism. Using a multiple baseline across settings design, Hagiwara and Myles developed a Social Story for each child using multimedia software that looked like a book and included the text of the Social Story along with movies of the participants engaging in the target behaviors. The program contained read-aloud sentences and was easily navigated by the participants.

Participants in the study conducted by Hagiwara and Myles (1999) included boys enrolled in self contained and inclusive school settings. Participants one and two were caucasian boys, seven-years-11-months of age, and nine-years-11 months old respectively, and enrolled in an inclusive setting for most of the school day. Participant three was a caucasian boy, seven years three months old who spent half of his school day

in a resource room and half of his school day in an inclusive setting. Hagiwara and Myles collected data in three settings for each student. Data on hand washing behavior for participant one were collected before morning snack, prior to lunch and after afternoon recess. Data on hand washing behavior for participant two were collected before going to the resource room, before going to lunch and after recess. Data for on-task behavior for participant three were collected at lunch, in the resource room and in the general education classroom.

The Social Stories used by Hagiwara and Myles (1999) were validated by five educators and professors with experience in creating social stories. The Social Stories followed the guidelines provided by Gray (1995) and Gray and Garrand (1993). Prior to entering each setting, the students viewed the Social Story which was written for each specific environment. Then the students entered the environment and behavior was recorded for participants one and two during hand washing periods and participant three's behavior was recorded during a 20-minute period upon entering the environment. Data for hand washing were coded by level of prompting required by the participants. Duration of time on task was recorded for participant three.

Task accuracy for participant one was reported by Hagiwara and Myles (1999) at 100% completion on the last day of the intervention across settings compared to a range of 75% to 85% during baseline. Task accuracy for participant two improved slightly over the course of the intervention. The duration of on-task behavior also improved for participant three, however there was a lack of opportunity to observer the participant in the general education setting as his participation in the general education setting was

contingent upon the type of behaviors occurring in the setting. Hagiwara and Myles reported no stable change for him in this setting.

Two main limiting factors are listed by Hagiwara and Myles (1999). The first was the duration of the interventions, while the second related to lack of consistency across settings. Hagiwara and Myles recommended future studies examine the use of computers as tools for intervention.

Summary of Social Story Interventions

When examining the research conducted using Social Story Interventions, there are several inconsistencies in the published studies. First, most of the Social Story interventions are implemented with children who are not of preschool age. There were very few participants who were not enrolled in an elementary age or older classroom. Secondly, the research has not been implemented using consistent methods. Some of the areas of inconsistency included the length of time between the intervention and the expected target behavior, using stories to increase or decrease targeted behaviors, and implementing Social Story interventions in conjunction with other intervention strategies.

Finally, there was a large degree of variance in the construction of the Social Stories. These differences occurred in terms of the length of the Social Story, the number and types of sentences included in the Social Story as well as the use of pictures with each Social Story. Although many researchers report following published Social Story guidelines, there were differences among the construction of the Social Stories. Along with the inconsistencies found in the published Social Stories, many of the studies also implemented a single subject research design with a small sample size of students.

Summary

While examining the acquisition of social skills in preschool age children it is important to note that a decrease in negative behavior does not necessarily constitute an increase in social skills. Although social skills are noted to have a great impact on children's success as they transition into Kindergarten (Blair, 2002; Brigman et al., 1999; Raver, 2004) there is little research studying direct social skill interventions. Effective strategies found in the current research include studies that use teacher modeling, opportunities for practicing social skills and natural settings. More research is needed to identify research methods that can be easily implemented in inclusive settings with preschool age children with and without disabilities.

CHAPTER 3

METHOD

Social skills have been a key indicator of student success in and out of the classroom (Brigman, et al., 1999; Elliot & Gresham, 1993; Wilson & Shulha, 1995). However, children with disabilities often experience difficulty acquiring social skills (Brown, 2001; Hall, Peterson, Webster, Bolen & Brown, 1999; Odom et al., 1999). Because of the importance of social skills for a child's future classroom success (Brigman et al., 1999), it is important to identify researched-based interventions that target social skills for preschool-age children.

This study compared the impact of a Social Story-Only intervention to a Social Story-Plus Practice Session intervention on the social skills of preschool children with and without disabilities in an inclusive preschool setting. Both interventions were designed to increase the social skills of preschool students with and without disabilities. The findings contributed to the knowledge base of effective strategies involving: (a) the use of Social Stories with preschool-age children who are typically developing, (b) the use of Social Stories for preschool-age children with disabilities, and (c) the use of Social Stories combined with a practice session for preschool-age children with and without disabilities. Data were collected over a 10-week period including pretest, posttest, and maintenance. The social interactions of children with and without disabilities were examined.

The study included 32 children, 16 children with disabilities and 16 children without disabilities. The children were divided into groups of four children with each group containing two children with identified disabilities and two children who did not have identified disabilities. The quads were subdivided into two intervention groups. Each

intervention group contained four groups of four children (two with disabilities, two without disabilities). The first intervention group participated in a Social Story-Only intervention, while the second intervention group participated in a Social Story-Plus Practice Session intervention. The groups of children were selected to include children who were in the same class, of the same gender, and who attended the preschool on the same schedule. The students in the first intervention group listened to a Social Story and then entered a play session with the members of their group. The students in the second intervention group listened to a Social Story and participated in a practice session before entering a play session with the members of their group.

The Social Stories were written using the recommendations outlined by Gray (2004) and were implemented with both intervention groups using the same center and play materials each day. All play sessions were video recorded. Pre-and post-measurements of social skills were collected using the *Teacher Impression Scale* (Odom & McConnell, 1997), and social interaction observations will be analyzed using the *Social Interaction Observation System* (Kreimeyer et al., 1991).

Research Questions

This study focused on two questions.

1. Do classroom teachers perceive children in the Social Story-Plus Practice Session group as improving their social skills more than the Social Story-Only group as measured by the *Teacher Impression Scale* (Odom & McConnell, 1997). It is predicted teacher's perceptions of the social skills of children with and without disabilities in the Social Story-Plus Practice Session group will improve their

social skills more than children with and without disabilities in the Social Story-Only intervention.

2. Do children with and without disabilities in the Social Story-Plus Practice Session group have more effective social behaviors and less ineffective social behaviors than children with and without disabilities in the Social Story-Only group as measured by the *Social Interaction Observation System* (Kreimeyer et al., 1991). It is predicted children with and without disabilities receiving the Social Story-Plus Practice Session intervention will engage in more effective social behaviors and less ineffective social behaviors than children in the Social Story-Only intervention group.

Participants

Students

The students in this study were selected from children attending a community-based inclusive preschool program located in a middle class neighborhood of a large city in southern Nevada. The ages of the children in the preschool program ranged from 36-72 months. The children were selected from three preschool classrooms. Only children who had a signed Parent Permission Form participated in this study (see Appendix A).

Children with disabilities. Sixteen children with disabilities attended the preschool program and participated in the study (see Table 1). Children with disabilities met the criteria for participation in this study if they: (a) qualified for early childhood special education and /or related services under the State of Nevada Special Education regulations, (b) had a current Individualized Education Program (IEP) allowing them to

receive special education and /or related services, and (c) had signed parent permission forms to participate in the study. A child in Nevada qualified for early childhood education and related services when the child is evaluated and determined to have one of 14 disabilities (autism, deaf-blindness, deafness, developmental delay, hearing impairment, mental retardation, multiple impairments, orthopedic impairments, other health impairments, serious emotional disturbance, specific learning disability, speech or language disorder, traumatic brain injury, and visual impairment) as defined by the Nevada Department of Education (2006) in the Nevada Administrative Code, sections 388.287 to 388.430. The disability must impact the child's ability to access the general education curriculum, causing a need for special education and /or related services. Demographic information will be collected for each child who participates in the study (see Table 1).

Children without disabilities. Sixteen children without disabilities were selected for this study. Children without disabilities were considered for the study if they: (a) did not qualify for special education and /or related services, (b) did not have a current IEP, and (c) attended class at the same time as the children with disabilities. Two classrooms had approximately 30 children who attended the school throughout the week, while the third classroom had approximately 20 students. Thus, there was a potential pool of approximately 80 children without disabilities from which to randomly select participants without disabilities for this study. Parent Permission forms (see Appendix A) were placed in each student's backpack, and additional forms were available at the sign in area. These forms were returned to the classroom teachers, the special education teacher assistant or the researcher. The names of children without disabilities were placed in a

container and selected randomly for each classroom. If there were enough children with signed permission forms to use random sampling, a convenience sample was used. Children were not considered if they had limited English proficiency or were currently being evaluated to determine if they had a disability through Child Find. Demographic information was collected for children without disabilities (see Table 1).

Quads of children with and without disabilities. Two children with disabilities were grouped with two children without disabilities. To group the children the names of the children with and without disabilities were sorted by class, schedule and gender, and then placed into separate containers. One container was for children with disabilities and one container was for children without disabilities. In the event that there were uneven gender groups, boys were grouped with girls. First the names of two children with disabilities were drawn. Then the names of two children without disabilities were drawn and grouped with the children with disabilities. This process was repeated for each child until eight groups of four children were created. At this point, the groups were stratified to ensure: (a) children with more severe disabilities were evenly distributed amongst the intervention groups as well as the quads, and (b) children were placed with other children who they tended to have conversations with in the classroom setting (see Table 2).

Classroom Teachers

Two classroom teachers were scheduled to participate in this study. The classroom teachers were responsible for implementing the Social Story-Only intervention as well as the Social Story-Plus Practice Session intervention. One classroom teacher had worked

Table 1

Demographics of Children With and Without Disabilities

Characteristics	Social Story-Only Group	Social Story-Plus Practice Session Group
Male	11	11
Female	5	5
Total	**16**	**16**
Age (in months)		
Mean	56.1	50.4
Range	50-65	39-62
Ethnicity		
Caucasian	10	10
African American	4	1
Hispanic	2	4
Asian / Pacific Islander	0	1
Disability		
Developmental Delay	5	6
Autism	2	2
Other Health Impairment	1	0
Total	**8**	**8**

at this preschool center for eight months and had five years of preschool experience at other settings. She was enrolled in a Child Development Associate (CDA) credentialing program.

The other classroom teacher had worked at the center for eight months and was enrolled in a CDA credentialing program provided by the preschool with courses offered through the Nevada Registry. Even though there were three classrooms that were used in this study, only two teachers were scheduled to participate. The third teacher monitored children while they napped. The students from the third classroom attended another classroom while their peers napped. This occurred on a daily basis, so the students were accustomed to receiving instruction from the other teacher. Demographics of the teachers are provided (see Table 3). The classroom teachers were originally scheduled to sign Informed Consent Forms as part of their participation in the study, but in alignment with the recommendations of the University of Nevada Las Vegas Office for the Protection of Research Subjects Institutional Review Board, the classroom teachers completed the Collaborative Institutional Training Initiative (CITI) training through the University of Nevada Las Vegas Office of the Protection of Human Subjects in lieu of the informed consent forms. This training was required in order to obtain research approval.

School District Teacher Assistant

The special education teacher assistant also participated as an interventionist in the study. During part of the afternoon, the classroom teacher was out of the room, so the school district teacher assistant assumed many of the teaching responsibilities. The

Table 2

Playgroups of Children With and Without Disabilities

Group	Room / Intervention	Children w/ Disabilities	Age in Months	Disability Category	Children w/o Disabilities	Age in Months
1	1 Morning/	David	47	DD	Aidan	44
	SS-Only	Mark	44	ASD	Doug	45
2	1 Morning/	Trevor	50	DD	Jack	48
	SS-Only	John	50	DD	Don	52
3	1 Morning	Karen	39	OHI	Amy	51
	SS-Only	Lucy	47	DD	Janie	53
4	2 Morning	Mike	55	DD	Carl	58
	SS-Plus	Mary	56	DD	Elise	58
5	2 Morning	Tim	65	DD	Krista	61
	SS-Plus	Jeff	56	DD	Jim	58
6	2 Morning	Brad	57	ASD	Chris	56
	SS-Plus	Adam	53	ASD	Alex	58
7	2 Afternoon	Steve	53	DD	Randi	53
	SS-Plus	Susan	50	DD	Mia	52
8	2 Afternoon	Ed	55	DD	Anna	59
	SS-Only	Cory	60	ASD	Greg	60

Note. DD indicates Developmental Delay. ASD indicates Autism Spectrum Disorder. OHI indicates Other Health Impairment. The age listed is at the start of the study.

teacher assistant had not attended college and did not hold a CDA, but had worked in the school district for 15 years. During two years of her career she was a teacher assistant in the school district model autism program. She had extensive training in working with children with disabilities and had worked at this particular preschool site for a year and a half. Demographics of the teacher assistant are provided (see Table 3). The special education teacher assistant was originally scheduled to sign Informed Consent Form as part of her participation in the study, but in alignment with the recommendations of the University of Nevada Las Vegas Office for the Protection of Research Subjects Institutional Review Board, the special education teacher assistant completed the Collaborative Institutional Training Initiative (CITI) training through the University of Nevada Las Vegas Office of the Protection of Human Subjects in lieu of the informed consent forms. This training was required in order to obtain research approval.

