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THE EFFECTS OF CURRICULUM-BASED PEER-MEDIATED SOCIAL SKILLS TRAINING ON THE POSITIVE PEER INTERACTIONS OF PRESCHOOL CHILDREN WITH SPECIAL NEEDS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of the Ohio State University

By

Chu-Sui Lin, B. A., M. S.

***************

The Ohio State University

1996

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College of Education
Department of Educational Services and Research
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**FIELDS OF STUDY**

Major Field: Special Education

Studies in: Severe Behavior Disorders
Early Childhood Special Education
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CHAPTER 1

INTRODUCTION

Statement of Problem

Acquiring social interaction skills and learning to use them competently with peers has been described as a major developmental task of the preschool years (Odom, McConnell, & McEvoy, 1992). The development of positive peer interaction skills is important during the preschool years for a number of reasons. First, peer interactions enable children to acquire and practice a wide range of competencies such as pivotal language skills, resolution of conflicts over toys, and sharing the toys (Kohler & Strain, 1993). In the absence of these peer experiences, children fail to develop appropriate interpersonal skills (French & Tyne, 1982).

Second, these skills form the foundation for positive peer relationships and friendships in later life. Individual differences in children's relationship styles has been found to begin to stabilize by the preschool years (Mize, 1995). Social incompetence appears to be consistent over time and situation (Asher, Singleton, Tinsely, & Hymel, 1979). Wehby, Dodge, and Valente (1993) found that children identified as high-risk in the development of behavior problems at kindergarten demonstrate difficulties one year later in their interactions with teachers and parents when compared to a low-risk group.
Finally, children with poor interpersonal skills do not generally outgrow their social deficits; on the contrary, they are likely to develop more problem behaviors within the classroom environment (Campbell, 1990). Children who experience trouble with peer interactions during preschool are judged to be at increased risk for academic difficulties (Cartledge & Milburn, 1995), juvenile delinquency (Roff, Sells, & Golden, 1972), mental illness (Cowen, 1973), and suicide (Stengel, 1971).

Young children with disabilities often lag behind their typically developing same-aged peers in social skills. A number of studies have investigated the peer relations of young children with disabilities. A substantial proportion of young children with developmental disabilities in these studies manifest significant problems in peer-related social competence. For example, Field (1980) compared a group of children with developmental delays to an equivalent group of normally developing children. The results suggested that delayed children had a less-extensive repertoire of peer-related social behaviors. Guralnick and Weinhouse (1984) found unusual and marked deficits in the peer related social interactions of children with disabilities. Not only did solitary and parallel play remain the dominant form of social participation throughout the year, but also children often were not able to turn simple two-unit initiation-response sequences into longer, more elaborate social exchanges. As a consequence, the large majority of children with disabilities in the mainstream settings rarely engaged in sustained social exchanges with their peers.

This peer interaction deficit is particularly apparent for young children with autism. Children with autism are well known for their profound deficits in social behavior and social competence. In Kanner's (1943) original
description of children with autism, as well as in the current DSM-IV (American Psychiatric Association, 1994) criteria for diagnosis of autistic disorder, the inability to relate normally to other people is given as a fundamental characteristic of this disorder. Kanner described in this original study that "these children have come into the world with innate inability to form the usual, biologically provided affective contact with other people, just as other children come into the world with innate physical or intellectual handicaps" (p. 250).

Children with autism are often described in research studies as evidencing behaviors such as a preference for solitary behavior, rigid adherence to structure and schedule, indifference to others, and a tendency to perseverate on trivial things or thoughts (Kamps, Leonard, Vernon, Dugan, & Delquadri, 1992). Wolfberg and Schuler (1993) further described the social exclusion of children with autism as a "failure to imitate and comprehend the social nuances involved in entering and coordinating joint play activities, as well as to interpret social advances made by other children, increases their likelihood of social isolation" (p. 468).

Qualitative impairments in reciprocal social interaction, imaginative activity, and a markedly restricted repertoire of activities and interests are viewed as hallmarks of the syndrome autism (American Psychiatric Association, 1994). As Rutter (1983) has pointed out, however, "until very recently, the social abnormalities of autistic children have been the least studied of all the features of syndrome" (p. 524). Most research on autism has focused on the cognitive and language characteristics. The dearth of studies investigating social competence and social relationships among children with
autism is somewhat surprising because these children, by definition, experience difficulties in their peer relationship.

Given the significance of early development of social interaction skills and substantial social interaction deficits exhibited by children with disabilities, a major objective in early childhood education programs for children with autism and other developmental disabilities should be designed to increase the social interactions of children with developmental disabilities and their less disabled or normally developing peers.

Odom, McConnell, and Chandler (1993) surveyed the needs for social interaction training programs with 131 preschool special education teachers in five geographical areas. In this study, teachers reported that 74% of the children in their classes were in need of social skills instruction. Ninety-eight percent of the teachers indicated a need for materials and information in designing a social interaction instructional program for their children.