Substitute Classroom Teacher

A substitute classroom teacher also participated in the study. This teacher covered the classroom when the classroom teacher was called to a meeting, was on a break, or at lunch. This teacher had been at the preschool for ten months and was familiar with the students in both classrooms. She had worked in preschool settings for approximately six months and was enrolled in a CDA credentialing program. The substitute classroom teacher was trained in the Social Story-Plus Practice Session intervention and also completed the CITI training course provided by the University of Nevada Las Vegas Office of the Protection of Human Subjects in lieu of the informed consent forms.

Table 3

Demographics of the Teacher Participants

Teachers	Age	Gender	Ethnicity	Education	Preschool Experience
Teacher A	45	Female	Caucasian	High School Diploma Plus CDA Credits	68 months
Teacher B	38	Female	African American	High School Diploma Plus CDA Credits	8 months
Special Education Teacher Assistant	52	Female	Caucasian	High School Diploma Plus Extensive Staff Development	18 months
Substitute Teacher	50	Female	Caucasian	High School Diploma Plus CDA Credits	8 months

Note. CDA indicates Childhood Development Associate Certification

Teacher Participants Roles

During phase one of the study, before the start of the baseline period, the classroom teacher scheduled to implement the Social Story-Only intervention was asked to leave her position. She was replaced by the person who was scheduled to be trained as the substitute teacher for the study. Because of this change, and to ensure consistency in implementation, the specialized program teacher assistant implemented the Social Story-Only intervention for all participants of the study. Since this teacher assistant had greater

knowledge of the participant's current levels of social skill functioning as she worked in the classrooms daily, she was selected to complete the *Teacher Impression Scales* for the students in the Social Story-Only classroom.

Fidelity of Instruction Checker

The Fidelity of Instruction was checked by the researcher. The researcher was also the special education inclusion teacher who worked in each classroom. This teacher had taught for 15 years, had a master's degree in special education and was enrolled in a doctorate degree program. For each intervention session, a Fidelity of Instruction Checklist was completed (see Appendix B).

Reliability Checkers and Interrater Observer

One individual assisted in completing the Reliability Checks and Interrater Observations for this study. Observer A was a 28 year old caucasian female with a master's degree in early childhood. She was teaching in an early childhood autism program and had five years of teaching experience. Observer A assisted in completing reliability checks by scoring the *Teacher Impression Scale* (Odom & McConnell, 1997). This ensured accuracy in scoring. To obtain interrater reliability, Observer A viewed and scored 25% of the video sessions using the *SIOS* (Antia, Kreimeyer, & Eldredge, 1990).

Setting

School District

The local school district provided special education services for approximately 3700 preschool-age children with disabilities each year as reported by the 2006-2007 region accountability report (Alfaro, 2008). In order to provide inclusive services for preschool-

age children with disabilities, the school district entered into an interagency agreement with the local preschool. Under the terms of this agreement, the preschool accepted children with disabilities, tuition free, in exchange for supplies and staff support from the school district. There were 17 community-based preschool inclusion programs in the district. The study was conducted in one of the community-based preschool inclusion programs.

Preschool

The preschool center was located in a middle class neighborhood in a large city in southern Nevada. The preschool was a locally owned and operated learning facility that had been providing child care programs within the city for 25 years. The agency provides child care for children 18 months to elementary school-age. There was a wide representation of the ethnic groups among the preschool students and staff (e.g., European American, African American, Hispanic American, Asian American, Native American, and students from the Middle East). The preschool offered tuition discounts to children who attended Head Start. This preschool adhered to the philosophy of inclusion and accepted many children with disabilities into the preschool and elementary-age programs. Approximately 12% to 20% of the preschool-age children who attend the preschool each year were children with disabilities.

Classrooms

The preschool was divided into classrooms based on the ages of the children and the enrollment of the school. At the time the study began there were four classrooms that served children in the preschool age range (three to five years). One classroom did not participate in the study because it provided services to children who were below the

school district age criteria of 36 months. Children from three different classrooms participated in the study. The ratio of students to teachers in the preschool classrooms used in the study was approximately 18:2 in the morning and 24:3 in the afternoon. This ratio included the school district support staff assigned to the site.

Instrumentation

Teacher Impression Scale

Several instruments were used in this study. Permission was granted to use the *Teacher Impression Scale* (*TIS*) (Odom & McConnell, 1997) for this study (see Appendix C). The *TIS* (Odom & McConnell, 1997) was an informal rating scale based on 16 likert- type items (see Appendix D). The items on the *TIS* represent skills necessary for successful peer interactions in a preschool setting (e.g. spontaneously responding to peers, continuing interactions, seeking social play, taking turns, and conversing appropriately). The items in the scale were correlated to the Social Story target behaviors (e.g. joining in, sharing toys, asking to join a play group). Classroom teachers rated a child on the *TIS* items on a scale of 1 to 5 (1 being the child never performs skill, to 5 meaning the child frequently performs the skill). The two classroom teachers and the special education teacher assistant completed the *TIS* for each student as a pre-intervention, during intervention and post-intervention assessment for children participating in the study.

Social Interaction Observation System

Permission was granted to use the *SIOS* (Kreimeyer et al., 1991) in this study (see Appendix E). The *SIOS* was tool designed to describe the behaviors of child interactions

with their peers in a free-play situation (see Appendix F). The behaviors were grouped into effective (e.g. positive interactions with peers, positive linguistic interaction, initiating interactions with peers) and ineffective behaviors (e.g. hitting, kicking, refusing to let a peer play, responding negatively to initiation). The *SIOS* was an interval recording tool. During each interval the students were rated on whether they were observed engaging in the 15 behaviors described in the *SIOS*. The students were rated over four, one-minute interval periods. The students were scheduled to be observed eight times during the study with each observation occurring one week apart. However, one classroom teacher ended the study a week earlier than designed so the students were only observed seven times.

Fidelity of Instruction Checklist

A *Fidelity of Instruction Checklist* was used to ensure treatment fidelity in both interventions (see Appendix B). The researcher observed the interventions as they were implemented and checked the steps as they were completed. If the steps in the intervention were not completed, the researcher prompted the teachers to complete the missing step. If the teacher was adding steps to the intervention, the researcher prompted the classroom teacher to move to the correct step. The *Fidelity of Instruction Checklist* was completed for each intervention session.

Materials

Social Stories

The Social Stories were developed around the social skills contained in *Teacher Impression Scale* (Odom & McConnell, 1997). These Social Stories were written using

the guidelines described by Gray (2004) (see Appendix G). The Social Stories were written on 8.5 inch by 11 inch white paper and had two sentences centered on the bottom of each page written in 24 point Arial font. The Social Stories also contained one picture on each page from the Mayer Johnson (2003) *Picture Communication Symbols.* This picture was four inches by four inches and was centered on the page 1.5 inches from the top of the paper. The title page contained the Title of the Social Story with a picture (see Appendix H). Each page of the Social Story was placed in protective sleeves to provide increased durability throughout the intervention. The protective sleeves were bound by one inch binder rings.

To ensure the Social Stories met the guidelines described by Gray (2004) a two-step validation process was used. First, the stories were reviewed by two early childhood professors at a local university to ascertain their compliance with Gray's criteria and check for social validity. Then, the stories were reviewed by two early childhood teachers and two early childhood special education teachers who work at an inclusive preschool program on the campus of a local university. The early childhood educators and early childhood special educators held master's degrees and had experience implementing Social Story interventions. The early childhood teachers checked for age appropriateness and applicability to an early childhood classroom. Since multiple exposures to stories enhance a child's ability to retell the story as well as integrate the message provided by the author (Pappas, 1991), only one story was used during the four days of each intervention week. This provides a total of six Social Stories (see Appendix H).

Classroom Materials

Other materials used in the study include materials typically found within the classroom. The classroom was composed of learning centers including a *housekeeping area* (with plastic play food, child sized pots and pans, dishes, and dress up clothes), a *center for blocks*, a *library area*, a *sand table*, a *science area*, an *art center* and an *area with manipulatives such as small toys and puzzles*. Each day of the week, a new center was selected so the students can practice the Social Story skills with multiple materials (see Table 4). Week six of the study was not completed due to classroom scheduling difficulties.

Other Materials

A digital camcorder with a tripod was used to record the play sessions. The digital camcorder recorded directly onto a SD card as well as an internal hard drive. Each SD card held over 20 hours of video, so the data from the memory cards were downloaded at the end of each week then transferred to a compact disk. The disks were kept in a locked file cabinet when not in use.

The classroom teachers used a simple digital kitchen timer to time the 10-minute play sessions. Each timer was set for 10 minutes. The classroom teacher started the timer when all the students entered the play area. The timer alerted the teacher at the end of 10 minutes.

Training B. Classroom Teacher B and the special education teacher assistant were trained on the Social Story-Only intervention. This training will lasted 45 minutes consisted of an overview of the purpose of Social Stories, a brief discussion of the components of Social Stories, and then a discussion of how the intervention were to be

Table 4

Social Story Center Rotation Schedule

	Monday	Tuesday	Wednesday	Thursday
Week One	table toys	play dough	housekeeping	blocks / cars
Week Two	play dough	housekeeping	blocks / cars	table toys
Week Three	housekeeping	blocks / cars	table toys	play dough
Week Four	blocks / cars	table toys	play dough	housekeeping
Week Five	table toys	play dough	housekeeping	blocks / cars
Week Six	play dough	housekeeping	blocks / cars	table toys
Maintenance	housekeeping	blocks / cars	table toys	play dough

Note. Table toys include such items as stringing beads, creature builders, dominoes, games and other assorted toys. The items selected for table toys on a particular day will be used during all intervention sessions occurring that day.

Training

Classroom Teachers

Training A. The classroom teachers and special education teacher assistant received training on the *TIS* (Odom & McConnell, 1997). This training session took 30 minutes and consisted of showing the *TIS* to the teachers, reviewing the directions, giving examples and non-examples of each question, and having the teachers complete a practice form. After the training, the teachers completed a form for each of the participating students in their class. A training outline is contained in Appendix I.

implemented in the classroom. Each teacher received a copy of the *Fidelity of Instruction Checklist* (see Appendix B) and together the participants reviewed the procedures for implementing the Social Story-Only intervention. Then, classroom teacher B and the special education teacher assistant practiced reading a Social Story and modeled sending the students to the play session (see Appendix J). Questions were answered throughout the training session.

Training C. Classroom Teacher A and the Substitute teacher were trained on the Social Story-Plus Practice Session intervention. This training lasted one hour and consisted of an overview of the purpose of Social Stories, and then a discussion of how the intervention was to be implemented in the classroom. Classroom Teacher A and the Substitute Teacher received a copy of the *Fidelity of Instruction Checklist* (see Appendix B) and reviewed the procedures for implementing the Social Story-Plus Practice Session intervention. The teachers practiced reading a Social Story and modeled teaching a practice session using the target behavior given with the Social Story. Then they modeled sending the students to the play session (see Appendix K). Questions were answered throughout the training session.

Reliability Checkers

Training one. Observer A participated in this training for the *TIS* (Odom & McConnell, 1997). The *TIS* training lasted 15 minutes and consisted of reading the directions, examining the forms, adding the points on the form, and discussing how to document the scores on the scoring sheet. Observer A practiced scoring a mock *TIS* from reaching 100% accuracy. Appendix L contains an outline of this training.

Interrater Observers

Training two. Observer A participated in the training for the *SIOS* (Kreimeyer et al., 1991). This training took one hour and consisted of reading the directions, reviewing the forms, and answering questions about the forms. It also included practice concerning the scoring of the *SIOS* forms with mock video footage, and discussion of the outcomes of the scoring session. Discussion continued until consensus was reached. Practice scoring the assessments using the video footage continued until 100% agreement was reached over two consecutive trials. An outline of the training can be found in Appendix M. The video clips showed four children playing at a variety of interest areas within the classroom. These interest areas included table toys, play dough, the housekeeping area, and the block and car area.

Design and Procedures

This study was scheduled to be conducted over ten weeks and consist of six phases. The six phases of the intervention included consent, training and group assignment, pre-assessment and training, intervention, post-assessment and maintenance, and post assessment (see Appendix N).

Pre-Phase

Consent. Consent forms were scheduled to be obtained from the classroom teachers, the substitute teacher and the special education teacher assistant during this time. Upon review of the Institution Review Board, the teacher participants were asked to complete CITI certification training in lieu of the informed consent forms prior to IRB approval for the research study. Parents of children in the selected classrooms were asked to consent

to their child participating in a Social Story intervention and play group. The parents were asked to give permission for their child to be video recorded during the play sessions.

Before the start of the study, Parent Permission forms (see Appendix A) were distributed and collected from the parents of the children in the three classrooms. The forms were distributed in two ways. First, a form for each child was placed in the child's personal cubicle where the parents could obtain them when picking up and /or dropping off their child. Second, forms were left by the sign-in station. As the parents checked their children into the preschool using the computer, a clearly visible note was placed next to the computer reminding the parents to sign the Parent Permission Form. The office staff was instructed to direct parents with questions to the researcher who was at the preschool site during this pre-phase period. If forms were not returned after three days, a new form was sent home using the same methods. Only children with signed Parent Permission Forms participated in the study.

Group assignment. Upon receipt of the Parent Permission Forms (see Appendix A), children were selected for the study. Two children with disabilities were grouped with two children without disabilities. To group the children, the names of the children with and without disabilities were sorted by class, schedule and gender. One container was set aside for children with disabilities, and one container was set aside for children without disabilities. Names of the children were first sorted by class then placed in the appropriate container. In the event that there were uneven gender pairs, boys were grouped with girls. First the names of two children with disabilities were drawn. Then the names of two children without disabilities were drawn and grouped with the children

with disabilities. This process was repeated for each child with a disability until eight groups of four children were created. At this point, the groups were stratified to ensure (a) children with more severe disabilities were evenly distributed amongst the intervention groups as well as the quads, and (b) children were placed with other children who they tended to have conversations with in the classroom setting (see Table 2).

Trainings. The classroom teachers participated in trainings during the pre-phase period. Training A prepared the teachers to complete the *TIS* (Odom & McConnell, 1997). This training lasted 45 minutes. In this training, the teachers reviewed the form for the *TIS,* discussing each likert item, review examples and non-examples of each item, and answered questions.

Upon completion of Training A the classroom teachers, the substitute teacher and the special education teacher assistant participated in either Training B or Training C on the implementation of the interventions. Training B lasted 45 minutes and Training C lasted one hour. Both trainings were completed at the center in an unused classroom after the teachers' work day. During these trainings, the teachers familiarized themselves with the Social Stories, reviewed the steps of the intervention, practiced reading a Social Story, conducted a practice session with adults (if applicable), and then discussed questions.

Training One prepared Observer A to score the *TIS* (Odom & McConnell, 1997). The training including a practice sessions took 30 minutes. This training was completed at a mutually agreeable place and time.

Phase One

Pre-test. During the start of week one, the *TIS* (Odom & McConnell, 1997) was scheduled to be distributed to the classroom teachers for each of the children participating

in the study. Since one of the classroom teachers was released from her position, the *TIS* was distributed to the special education teacher assistant to complete for the participants in the Social Story-Only group. The classroom teacher and special education teacher assistant completed the *TIS* for each student. When all of the pre-tests were completed, Observer A independently scored each *TIS* to ensure inter-scorer agreement.

Trainings. Observer A participated in Training Two on the completion of the *SIOS* (Kreimeyer et al., 1991). The *SIOS* training lasted one hour and included a review of the protocol, discussion of examples and non-examples, practice session including using an interval recording system, and discussion. The complete training outline is contained in Appendix M. Upon completion of the training, Observer A was prepared to score 25% of the video recorded lessons to check for interrater reliability.

Phase Two

During weeks two through seven, the children were scheduled to participate in the Social Story-Only and the Social Story-Plus Practice Session four days a week for six weeks. Classroom Teacher A ended the intervention one week early due to perceived scheduling conflicts, so the children participated in the interventions four days a week for five weeks. These interventions were embedded into the center rotations that occurred in the classroom. This schedule was selected as the children with disabilities who attended the preschool program were on a four-day a week schedule. Both intervention groups listened to the same Social Story and played at the same center. There was one Social Story used per week and the children rotated through the centers each day (see Table 5). Fidelity of Instructional Intervention was checked for each intervention session daily.

Social story-only group. To begin the intervention, the special education teacher assistant called the students in the play group to the circle area. The special education teacher assistant said, "it is time for our play group". Once the children were seated in the designated area, the teacher gained the student's attention by reading the title of the story and asked the children to repeat it. At this point the special education teacher assistant read the Social Story to the students. After reading the Social Story, the special education teacher assistant directed the children to the designated play area by saying, "It is time to play at / with ____. Go to the ___ table". The researcher observed each lesson and completed the *Fidelity of Instruction Checklist* (see Appendix B) for each intervention quad daily.

When all of the children entered the center area, the classroom teacher started a digital timer which was set for 10 minutes. At this point, the video recorder was started. While the children were playing, the teacher monitored the group to ensure the children were staying in the designated area. The teacher did interfere with the play of the students. If a child attempted to leave the play area to play somewhere else, the teacher redirected the child back to the play area. If a child engaged in dangerous or hurtful behavior (e.g. hitting, standing on furniture, yelling), the teacher reminded the student of the class rules then prompted the child to continue playing.

Only children in the intervention play group were allowed to play at the assigned center during the intervention time. This was in alignment with classroom practices as the number of students allowed at each play center was typically limited to three or four children. The students were allowed to use the restroom if the teacher deemed it necessary, but every effort was made to ensure the children used the restroom before the

start of the intervention. At the end of the 10 minute period, the children were allowed to select a different play area and the intervention session was complete. The teacher indicated this by saying, “It is time to pick a different center”.

Social story-plus practice session group. To begin the intervention, the classroom teacher called the students in the play group to the circle area. The teacher said, “it is time for our play group”. Then the teacher gained the student’s attention by reading the title of the story and asking the children to repeat it. At this point the teacher read the Social Story to the students.

After reading the Social Story, the teacher said, “Let’s practice what we read about today.” The teacher stated the steps of the skill, which were listed on the back of each Social Story (see Appendix O), and demonstrated the skill to the class. In order to increase generalization, the skills were practiced using different materials, people and setting examples each day of the intervention (see Appendix P). The children practiced the target skill as prompted by the teacher. Each child had an opportunity to practice the skill three times, once with each peer in the group. The teacher provided prompting and feedback as necessary.

Once each child practiced the skill three times, the children were directed to a center where they were allowed to play for 10 minutes. When all of the children entered the center area, the classroom teacher started a digital timer. At this point, video recording began. While the children were playing, the teacher monitored the group to ensure the children stayed in the designated area, but the teacher did not interfere with the play of the students. If a child attempted to leave the play area to play somewhere else, the teacher redirected the child back to the play area. If a child engaged in dangerous or

hurtful behavior (e.g. hitting, standing on furniture, yelling), the teacher reminded the student of the class rules then prompted the child to continue playing.

Only children in the intervention play group were allowed to play at the assigned center during the intervention time. This was in alignment with classroom practices as the number of students allowed at each play center was typically limited to three or four children. The students were allowed to use the restroom if the teacher deemed it necessary, but every effort was made to ensure the children used the restroom before the start of the intervention. Once the timer rang, the children were allowed to select a different play area and the intervention session was complete. The teacher indicated this by saying, "It is time to pick a different center." The researcher observed and completed the *Fidelity of Instruction Checklist.*

Phase Three

During the first day of week eight, the classroom teacher / special education teacher assistant were given another *TIS* (Odom & McConnell, 1997) to complete as a post-assessment on the students who participate in the study. Twenty-five percent of the second *TIS* were scored independently by Observer A to ensure interscorer reliability.

Phase Four

During weeks eight and nine, a maintenance phase was scheduled to be implemented. However, due to the early cessation of the intervention, the maintenance phase was implemented during weeks seven and eight of the study. During this maintenance period, no social skills instruction was implemented, no play groups were assigned and no video recording occurred. This phase was two weeks long and took place immediately after

Phase Three. At the end of the second week of maintenance (week eight) the *TIS* (Odom & McConnell, 1997) was given to the classroom teachers for completion.

Phase Five

Post maintenance data were scheduled to be collected during the tenth week of the intervention, but were actually collected during week nine of the intervention due to the unplanned cessation of the intervention. Each day the children played in their original play groups at an assigned center for 10 minutes. All children were observed at the same center each day. The play sessions were video recorded by the researcher and scored using the *SIOS* (Kreimeyer et al., 1991). Twenty-five percent of the observations were scored by Observer A using the *SIOS*.

Data Collection

Teacher Impression Scales

The classroom teachers completed the *TIS* (Odom & McConnell, 1997) for each child to obtain the pre-intervention, post-intervention and maintenance and post maintenance scores on the *TIS* (Odom & McConnell, 1997). Twenty-five percent of the tests were scored by independently Observer A to obtain interrater reliability. The difference between the pre-intervention, post intervention and maintenance scores for children with disabilities and without disabilities were used to quantify the teachers' impressions. The scores were compared to determine the teacher's perceptions of the children's social skills.

Social Interaction Observation System

The video recordings were used to score the *SIOS.* The *SIOS* coded 15 behaviors over four, one-minute intervals. During each minute the 15 behaviors were marked as having occurred or not occurred within the interval. This process began at the start of the second minute of the intervention and continued for four minutes. The occurrence of the 15 behaviors were then quantified and analyzed for each participant to obtain the number of times each behavior occurred during the intervention period. Once a week video segments were observed and scored by the Researcher. Observer A independently viewed and scored 25% of the recordings to check for interrater reliability. Interrater reliability was calculated by [agreements / (agreements + disagreements)] x 100= percent of agreement. Maintenance data were collected after the two week maintenance period using the same method.

Treatment of Data

Data from the pre-intervention, post-intervention and maintenance *TIS* data were analyzed to answer the following research question.

Research Question One: Do classroom teachers perceive children in the Social Story-Plus Practice Session group as improving their social skills more than the Social Story-Only group as measured by the *Teacher Impression Scale (*Odom & McConnell, 1997).

Analysis: In order to determine the significance differences between the two intervention groups, a 2(group) by 3(time) Mixed Model ANOVA was used. An alpha level of .05 was set.

Data from the *Social Interaction Frequency Count* (Kreimeyer, 1991) was used to answer the following question.

Research Question Two: Do children with and without disabilities in the Social Story-Plus Practice Session group have more effective social behaviors and fewer ineffective social behaviors than children with and without disabilities in the Social Story-Only group as measured by the *Social Interaction Observation System*?

Analysis: In order to determine the significance differences between the two intervention groups, a 2(group) by 7(time) mixed model ANOVA was used. An alpha level of .05 was set.

Summary

This study sought to examine the effects of using a Social Story-Only and a Social Story-Plus Practice session intervention in a group research design. Social Stories have been researched in single subject designs, but little research had been conducted using a group design. The participants of the study were preschool-age children with and without disabilities who participated in an inclusive preschool setting. Social Story interventions have been used with children with ASD, but little research has completed with children who are diagnosed with other disabilities, children without disabilities and children of preschool-age. Pre and post intervention data were collected and analyzed to determine the effects of these interventions.

CHAPTER 4

RESULTS

This study was conducted to investigate the effects of Social Story interventions on preschool-age children with and without disabilities in an inclusive preschool setting. The children worked in groups of four composed of two children with disabilities and two children without disabilities. The children participated in a Social Story intervention for 20 intervention sessions. Children in the Social Story-Plus Practice session intervention also participated in a social skills practice session. Immediately following the Social Story-Only and the Social Story-Plus Practice Session interventions, all children participated in play activities. These activity sessions were video recorded and analyzed using the *SIOS* (Kreimeyer et al., 1991). Before the start of the intervention, during the intervention and at the end of the intervention, the teacher's perceptions of the children's social skills were measured using the *TIS* (Odom & McConnell, 1997). Data on teacher perception as well as the social interactions were compared using quantitative analyses.

Treatment Fidelity

To ensure the interventions were implemented consistently across participants, Treatment Fidelity Checks were implemented. The classroom teachers were taught how to follow the procedure. A fidelity checklist was completed for each group during each intervention session by the researcher. The Social Story-Only group completed the sessions with 100% accuracy for all treatment sessions. Fidelity checklists were also completed during the intervention sessions for the Social Story-Plus Practice Session

groups. The classroom teacher completed the implementation procedures correctly with skipped steps on 4 of the 80 intervention sessions (95% accuracy rate for all sessions).

When the steps were missed or not implemented appropriately, redirection was provided by the researcher and the missed step was corrected immediately. All four of the skipped steps were related to the teacher modeling the targeted skill during the practice session. When this occurred the teacher was prompted to model the skill and then ask the students to practice with their peers per intervention procedure.

Interrater Reliability

Both rating scales were scored for interscorer and interrater reliability. The *TIS* were completed by each classroom teacher for each participant in the study during the baseline, intervention and maintenance periods. Twenty-five percent of the tests were scored independently by Observer A to obtain interrater reliability. Interrater reliability was calculated at 100%.

The *SIOS* was used to quantify student interactions for effective and ineffective behaviors. Observer A independently viewed and scored 25% of the recordings to check for interrater reliability. Interrater reliability scored at 97% agreement and calculated by [agreements / (agreements + disagreements)] x 100 = percent of agreement.

Teacher Impression Scales

The *TIS* is a 16 item five point Likert Scale questionnaire that measures the social skills of children. The classroom teachers completed this scale before, during, and after

the intervention on each of the participants. TIS data were analyzed to answer the following question:

> Do classroom teachers perceive children in the Social Story-Plus Practice Session group as improving their social skills more than the Social Story-Only group as measured by the *Teacher Impression Scale* (Odom & McConnell, 1997).

The *TIS* data were analyzed using a 2 (group) by 3 (time) mixed model analysis of variance (ANOVA) to ascertain if there were significant interactions and main effects between the Social Story-Only group and the Social Story-Plus Practice Session group at the three measurement times. The data also were analyzed to examine change over time (pre-intervention, during intervention and post-intervention) as a result of the Social Story interventions. The alpha level was set at .05. *TIS* results are reported in Table 5.

Table 5

ANOVA Summary of Teacher Impression Scales

Dependent Variable	Source	*F*	*p*
TIS Scores	Time	2.775	.072
	Group	5.345	.029*
	Time * Group	1.610	.210

*Significant at the $p < .05$ level.

The results of the ANOVA indicated that there was no interaction effect [F (2,50) = 2.78, p =.072] or difference across time for the Social Story interventions [F (2,50) =1.61, p =.210]. A significant difference was found between the Social Story-Plus Practice Session group (M= 70.97, SD=11.01) and the Social Story-Only group

(*M*=56.71, *SD* 19.51) interventions [*F* (1,25) = 5.35, *p* =.029]. The mean scores indicate the preschool teachers perceived a difference between the Social Story-Only group and the Social Story-Plus Practice Session group. The means and standard deviations for the *TIS* data are presented in Table 6.

Table 6

Means and Standard Deviations for Main Effects for TIS Scores

Data Collection Period	Social Story-Plus Practice Group (n=12)		Social Story-Only Group (n=15)	
	M	SD	M	SD
Baseline	79.92	7.54	57.00	17.33
Intervention	69.58	14.50	53.40	21.54
Maintenance	70.42	12.20	59.73	20.21

Social Interaction Observation System

The *SIOS* was used to record different social interaction behaviors of the children using one minute intervals. The observed social interactions were divided into effective interactions and ineffective interactions. The data were analyzed to address the following question.

> Do children with and without disabilities in the Social Story-Plus Practice Session group have more effective social behaviors and less ineffective social behaviors than children with and without disabilities in the Social Story-Only group as measured by the *Social Interaction Observation System* (Kreimeyer et al., 1991).

Data on the participants were collected in one-minute intervals with four one-minute intervals for each data collection period (baseline, once each intervention week, maintenance). If the social behavior was observed at any time during the one-minute interval period, it was documented on the observation sheet. The totals for effective and ineffective interactions were calculated and statistically analyzed.

Social Interaction Observation System Effective Interactions

A two (group) by seven (time) mixed model ANOVA was used to analyze the data for effective peer interactions as scored on the *SIOS* to examine whether or not there were significant interactions and main effects between the Social Story-Only group and the Social Story-Plus Practice Session group across measurement times. The data also were analyzed to determine if there was a change over time (pre-intervention, during intervention and post-intervention) as a result of the Social Story interventions. The alpha level was set at .05. The results of the Huynh-Feldt indicated a significant main effect for group by time interaction [F (5.31, 132.81) = 4.43, p = .001]. There was also a significant main effect for time [F (5.31, 132.81) = 3.94, p = .002], and group [F (1, 25) =20.25, p <.001]. The results of the two by seven ANOVA are reported in Table 7.

Table 7

Huynh-Feldt Corrected Test

Dependent Variable	Source	*F*	*p*
SIOS Scores for	Time	3.94	.002*
Effective Interactions	Group	20.248	<.001*
	Time*Group	4.43	.001*

*Significant at the p <.05 level.

Since the interaction was significant, a simple main effects analysis needed to be conducted. The analysis consisted of (1) a comparison of "time" means at each level of group using repeated measures ANOVA and (2) a comparison of group means at each level of time using independent *t*-tests.

In examining the simple main effects for the *SIOS* effective interactions, a comparison of the means at each data collection period (time) was conducted at each group level using a repeated measures ANOVA, one for the Social Story-Plus Practice session intervention and one for the Social Story-Only intervention. The Means and Standard Deviations for each data collection period are listed in Table 8.

Table 8

Means and Standard Deviations for Main Effects for SIOS Effective Interaction Scores

Data Collection Period	Social Story-Plus Practice Session Group (n= 12)		Social Story-Only Group (n=15)	
	M	SD	M	SD
Baseline	16.58	10.00	6.13	6.12
Week One	17.92	8.62	5.20	3.69
Week Two	20.00	7.34	6.93	5.09
Week Three	19.75	10.67	14.40	8.89
Week Four	19.00	6.93	13.00	6.55
Week Five	18.50	7.76	6.13	4.87
Maintenance	15.00	6.85	14.20	7.30

The results revealed no significant change across time for the Social Story-Plus Practice Session group [F (6, 66) = 1.28, p = .28], but a significant change in the Social Story-Only group [F (4.32, 60.41) = 7.42, p = .01] was noted (See Table 9).

Table 9

Means for Social Story-Only Group for SIOS Effective Interaction Data

Time Period	Mean	Standard Error
Baseline	6.13	1.58
Week One	5.20	0.95
Week Two	6.93	1.32
Week Three	14.40	2.30
Week Four	13.00	1.69
Week Five	6.13	1.26
Maintenance	14.20	1.88

Pairwise comparisons were used to determine which pairs of means differed. Upon examination, the means differed at Week One and Week Four (p=.003); Week One and Maintenance (p = .018); and Week Two and Maintenance (p = .008). The results are reported in Table 10.

Table 10

Pairwise Comparisons for SIOS Effective Interactions

Comparison Periods		*p**	95% Confidence Interval For Difference	
			Lower Bound	Upper Bound
Week One	Week Four	.003	-13.41	-2.19
Week One	Maintenance	.018	-16.88	-1.12
Week Two	Maintenance	.008	-13.07	-1.46

*Adjustments made for multiple comparisons: Sidak

A comparison of group means at each level of time was conducted using independent *t*-tests. The means and standard deviations for the Social Story-Plus Practice Session group are reported as follows: Week One (*M*= 18.60, *SD*= 8.08), Week Two (*M*= 19.73, *SD*= 6.55), Week Three (*M*= 21.40, *SD*= 10.06), Week Four (*M*= 20.13, *SD*= 6.76), and Week Five (*M*= 17.93, *SD*= 7.82). The means and standard deviations for the Social Story-Only group are reported as follows: Week One (*M*= 5.20, *SD*= 3.69), Week Two (*M*= 6.93, *SD*= 5.09), Week Three (*M*= 14.40, *SD*= 8.89), Week Four (*M*= 13.00, *SD*= 6.55), and Week Five (*M*= 6.13, *SD*= 4.87). The *t*-test comparisons of groups with significant differences in means are listed in Table 11. A graph of the simple effects can be found in Figure 1.

Table 11

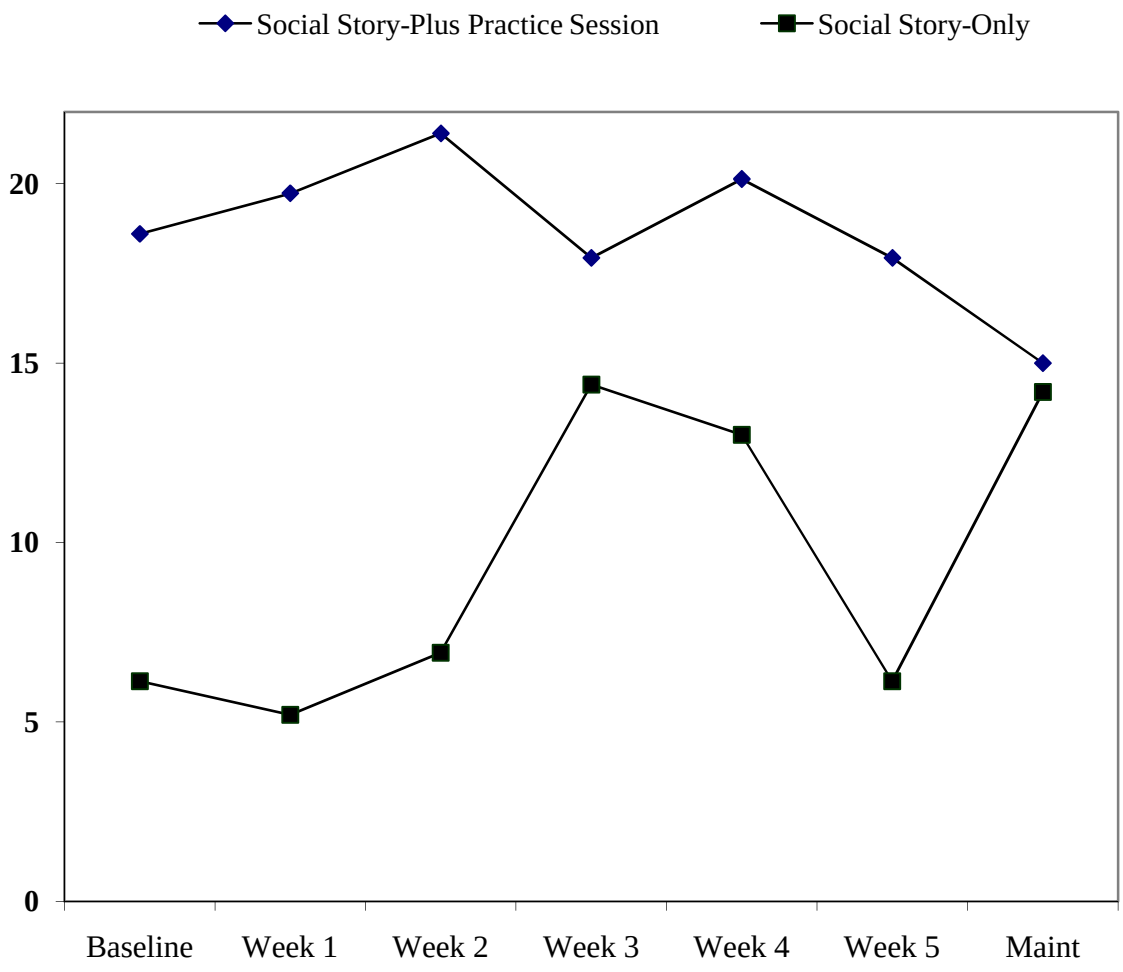
Independent t-Tests Comparing Groups with Significant Differences in Means

Week	Group	Mean	Standard Deviation
One*	Practice Session (n=15)	18.60	8.08
	Social Story-Only (n=15)	5.20	3.69
Two*	Practice Session (n=15)	19.73	6.55
	Social Story-Only (n=15)	6.93	5.09
Three	Practice Session (n=15)	21.40	10.06
	Social Story-Only (n=15)	14.40	8.89
Four*	Practice Session (n=15)	20.13	6.76
	Social Story-Only (n=15)	13.00	6.55
Five*	Practice Session (n=15)	17.93	7.82
	Social Story-Only (n=15)	6.13	4.87

*Significant at the $p < .05$ level.

A comparison of group means at each level of time was conducted using independent *t*-tests. At Week One, there was a statistically significant difference between the Social Story-Only group and the Social Story-Plus Practice Session group [t (28) = 5.84, p<.001]. At Week Two, there was a statistically significant difference between the Social Story-Only group and the Social Story-Plus Practice Session group [t 28) = 5.98, p <.001]. At Week Four, there was a statistically significant difference between the

Figure 1. Simple Effects Plot for Group at Each Time



Social Story-Only group and the Social Story-Plus Practice Session group [t (28) = 2.94, p=.007]. At Week Five, there was a statistically significant difference between the Social Story-Only Group and the Social Story -Plus Practice Session group [t (28) = 4.96, p<.001]. The t-test comparisons of means are listed in Table 12.

Table 12

Independent t-Test results for SIOS Effective Interactions Among Peers

Intervention Week	*t*	df	*p*
Week One *	5.84	28	<.001
Week Two*	5.98	28	<.001
Week Three	2.02	28	.053
Week Four*	2.94	28	.007
Week Five *	4.96	28	<.001
Maintenance	.291	25	.740

*Significant at the $p < .05$ level.

Social Interaction Observation System Ineffective Interactions

A two (group) by seven (time) mixed model ANOVA was used to analyze the data for ineffective peer interactions as scored on the *SIOS* to examine the interactions and main effects between the Social Story-Only group and the Social Story-Plus Practice Session group. The data also were analyzed to see if there was a change over time (pre-intervention, during intervention and post-intervention) because of the Social Story interventions. The alpha level was set at .05. A summary of *SIOS* ineffective interaction results are reported in Table 13.

Table 13

ANOVA Summary of SIOS Ineffective Interactions

Dependent Variable	Source	*F*	*p*
SIOS Scores	Time	1.435	.205
	Group	10.308	.004*
	Time * Group	1.696	.125

*Significant at the $p < .05$ level.

The results of the ANOVA indicated that there was no interaction effect [F (1,26) = 10.308, p =.004] or difference across time for the Social Story interventions [F (6, 156) =1.435, p =.205]. A significant difference was revealed between the Social Story-Plus Practice Session group and the Social Story-Only group interventions [F (1,26) = 10.308, p =.004]. The means and standard deviations for main effects for the SIOS ineffective interaction data are presented in Table 14.

Summary

The data gathered in this study examined the effectiveness of interventions with preschool age children with and without disabilities. The results of the study indicated a significant difference between the Social Story Only Group and the Social Story plus Practice Session group as reported by the *TIS* data (p=.029). The results of the *SIOS* effective interaction data analyses indicated a statistically significant difference between the Social Story-Only group and the Social Story-Plus Practice Session group at Week

Table 14

Means and Standard Deviations for Main Effects for SIOS Ineffective Interaction Scores

Data Collection Period	Social Story-Plus Practice Group (n=13)		Social Story-Only Group (n=15)	
	M	SD	M	SD
Baseline	3.69	1.888	6.20	2.366
Week One	5.69	3.301	5.93	1.387
Week Two	3.77	1.878	5.80	1.971
Week Three	3.08	3.040	5.73	2.840
Week Four	4.85	2.304	5.53	2.446
Week Five	4.31	1.316	6.00	1.927
Maintenance	4.92	1.382	5.67	1.291

One, Week Two, Week Four and Week Five (see Table 12). The results of the SIOS ineffective interaction data analyses indicate a statistically significant difference between groups (p=.004). There was no statistically significant difference found across time for any of the data analyzed in this study. The results of the study indicate the interventions had no direct effect on the social skills of children with and without disabilities. The implications of the results of this study are discussed in Chapter 5.

CHAPTER 5

DISCUSSION

Social competence has been identified as a foundation for school readiness and academic achievement (Blair, 2002; Brigman et al., 1999; Raver, 2004). Developing effective social skills at an early age will help children be prepared for their future educational experiences. Social skill instruction research for preschool age children has been limited, but interventions in the natural environment are optimal for the success of the student (Bredekamp & Copple, 1997). Classroom difficulties can occur as a result of social skill deficits (Vaughn, et al., 1992). With more children entering childcare at an earlier age, more research is needed on effective strategies in the natural environment.

This study examined Social Story interventions as a method for increasing the social skills of young children with and without disabilities. To date, minimal research had examined Social Stories as an intervention for young children. Further, limited research investigated the standardization of the implementation of the Social Story intervention. Utilizing the premise that social skill instruction should be integrated throughout the day by the early childhood education teacher (Bredekamp, & Rosegrant, 1992) as well as the knowledge that key components of effective social skill instruction include modeling, direct teaching and perspective taking (Bredekamp & Rosegrant, 1995), interventions were implemented to meet these criteria. The Social Story-Only intervention was compared to the Social Story-Plus Practice Session intervention to analyze the effect of the intervention on teacher perceptions of the children's behavior as well as effective and ineffective peer interactions. The specific questions for this study were:

1. Do classroom teachers perceive children in the Social Story-Plus Practice Session group as improving their social skills more than the Social Story-Only group as measured by the *Teacher Impression Scale* (Odom & McConnell, 1997)?
2. Do children with and without disabilities in the Social Story-Plus Practice Session group have more effective social behaviors and less ineffective social behaviors than children with and without disabilities in the Social Story-Only group as measured by the *Social Interaction Observation System* (Kreimeyer et al., 1991)?

Discussion of Results

Perceptions of the Preschool Teachers

Question one examined teacher's perceptions of student social skills before, during, and after the Social Story interventions were implemented. Two classroom teachers completed the forms for each of the participants. The teachers were aware of the group intervention they were implementing in their own classroom, but were unaware of the parameters of the other intervention group. When one teacher was implementing the intervention, the other teacher was outside with her class on the playground or on a lunch break. Therefore, the teachers had no way of knowing if there were differences in the implementation of the interventions.

Based on the *TIS*, the teachers did not perceive improvement in social skills throughout the course of the study. There was, however, a difference in teacher perception between the Social Story-Only group and the Social Story-Plus Practice Session group. The Social Skills-Plus Practice Session group was perceived as having higher social skill levels than the Social Story -Only intervention group. This may have

occurred because of the differences in each teacher's style of teaching as well as the amount of teacher experience in the classroom. The teacher for the Social Story-Only intervention had more experience in working with children with disabilities. Therefore, she may have had a deeper understanding of the components of effective social skill instruction.

Even though the teacher's perceptions did not indicate an improvement in social skills throughout the course of the intervention, this finding needs further investigation. The fact the teachers perceived the Social Story-Plus Practice Session group as having higher levels of social interaction deserves further discussion. First, the teachers may have been influenced by their knowledge of the students or their perception of the Social Story intervention. Second, the participants in the Social Story-Plus Practice Session group may have possessed higher levels of social skills at the onset of the study. Another caution that should be noted involves the use of a teacher perception scale to measure behavior changes. These data are based on teacher perception rather than direct observation of behavior which would provide a more objective measure.

When examining this research in the future, the individual differences among children should be studied throughout the course of the intervention to see if there were changes that were noteworthy, especially when examining the students with disabilities. The length of the intervention period should also be taken into consideration when examining teacher's perceptions. Another final factor to consider when examining the results of the *TIS* is the amount of experience the teachers had in working with the children. Their own personal experiences and expectations will influence their perceptions of child behavior.

Social Interaction Observation System

Question two examined the social interactions of the participants in the study by using the *SIOS* (Kreimeyer et al., 1991). The participants were observed playing after participating in the Social Story intervention and the 15 behaviors listed on the *SIOS* were observed and recorded during four one-minute intervals. The occurrence of behaviors were recorded and then analyzed using a 2 (group) by 7 (time) mixed model ANOVA.

Effective peer interactions. The eight effective behaviors on the *SIOS* included: child engages in positive interaction with peers, child engages in parallel play, child engages in associative and /or cooperative play, child engages in positive linguistic interactions, peer initiations interaction towards child, child responds positively to peer, child initiations interaction towards peer, and peer responds positively to a child's initiation. The results of the study indicated interaction between groups.

Teacher turnover. There are several factors which could have lead to the interaction between the intervention groups, but many are believed to be related to the classroom atmosphere. There was a high occurrence of teacher turnover in the classroom during this intervention period, which likely impacted student performance. One teacher was asked to leave her position and another teacher was hired for the Social Story-Only classroom. When this teacher took the position, she decided she enjoyed the younger students and asked to be transferred to a new classroom after three weeks. The newest teacher started in the Social Story-Only classroom, was absent for a week (during week five of the intervention (see Figure 1). However at maintenance, the Social Story-Only group (M = 14. 2) was closer in score to the Social Story-Plus Practice Session group (M = 15.0). This shows the groups were distributed evenly and the differences noted at baseline

(Social Story-Only *M*= 6.13; Social Story-Plus Practice Session *M* =18.6) may have been related to teacher turnover. Another change in the class included students who had been attending the classroom for the course of the school year moving to other classroom. The reasons for changing classrooms included enrollment in the preschool as a whole, age of the child, parent request and behavior issues.

It is also important to note no statistically significant difference was obtained within the Social Story-Only group over time nor was a statistically significant difference noted within the Social Story-Plus Practice Session group. There was, however a statistically significant difference between groups noted. This may have occurred for several reasons. First, the Social Story-Plus Practice Session intervention maybe be more effective than the Social Story-Only intervention. However, because the differences were noted at the start of the study, this cannot be confirmed from this data set. An additional reason for the differences is related to the classroom environment. With the classroom teacher turnover, the children may have felt insecure and unsure of themselves, resulting in a decrease in effective social behaviors. Because these teacher changes occurred at the start of the study, it is difficult to generalize the results of the Social Story intervention.

The results indicate the lack of a treatment effect to increase effective behaviors of participants after a Social Story intervention. These findings contradict the previously conducted research using Social Story interventions. Previous research found Social Stories to be an effective intervention in improving desired behaviors and decreasing negative behaviors (Bernad-Ripoll, 2007; Bledsoe et al., 2003; Haggerty et al., 2005; Ivey et al. 2004; Kuoch & Mirenda, 2003). However these results were obtained from single subject, individualized interventions targeting very specific behavioral deficits in

the participants. The individualization of the written Social Story might be a key component to the success of the intervention that was lacking in this intervention.

The participants in the previous studies were also older than the participants in this study. The preschool age of the children participating in the study may be a factor that impacts the results of this study. Because the children were unable to read, the Social Stories were read to them instead of requiring the students to read the stories to themselves. Listening and responding to a Social Story is a different skill than reading and responding to a Social Story. Further investigation should be conducted using Social Stories with young children.

Ineffective peer interactions. The seven ineffective behaviors measured by the SIOS included: child directs negative behaviors to the peer, child engages in nonplay behavior, child engages in solitary play, child responds negatively to peer, child makes no response to peer, peer responds negatively to child, and peer makes no response. The data relating to ineffective peer interactions were analyzed using a 2 (group) by 7 (time) ANOVA. The results of the ANOVA did not show a statistically significant treatment effect on the ineffective behaviors within groups. However, there was a statistically significant difference between the Social Story-Plus Practice Session group and the Social Story-Only group. It is important to note the Social Story-Only group exhibited more ineffective behaviors than the Social Story-Plus Practice Session group throughout this study. As previously mentioned this may have been impacted by the high rate of teacher turnover.

The lack of treatment effect results contradict the results typically shown by previous Social Story interventions. In previous interventions, many of the Social Story

interventions resulted in a decrease in ineffective peer interactions (Adams et al., 2005; Agosta et al., 2004; Barry & Burlew, 2004; Burke et al., 2004; Ivey et al. 2004; Kuoch & Mirenda, 2003; Lorimer, 2002). The lack of treatment effect could be a result of the lack of individualization of the Social Stories. Although the stories were composed following the guidelines outlined by Gray (2004), they were written for and read to a small group of children. This may have impacted the effectiveness of the intervention. Future research should examine the importance of individualization in the composition of the Social Stories.

Another reason for a lack of treatment effect might be related to the age of the child participants. Unlike the previous Social Story interventions, this intervention was implemented with a small group of young children. In previous research interventions using Social Stories, the participants were typically older, so the age of the participants in the current study may have also impacted the results. Social Story interventions may not be effective for young children in group settings. However, this theory cannot be confirmed by this current study. Future research is needed in this area.

The results also indicated a difference between the two intervention groups, with the Social Story-Only intervention group demonstrating more ineffective behaviors than the Social Story-Plus Practice Session group. There several reason why this may have occurred. The unstable classroom environment in the Social Story-Only group might have led to an increase in ineffective peer interaction. Also to be noted, most of the previous interventions paired the Social Story intervention with another teaching strategy (such as prompting, modeling, guided practice, etc.). The Social Story-Only intervention may be a less effective intervention, however this was not demonstrated by the results of

this particular study. Future research should examine the effectiveness of Social Story-Only interventions with preschool age children.

While the results may not indicate a clear treatment effect and indicate differences between groups, it is important to note the strengths of the study. The study was conducted in a preschool setting. The setting was representative of settings where many children are receiving preschool services. Historically, teachers in the Early Childhood Education settings have a higher rate of turnover than teachers in school settings.

Limitations of the Study

Although the study was conducted in a typical preschool setting, there are several limitations to the study. First, there was only one site used to examine the effectiveness of Social Story interventions. Increasing the number of sites would allow for increased generalization of results. Within the study, there were a small number of teachers used to implement the intervention. The effects shown from the study could be impacted by the individual teachers. Also, there was an overall small sample size. Although the study began with 32 child participants, two did not complete the study and five additional participants were not available during the maintenance period. Because of the declining 2009 economy, the classroom population as a whole became increasingly unstable. Many parents were facing unemployment, and, as a result, several students not involved in the study withdrew from the classes. This change in the classroom composition could have an effect on the results.

A second limitation of the study can be associated with teacher turnover in the Social Story-Only classroom. Immediately before the start of the study, one classroom teacher

was relieved of duty. The replacement classroom teacher was a familiar substitute who had spent many afternoons in the classroom. This new classroom teacher was familiar to the students. However, the teacher did not enjoy this position and after two weeks within the classroom, asked to be transferred to a different setting. Substitutes assisted in the classroom during a transition week. The final replacement teacher began during the third intervention week. During the fifth intervention week, the teacher was out of the classroom, and then returned for the remainder of the intervention. The specialized programs teacher assistant was charged with implementing the intervention, but the room environment certainly impacted the outcome, especially in the Social Story-Only intervention group.

The short duration of the intervention is another probable limitation of the study. Originally the study was designed to take place over a course of six intervention weeks. The Social Story-Plus Practice Session intervention teacher decided to stop implementing the intervention due to scheduling conflicts with preschool graduation practice. This impacted the duration of the study. More time with the intervention may have had an impact on the results.

Participant absences became a source for possible error in analyzing the data and this should be considered a limitation. While efforts were made to conduct make-up sessions for the students who were absent, not every student participated in four intervention sessions each week. Also, attempts were made to group students with other students that they typically chose to play with during free play time. However as is often the case, young children change playmate preferences over periods of time. Another factor to consider is that child participants may not have demonstrated the skill during the video

recorded play session, but may have demonstrated the skill during another play session with a peer of choice. While generalizing to different people is an important component of social skill acquisition, it is typically a skill that is closer to the mastery level than the acquisition level. Future research should target behaviors across preferred and possibly non-preferred peers.

Additionally, over half of the students in the study had mild developmental delays. Care should be taken when generalizing the results of the study to children with more severe disabilities. A child with more severe disabilities may respond differently to the intervention than a child with a mild developmental delay.

A final limitation of the study involved the quality of the video. Some of the video conversations were difficult to hear due to the background noise in the classroom. Although interrobserver reliability was rated at 97%, the sound quality on some video made it difficult to distinguish some of the words of the child participants. To compensate for this issue, the observers watched body language and viewed other physical movements and cues to determine the nature of the interactions.

Recommendations for Further Study

Social Story interventions have been identified as an effective social skill intervention for children with disabilities. However, their use with young children has not been thoroughly investigated. There is also limited research on the use of Social Stories with children in natural environments or group settings. When interventions for young children are studied, they need to be studied in the natural setting in order to get a true picture of the effectiveness of the intervention.

This study attempted to examine the use of Social Story interventions with preschool age children with and without disabilities. There are several recommendations for further study resulting from this intervention. First, further research should directly measure behaviors targeted in the Social Stories. These behaviors should be defined and measured before, during and after the intervention as well as during a generalization phase. To add to the validity of the results, this study should be replicated with multiple teachers in multiple settings to examine teacher perceptions as well as student behaviors. As recommended by Rust and Smith (2006) the intervention sample size should be increased to improve the power of the study.

Another area in which to expand research is in examining Social Story-Only interventions. Social Story-Only interventions should be compared to other social skills interventions, including a teacher prompting component either with the Social Story intervention or as a part of another social skill intervention would add an age appropriate strategy as well as provide scaffolding for the new skill. Also, the effects of the intervention should be examined in terms of disability status. Since the results of this study did not show significance within groups inclusive of students with and without disabilities the question should be asked: are the Social Story interventions more effective with young children with disabilities or with children without disabilities?

During the course of this study, the child participants asked to look at the Social Story books outside of the intervention period. Their access was denied during the intervention period as part of the standardization process. Research is mixed in this area with some studies allowing unlimited access to the Social Stories (e.g. Lorimer et al., 2002, Scattone et al., 2002), and other studies allowing access to the Social Stories only during the

prescribed period of time designated in the study (e.g. Dodd et al., 2008, Ivey et al., 2004). Research conducted when the children have been given access to the story throughout their school day would add to the social validity of the intervention.

Another research avenue that would strengthen social validity and may improve the intervention results involves utilizing the children in the composition of the Social Story. By allowing the participants to assist in the creation of the Social Stories, the participants may feel more ownership of a story that they created. Young children enjoy reading and sharing books they have created. Being a part of the Social Story composition may increase the participants' motivation to read the story repeatedly.

To examine the effectiveness of Social Stories as a group intervention, the Social Stories could be implemented as part of a class wide behavior intervention. This would add to the body of research on using Social Stories with larger groups of children instead of implementing Social Stories as an individualized intervention. Additionally, more research should focus on Social Stories paired with another intervention to examine the effects of Social Stories in relation to other interventions.

Lastly, the effects of a Social Story written for an individual child could be compared to the effects of a Social Story written to a more general population. The results of this study were contrary to other Social Story intervention research. This type of study would examine the significance of individualization in Social Story construction. Along with examining Social Story construction, more research is needed in regard to the type of pictures or graphics used in the Social Story intervention. Some Social Stories use real pictures from the child's environment, some use picture icons, and some Social Stories do not use pictures at all. This study used picture icons from the Mayer Johnson (2003)

Picture Communication Symbols. This lack of standardization adds to the questions surrounding the effectiveness of Social Stories as an intervention.

Summary

Several conclusions may be drawn from this study based on the quantitative data collected throughout the course of the study. First, the preschool teachers did not perceive a change in the social skills of the participants in the Social Story-Only intervention when implemented with a small group of children in a preschool setting. Secondly, the preschool teachers did not perceive a change in the social skills of the participants in the Social Story-Plus Practice Session Intervention as implemented to a small group of children in a preschool setting. This may be due to the amount of teacher experience, lack of knowledge of the components of effective social skills and a lack of knowledge of typical child development. Although the teachers were working in a preschool setting, they did not possess college degrees in early childhood education and therefore, may have had a limited understanding of child development. While this lack or level of college education is unusual, it may have had an undefined effect on the intervention.

Another conclusion is that participants in the Social Story-Only intervention demonstrated fewer effective peer interactions than participants in the Social Story-Plus Practice Session intervention. However this conclusion is limited as the difference in the effective peer interactions was noted at the onset of the study (see Figure 1). At baseline, the Social Story-Only group (M = 6.13) differed in score from the Social Story-Plus Practice Session group (M = 18.60). This difference, however, was not present during the

maintenance phase (Social Story-Only *M*= 14.2, Social Story-Plus Practice Session *M* =15.0), which may indicate that the change in classroom teachers had more effect on a child's social interaction than the Social Story intervention.

Participants in the Social Story-Only intervention demonstrated more ineffective peer interactions that participants in the Social Story-Plus Practice Session Intervention. This conclusion must also be viewed cautiously as the difference was noted at the onset of the study, and lessened during the maintenance phase. The difference in ineffective behaviors may be more likely attributed to the change in the classroom teachers than the Social Story interventions. Finally, there was no statistically significant effect noted for the Social Story-Only intervention, nor was there a statistically significant effect noted for the Social Story-Plus Practice Session intervention. This may indicate that Social Story interventions are either (a) not effective interventions for the preschool age child, (b) need to be individualized in order to be effective, or (c) require a longer period of time than was provided in the study.

Previous research indicated Social Stories are an effective intervention for increasing desired target behaviors or decreasing unwanted target behaviors for children with disabilities. Most of the prior research was conducted using single subject research design with older participants and most of the interventions were individualized and tailored to match the needs of the participants. To meet the needs of the participants in previous studies, the targeted social skills were identified based on observations and data collected in specific social situations. Due to the nature of the individualization of the treatments, it has been difficult to ascertain which components of a Social Story intervention were effective.

This research is important as it expands the use of Social Story interventions to (a) preschool age children, (b) children in small groups, (c) children with and without disabilities and, (d) children found in natural settings. This research also examines components the Social Story intervention by systematizing (a) the amount of time between the intervention and the expected desired behavior, (b) the teacher behavior accompanying a Social Story Intervention and, (c) examining a Social Story-Only intervention in comparison to a Social Story-Plus Practice Session intervention.

While the statistical analysis did not indicate a significant treatment effect over time, it should be noted that the child participants in the study appeared to enjoy listening to the Social Stories and participating in the practice sessions. The teachers also noted the students using language from the stories in their everyday play. While this study did not support research in using Social Stories as an intervention with young children in a small group, future research should continue to examine Social Stories, particularly when combined with other interventions as an effective social skill intervention. The components of effective Social Story interventions need to be studied in relationship to student skill level, targeted behavior and nature of the implementation of the intervention. This study contributes to the body of Social Story research for children with and without disabilities.

Teaching effective social skills to young children must remain a focus of future research. As young children are spending more time in daycare and other preschool facilities (Childstats.gov, 2006), there will be an increased focus in providing social skill interventions. Social skill instruction should be integrated throughout the day by the early childhood education teacher (Bredekamp, & Rosegrant, 1992). Interventions that

can effectively address social skill deficits as well as interventions that attempt to improve social skills must be identified to ensure the young child's success in future educational endeavors. These interventions must take place in the natural environment in order to determine their effectiveness in improving the social skills of preschool age children.

APPENDIX A

PARENTAL PERMISSION FORM

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

PARENT PERMISSION FORM

Department of Special Education

TITLE OF STUDY: Effects of Social Story Interventions on Preschool-Age Children With and Without Disabilities

INVESTIGATOR(S): Nancy M. Sileo, Ed.D. and Cori M. More, M.A.T

CONTACT PHONE NUMBER: (702) 895-3205

Purpose of the Study

Your child is invited to participate in a research study. The purpose of this study is to examine the effects of a Social Story that is read aloud to the children, on the social behaviors of preschool-age children. Specifically, this study will examine whether there are increased social interactions among young children with and without disabilities after a Social Story intervention is implemented. Social Stories are short stories that are written from the perspective of children. These stories describe social situations to children and provide possible responses to these situations. A Social Story could be used to teach skills such as how to line up in the classroom, or how to keep hands and feet to ourselves. The intent of this study is to provide a rationale for the use of Social Stories with preschool-age children with and without disabilities. The Social Story will be read aloud to your child and his/her peers.

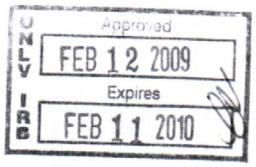
Participants

Your child is being asked to participate in the study because your child is a preschool-age child enrolled in either classroom seven, nine or ten at the Creative Kids Learning Center on Wigwam and Eastern.

Procedures

If you allow your child to volunteer to participate in this study, your child will be asked to do the following:

The classroom teacher will complete a 15 question scale that examines your child's social behaviors before and after the study occurs. During the study, your child will be asked to participate in preschool activities such as participation in a story time, and classroom centers that typically take place in the classroom on a daily basis. Your child will continue to participate in classroom centers whether or not you give permission for your child to participate in the study, however, your child will only participate in the social story intervention if you give permission. If you give permission for your child to participate in the study, your child may also participate in a 5-minute social skill practice session with other children from their class. During the 8 weeks of research, the children participating in the study will be placed into groups of 4. Each group will be designed to include two children with and two children without disabilities. By signing this permission form, you are allowing your child's play behaviors to be observed, video-taped, and coded by the Primary Researcher and the Research Assistant (Interobserver).



Benefits of Participation
There *may not* be direct benefits to your child as a participant in this study. However, we hope to learn that when social skills are directly taught and children are given the opportunity to practice those skills with their peers through play, children's social skills will improve. Through this research study, your child may receive additional benefits including and not limited to an increase in communication with peers, a deeper understanding of social interactions, and the possibility of developing deeper friendships through practice of social skills.

Risks of Participation
There are risks involved in all research studies. This study may include only minimal risks. Your child might feel uncomfortable being video-taped during play behavior observations.

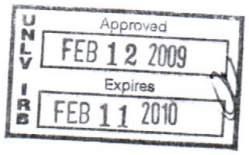
Cost /Compensation
There *will not* be financial cost to you to participate in this study.

The video-taping will take place 10 minutes each day for 4 days a week over a 6 week period with an additional week of video-taping occurring before the start of the social stories being read in the classroom and two weeks after the completion of the study. Your child *will not* be compensated for their time.

Contact Information
If you or your child has any questions or concerns about the study, you may contact Dr. Nancy Sileo or Cori More at (702) 895-3205. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact **the UNLV Office for the Protection of Research Subjects at 702-895-2794.**

Voluntary Participation
Your child's participation in this study is voluntary. You may refuse to have your child participate in this study or in any part of this study. You may withdraw your child at any time without prejudice to your relations with the university. You and your child are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link your child to this study. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time the information gathered will be shredded, broken, and destroyed. Video recordings stored on DVDs will be shredded at this time as well.



Participant Permission:

I have read the above information and by signing this portion of the form, I am allowing my child's play behaviors to be observed, video-taped, and coded. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Parent	Child's Name (Please print)
Parent Name (Please Print)	Date

Participant Note: Please do not sign this document if the Approval Stamp is missing and/or is expired.

APPENDIX B

FIDELITY OF INSTRUCTION CHECKLIST

Fidelity of Instruction Checklist

Social Story-Only Intervention

Y= Yes, the step was completed

N= No, the step was not completed

_____ Call children to play group by saying " it is time for our play group"

_____ Read the title to the children

_____ Ask them to repeat the title

_____ Read the Social Story

_____ Say, "It is time to play with ___" (insert materials here)

_____ Say, "Please go to the ___ table" (insert designated table area)

_____ Once children are in the area, begin 10 minute timer

_____ Start Video Camera

_____ Redirect children only as necessary to ensure safety

_____ Redirect children only as necessary to ensure they remain in the designated area

_____ After the 10 minute period is over, say, "It is time to pick a different center"

Fidelity of Instruction Checklist

Social Story-Plus Practice Session Intervention

Y= Yes, the step was completed

N= No, the step was not completed

_____ Call children to play group “it is time for our play group”

_____ Read the title to the children

_____ Ask them to repeat the title

_____ Read the Social Story

_____ Say, “Let’s practice what we read about today”

_____ State the steps to the skill

_____ Model the skill

_____ First child will practice the skill with another child

- _____ Teacher will prompt when necessary
- _____ Provide performance feedback
- _____ Repeat practice until the child has practiced the skill 3 times

_____ The second child will practice the skill with another child

- _____ Teacher will prompt when necessary
- _____ Provide performance feedback
- _____ Repeat practice until the child has practiced the skill 3 times

_____ The third child will practice the skill with another child

- _____ Teacher will prompt when necessary

_____ Provide performance feedback

_____ Repeat practice until the child has practiced the skill 3 times

_____ The fourth child will practice the skill with another child

_____ Teacher will prompt when necessary

_____ Provide performance feedback

_____ Repeat practice until the child has practiced the skill 3 times

_____ Say, “It is time to play with ___” (insert materials here)

_____ Say, “Please go to the ___ table” (insert designated table area)

_____ Once children are in the area, begin 10 minute timer

_____ Start Video Camera

_____ Redirect children only as necessary to ensure safety

_____ Redirect children only as necessary to ensure they remain in the designated area

_____ After the 10 minute period is over, say, “It is time to pick a different center”

APPENDIX C

PERMISSION LETTER FOR THE TIS

University of Nevada Las Vegas
Department of Special Education
4505 South Maryland Parkway
Box 3014
Las Vegas, NV 89154

February 21, 2010

Dr. Sam Odom
Campus Box 8180
The University of North Carolina
Chapel Hill, NC 27599-8180

Dear Dr. Odom;

I am completing a doctoral dissertation at the University of Nevada Las Vegas entitled "Effects of Social Story Interventions on Preschool Age Children With and Without Disabilities". I would like your permission to reprint in my dissertation excerpts from the following: Play time/ Social time: Organizing your classroom to build interaction skills by the Vanderbilt-Minnesota Social Interaction Project

The excerpts to be reproduced are: *Teacher Impression Scales.*

The requested permission extends to any future revisions and editions of my dissertation including non-exclusive world rights in all languages, and to the prospective publication of my dissertation by ProQuest through its UMI® Dissertation Publishing business. ProQuest may produce and sell copies of my dissertation on demand and may make my dissertation available for free internet download at my request. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that you own the copyright to the above-described material.

If these arrangements meet with your approval, please sing this letter where indicated blow and sign it and return it to me in the enclosed return envelope. Thank you very much.

Sincerely

Cori M. More

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

By: Samuel h. Odom, Ph.D.
Title: Director, FPG Child Development Institute, UNC-CH
Date: 3/8/10

APPENDIX D

TEACHER IMPRESSION SCALE

Teacher Impression Scales (TIS)

by

Scott McConnell and Sam Odom (1993)

Child Name_____ Date_____

Teacher_____ Subject Number_____

Please read each item below and rate the degree to which it describes the child's behavior in your classroom program. *If you have not seen the Child perform a particular skill or behavior, circle* **1** *indicating* **Never.** If the child frequently performs the described skill or behavior, circle **5** indicating Frequently. If the child performs this behavior in between these two extremes, circle **2, 3,** or **4** indicating your best estimate of the rate of occurrence of the skill.

1= Never Performs Skill **5= Frequently Performs Skill**

Circle only one number for each skill. Do not mark between numbers.

1…2…3…4…5	1. The child converses appropriately.
1…2…3…4…5	2. The child takes turns when playing.
1…2…3…4…5	3. The child plays cooperatively
1…2…3…4…5	4. The child varies social behavior appropriately
1…2…3…4…5	5. The child is persistent at social attempts.
1…2…3…4…5	6. The child spontaneously responds to peers.
1…2…3…4…5	7. The child appears to have fun.
1…2…3…4…5	8. Peers interacting with the child appear to have fun
1…2…3…4…5	9. The child continues an interaction once it has begun.
1…2…3…4…5	10. Peers seek out the child for social play
1…2…3…4…5	11. The child uses appropriate social behavior to begin an interaction.

1…2…3…4…5	12. The child enters play activities without disrupting the group.
1…2…3…4…5	13. The child suggests new play ideas for a play group.
1…2…3…4…5	14. The child smiles appropriately at peers during play.
1…2…3…4…5	15. The child shares play materials with peers.
1…2…3…4…5	16. The child engages in play activities where social interaction might occur.

APPENDIX E

PERMISSION TO USE THE SIOS

University of Nevada Las Vegas
Department of Special Education
4505 South Maryland Parkway
Box 3014
Las Vegas, NV 89154

February 21, 2010

Dr. Kathryn Kreimeyer
College of Education
1430 E. Second Street
P.O. Box 210069
Tucson, AZ 85721

Dear Dr. Kreimeyer;

I am completing a doctoral dissertation at the University of Nevada Las Vegas entitled "Effects of Social Story Interventions on Preschool Age Children With and Without Disabilities". I would like your permission to reprint in my dissertation excerpts from the following: *Observer Manual, Project Interact, University of Arizona, 1989-1990*

The excerpts to be reproduced are: *Social Interaction Observation System, 1990-1991.*

The requested permission extends to any future revisions and editions of my dissertation including non-exclusive world rights in all languages, and to the prospective publication of my dissertation by ProQuest through its UMI® Dissertation Publishing business. ProQuest may produce and sell copies of my dissertation on demand and may make my dissertation available for free internet download at my request. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that you own the copyright to the above-described material.

If these arrangements meet with your approval, please sign this letter where indicated blow and sign it and return it to me in the enclosed return envelope. Thank you very much.

Sincerely

Cori M. More

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

By: Kathryn Kreimeyer

Title: Lead author SIOS

Date: Feb. 24, 10

APPENDIX F

SIOS

Social Interaction Observation System

(Kreimeyer, Antia, Coyner, Eldredge, and Gupta, 1991)

The purpose of the Social Interaction Observation System (SIOS) is to provide descriptive information on the social behaviors of hearing-impaired children during their interactions with peers. Observations conducted with the SIOS should occur during a free play period of at least 10 minutes. It is important to observe children during free play periods as these are times when teacher direction is minimal and children can choose who they will play with and what they will do.

The SIOS is based on an interval observation system; a child is observed for a specified interval and then all of the listed behaviors that occurred during that interval are recorded. The SIOS obtains data for an individual child over four one-minute intervals during one observation session. We ask that a total of three separate observations, each providing four minutes of data on an individual child, be conducted. Each observation should be conducted approximately one to two weeks apart.

OBSERVATION PROCEDURES:

1. Before each observation, complete SECTION IDENTIFYING INFORMATION of this form and then read through the balance of the form to familiarize yourself with the behaviors you will be asked to score and the descriptive information you will be asked to provide.
2. Locate the child whom you will observe, begin the audiotape which will cue you at the end of each one minute interval, and observer the child continuously for the full one minute period.
3. When the audiotape indicates that one minute has elapsed, stop the tape recorder

And complete the TIME 1 column of SECTION B, OBSERVATIONAL DATA. Read each behavior and record a (+) if the behavior was observed during the one Minute interval and a (0) if it was not observed. It is extremely important that you score each of the 15 behaviors.

4. After you have scored each behavior, start the audiotape and begin observing the child when the tape indicated that the second minute interval has begun. Observe continuously for the second minute. When the audiotape indicates that the second minute has elapsed, stop the tape recorder, and complete the TIME @ COLUMN of Section B. Repeat this process for the third and fourth minutes.

SOCIAL INTERACTION OBSERVATION SYSTEM

Complete section A before beginning the observation.

SECTION A. IDENTIFYING INFORMATION

Observer _____ School _____

Child _____ Date _____
First name Last name

Observations # 1 2 3 (circle one)

Time begin _____ Time end _____

Complete Section B after completing Section A

Read each behavior and record a (+) if the behavior occurred during the observational interval and a (0) if it did not occur.

SECTION B. OBSERVATIONAL DATA

		Time 1	Time 2	Time 3	Time 4
1.	CHILD ENGAGES IN POSTIVE INTERACTIONS WITH PEERS (Playing or conversing with other children, physical signs of affection, engaging in interactive games such as “catch” or “chase”).				
2.	CHILD DIRECTS NEGATIVE BEHAVIORS TO PEER(S) (Hits, kicks, throws toys, bites, pushes, shouts, takes materials or toys without permission, disrupts or interferes with play activity, uses negative sign or oral communication such as “no”, “don’t do that”, “stop it”, “dumb you”, “I’m not your friend”, “hate you”, or displays negative inflection in gestures, voice or signs).				
3.	CHILD ENGAGES IN NON-PLAY BEHAVIOR (Watches peers, wanders, sits or stands away from other children; does not engage in play behaviors; no social contact with peers)				
4.	CHILD ENGAGES IN SOLITARY PLAY (Plays alone and with materials that are different from those of other children or plays alone and uses the same materials as peers but in a very different manner; no social contact with peers while playing)				
5.	CHILD ENGAGES IN PARALLEL PLAY (Plays independently beside peers and engages in similar activities; social contact is only through gaze or imitation. Children do not interact with one another)				
6.	CHILD ENGAGES IN ASSOCIATEIVE AND/OR COOPERATIVE PLAY (Plays with peers and communicates with them about the play activity (gesture, speech or sign); engages in cooperative project (i.e. building a block castle); or engages in formal games or dramatic play)				

7.	CHILD ENGAGES IN POSITIVE LINGUISTIC INTERACTIONS (Uses recognizable words or signs during interaction, does not include unintelligible vocalizations, gestures or listening/watching				
8.	PEER(S) INITIATE INTERACTION TOWARD CHILD (Per attempts to being positive interaction with child; to join child when he /she is already engaged in play; to give instructions to child or to modify the ongoing play activity. This item does not assess the appropriateness of these attempts				
*ACKNOWLEDGING AN INITIATION BY LOOKING AT INITIATOR IS NOT CONSIDERED A RESPONSE					
*9.	CHILD RESPONDS POSITIVELY TO PEER INITIATION (When peers attempt to positively interact with the child, child responds by interacting positively with the peer or by attempting to follow instructions given by peers)				
*10.	CHILD RESONDES NEGATIVELY TO PEER INITIATION (When peers attempt to positively interact with the child, child responds by overtly refusing to interact with the peers; by not allowing peers to join the play; or by directing negative behaviors towards peers)				
*11.	CHILD MAKES NO RESPONSE TO PEER INITIATION (When peers attempt to positively interact with the child, child looks at the initiator but does not interact or respond)				
*12.	CHILD INITIATES INTERACTION TOWARD PEERS (Child attempts to begin positive interaction with peers; to join peers already engaged in play to give instructions to peers; or to modify the ongoing play activity. This item does not assess the appropriateness of these attempts.)				
*13.	PEER(S) RESPOND POSITIVELY TO CHILD INITIATION (When child attempts to being positive interactions, peers respond by interacting with the child or by attempting to follow instructions given by the child)				

*14.	PEER(S) RESPOND NEGATIVELY TO CHILD'S INITIATION (When child attempts to begin positive interaction, peers respond by overtly refusing to interact with the child; by not allowing the child to join the play; or by directing negative behaviors toward the child)				
*15.	PEER(S) MAKE NO RESPONSE TO CHILD'S INITIATION (When the child attempts to positively interact with peers, peers look at the child but do not interact or respond)				

APPENDIX G

SOCIAL STORY GUIDELINES

Social Story Guidelines (Gray, 2004)

1. The Social Stories contain an introduction identifying the topic, a body that adds information and a conclusion that reinforces information within the story.
2. The story answers “wh” questions.
3. The Social Stories are written in First or Third person.
4. The Social Stories use positive language.
5. The Social Stories contain descriptive sentences and one or more of the other sentence types (e.g. perspective, directive, cooperative, affirmative, and / or control) and
6. The Social Stories describe rather than direct by following the descriptive formula descriptive sentences plus perspective sentences plus cooperative sentences plus affirmative sentences equals stories that describe rather than direct the students.
7. The Social Stories are tailored to the abilities and interests of the participants.
8. Social Stories can include individually tailored instructions
9. The Social Story has a title that meets the first four criteria listed above.

APPENDIX H

SOCIAL STORIES

Social Stories

Asking a friend to play

I have many friends.

Friends like to play with each other.

Sometimes I want to play with a friend.

I can ask a friend to play with me by saying, “do you want to play?”

Sometimes friends will say yes.

Sometimes friends will say no.

If the friend says no I can ask someone else to play.

I can play with a lot of friends.

Playing together can be fun.

We can play many different things.

Waiting for a turn

There are many times when I have to wait.

Sometimes I have to wait at school.

Sometimes I have to wait at home.

Waiting can be very hard.

I can ask, “Can I have a turn?”

I can wait quietly or I can pick something else to do.

Waiting for my turn is a good thing to do.

I know my turn is coming soon.

Sharing (Gray, 2004, p.11)

I may try to share with people.

Sometimes they will share with me.

I can share at home and at school.

Usually, sharing is a good idea.

Sometimes if I share with someone, they may be my friend.

Sharing with others makes them feel welcome.

Sharing with others makes me feel good.

Joining in

There are a lot of friends in my class.

My friends play with many different things.

Sometimes I want to play with friends who are already playing.

If I watch them carefully, I can figure out what they are playing.

Then I can start playing with them.

I can do what they are doing.

Joining in with friends is a lot of fun.

Using nice words

There are many nice words that I know.

People like to hear nice words.

Using nice words with other people makes them happy.

Sometimes using nice words will help people be my friend.

I can use nice words about things other people are doing.

I can use nice words about things other people are wearing.

I can use nice words to at home and at school.

Using nice words makes me feel good.

Talking to Friends

Sometimes friends will talk to me.

When friends talk to me, I should answer them right away.

When I answer my friends, they know I was listening.

Answering friends makes them feel good.

I can answer friends even when I don't like what they are saying.

I can talk about the same things they talk about.

I can tell them my ideas, too.

Answering people shows them I am a nice person.

Answering people shows them I am their friend.

APPENDIX I

OUTLINE OF TRAINING A

Training for the Classroom Teachers and

Special Education Teacher Assistant on the TIS

1. Introductions
2. Pass out the TIS
3. Review the Directions for the TIS
4. Review the questions
    a. give examples for each question
    b. give non-examples for each question
5. Complete a practice form
6. Answer questions from participants
7. Pass TIS out forms for each child participating in the study

APPENDIX J

OUTLINE OF TRAINING B

Training on the Implementation of the

Social Story Only Intervention

1. Introductions
2. Review purpose of Social Stories
3. Discuss components of Social Stories
4. Review how to implement the intervention
    a. pass out treatment fidelity checklist
    b. read treatment fidelity checklist
    c. review how to call students to the intervention
    d. review Social Stories
    e. review setting the timer
    f. review expectations for play sessions (minimal interference except for safety or redirection purposes)
5. Practice reading the Social Stories
6. Model sending students to play session
7. Answer questions from participants

APPENDIX K

OUTLINE OF TRAINING C

Training on the Implementation of the

Social Story-Plus Practice Session Intervention

1. Introductions
2. Review purpose of Social Stories
3. Discuss components of Social Stories
4. Review how to implement the intervention
    a. pass out treatment fidelity checklist
    b. read treatment fidelity checklist
    c. review how to call students to the intervention
    d. review Social Stories
    e. practice reading Social Stories
    f. review Practice Session
    g. model teaching a practice session
    h. review expectations for play sessions (minimal interference except for safety or redirection purposes)
    i. model sending the students to play session
5. Answer questions from participants

APPENDIX L

OUTLINE OF TRAINING ONE

Training on Scoring the TIS for the

Interrater Observers

1. Introductions
2. Pass out the TIS
3. Review the directions
4. Examing the forms
5. Practice adding up the points on the forms
6. Answer Questions

APPENDIX M

OUTLINE OF TRAINING TWO

Training on Scoring the SIOS

1. Introductions
2. Review the directions
3. Review the forms
    a. read each question
    b. discuss examples and non-examples of each question
4. Practice scoring forms
    a. watch a video segment
    b. complete a form
    c. compare scores
    d. discuss disagreements
5. Repeat until 100% agreement is reached over two consecutive observations
6. Answer questions

APPENDIX N

STUDY SCHEDULES

Original Schedule

	Pre-phase	Phase 1	Phase 2						Phase 3	Phase 4		Phase 5
Week	Pre-study	1	2	3	4	5	6	7	8 (First Day)	8	9	10 (First Day)
Social Story-Only	Consent Group Assignment Training A, B, C	Pre-test Training 1, 2, 3,	Social Story Play Session						Post-test	Maintenance		Post-test
			SS 1	SS 2	SS 3	SS 4	SS 5	SS 6				
Social Story-Plus Practice Session	Consent Group Assignment Training A, B, C	Pre-test Training 1, 2, 3,	Social Story Practice Session Play Session						Post-test	Maintenance		Post-test
			SS 1	SS 2	SS 3	SS 4	SS 5	SS 6				

Note. SS stands for Social Story.

Revised Schedule

	Pre-phase	Phase 1	Phase 2					Phase 3	Phase 4		Phase 5
Week	Pre-study	1	2	3	4	5	6*	7	7	8	9 (First Day)
Social Story-Only	Consent Group Assignment Training A, B, C	Pre-test Training 1, 2, 3,	Social Story Play Session					Post-test	Maintenance		Post-test
			SS 1	SS 2	SS 3	SS 4	SS 5				
Social Story-Plus Practice Session	Consent Group Assignment Training A, B, C	Pre-test Training 1, 2, 3,	Social Story Practice Session Play Session					Post-test	Maintenance		Post-test
			SS 1	SS 2	SS 3	SS 4	SS 5				

Note. SS stands for Social Story. *Length of study shortened due to teacher scheduling conflict

APPENDIX O

STEPS FOR PRACTICE SESSIONS

Steps for Implementing Practice Session

1. After reading the Social Story, model the skill (target behavior) for the group with Steps listed on the back of the social story
2. Students complete Skill Practice 3 times
    a. Student 1 practices the skill with Student 2
        i. Teacher prompts student to complete the skill steps
        ii. Teacher provides feedback
    b. Student 1 practices the skill with Student 3
        i. Teacher prompts student to complete the skill steps
        ii. Teacher provides feedback
    c. Student 1 practices the skill with Student 4
        i. Teacher prompts student to complete the skill steps
        ii. Teacher provides feedback

        (* in case of student absence, the student should practice with the teacher to ensure 3 practices occur)
3. Repeat Process for Students 2, 3, and 4.
6. Send students to the play area and begin timer.

APPENDIX P

STEPS TO TEACHING TARGET BEHAVIORS

IN PRACTICE SESSIONS

Steps to teaching Target Behaviors

(adapted from McGinnis and Goldstein, 2003)

Sharing materials (p. 110)

Make a sharing plan with your friend

(teacher to discuss different ways friends can share such as playing together or trading toys, and taking turns)

Ask friend if they agree

Do it

Day one= sharing toys at the table

Day two= sharing art materials

Day three= sharing the couch

Day four= sharing the last cookie

Inviting a friend to play (p. 113)

Decide if you want to play

Decide who you want to play with

Ask them to play

Day one= asking someone to play

Day two= asking someone to play with your favorite toy

Day three= asking someone to play while outside

Day four= asking someone from your house to play (brother, sister, cousin, babysitter,etc.)

Waiting for a turn (p. 108)

Say it's hard to wait but I can do it

Choose

Wait quietly

Do something else

Do it

Day one= waiting for a turn

Day two= waiting to wash your hands

Day three= waiting to go down the slide

Day four= waiting to talk to your mom at home

Giving a compliment (For the children this will be called "Using nice words" (p. 86))

Use a friendly look

Use a friendly voice

Use nice words

Day one= using nice words about clothes

Day two= using nice words at art

Day three= using nice words on the slide

Day four= using nice words at home

Joining in (p. 107)

Move close

Watch

Ask

Day one= joining in

Day two= join in games at recess

Day three= join in a game at home with brother or a sister

Day four= join in a group of children at housekeeping

Responding a friend

Listen to what your friend says

Think of an answer using nice words

Say something nice back to them

Day one= responding to a friend

Day two= responding to a friend at lunch

Day three= responding to the teacher when she talks to you

Day four= responding to someone you don't like

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