The discrepancy between the teachers’ needs and existing materials and information reflects several limitations in designing current social skills intervention for children with disabilities. First, most preschool special education teachers are uncertain how to increase prosocial behaviors in skill deficit youngsters. They may feel less prepared to address social and behavioral skills than preacademic skills. Second, in most early childhood special education curriculums such as Battelle Development Inventory (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984), the Carolina Curriculum for Preschoolers with Special Needs (Johnson-Martin, Attermeier, & Hacker, 1990) as cited by McAllister (1991), social skills have always been viewed as secondary to skills in other domains and have been relatively neglected in some curriculums.
Those limitations may be surprising because fostering young children's social competence traditionally has been a priority for both parents of young children and educators (Mize, 1995). Nevertheless, this is an area that appears wanting, as McAllister (1991) observes that early childhood special education training programs need to prepare prospective educators for an expanding role in social and behavioral interventions. The development of a comprehensive, sequential approach to enhance the social relatedness and social competence of children with disabilities in early childhood special education is warranted.

Purposes of Study

According to Kratochwill and French (1984), there are two treatment models which serve to remediate the social deficits of withdrawn children. One is a skill deficit model, which assumes that some children display social deficits because they do not have the various requisite social skills to successfully interact with peers. The other is a performance deficit model which suggests that children may already have requisite social skills, but fail to perform because of motivational problems such as the presence of other interfering behaviors (e.g., anger, anxiety, impulsivity, etc.).

These two views are directly linked to intervention strategies for children with disabilities. Children with social skill deficits should be remediated primarily through the direct teaching the social skills. Modeling and coaching strategies, which involve telling, showing and rehearsing the target social skill are the most powerful strategies for these children. On the other hand, children with performance deficits need to be motivated to perform the appropriate behavior through the use of three basic strategies. These strategies included naturalistic (e.g., environmental structuring,
behavior momentum, affectionate activities, incidental teaching, pivotal response training), adult-mediated operant (i.e., teacher's praise, teacher reinforcement, and shaping), and peer-mediated (i.e., peer-pairing, peer-initiation, group contingencies, peer tutoring/cooperative learning).

Early investigations (e.g., Allen, Hart, Buell, Harris, & Wolf, 1964; Strain & Timm, 1974; Wolfe, Boyd, Wolfe, 1983) offered evidence of the effectiveness of adult-mediated procedures on increasing social interactions of preschool children. That is, carefully arranged adult attention, teacher prompts, and praise increased the rates of social interactions of preschool children in free-play settings.

Using peers as change agents in increasing the social interactions of children with special needs has been well documented in the literature. Various investigations have demonstrated peer-mediated strategies (e.g., modeling, prompting, tutoring) to be an appropriate vehicle for improving social skills and the language development of children with autism and other developmental disabilities (Fox, Shores, Linderman, & Strain, 1986; Goldstien, Kaczmark, & Pennington, 1992; Kamps, Barbetta, Leonard, & Delquadri, 1994; Odom & Strain, 1984; Odom & Watts, 1991; Pierce & Schreibman, 1995; Ragland, Kerr, & Strain, 1978; Sainato & Goldstein, 1992; Strain, 1985; Strain, Shores, & Timm, 1977).

Peer-mediated social skills training involves prompting children to initiate interactions with peers and praising them when the children interact. Common to these types of interventions is the inclusion of more socially competent peers as play partners. A major rationale for using peer-mediated procedures is the abundance of opportunities for learning through
observation and interaction with more competent peers (Odom & McEvoy, 1988).

Compared to age-mates with typical development, children eligible for early childhood special education services exhibit lower rates of social initiations and social responses; spend less time engaged in classroom activities where social interaction is likely to occur; and are likely to use fewer, and lower-quality, social strategies for participating effectively in interactions with other children (Peterson & McConnell, 1993). Preschool children with disabilities, in other words, exhibit both performance and social skills deficits and need instructions both in social skills and reinforcement strategies in increasing social interactions with their peers.

Very few studies have been conducted with curriculum-based programs for preschool children with disabilities. A curriculum-based approach is based on the premise that social competence can be broken down into a number of specific, observable skills (Hops, 1983). The approach places strong emphasis on the curriculum as the framework that structures and organizes interventions. The nature of the model assumes that educators be the primary agents of the interventions, whether those interventions take place in a preschool classroom or in the home (McAllister, 1991).

The basic assumption of curriculum-based approach is that social skills can indeed be taught directly, as is done in all other areas of the curriculum. As various authorities point out (e.g., Cartledge & Milburn, 1986, 1995; Elliott & Ershler, 1990) teaching social skills to children involves many of the same methods as teaching academic skills. Methods for teaching social skills and academic skills involve modeling, corrective feedback, and opportunities for practice.
Curriculum-based approaches help teachers in making use of skills and techniques already in their repertoires and applying them to the teaching of social skills. Following this didactic model, Taking Part: Introducing Social Skills to Children (Cartledge & Kleefeld, 1991), a training program in social skills for children in regular and mainstreamed classrooms, preschool through grade three, was chosen to implement this study.

Making interventions an integral part of the curriculum serves to stress the importance of social skills in preschool education and to elevate such skills to a level equal with other curricular domains. However, more research is still needed to investigate the effects of a curriculum-based approach on social and behavioral concerns.

Middleton and Cartledge (1995) investigated the effects of Taking Part curriculum on the aggressive behaviors of five elementary-aged African American male students in an urban public school setting. Parent training and parent notes were also used for the maintenance and transfer of newly learned skills. The results indicated that the social skills instructional package was functionally related to a decrease in aggressive behaviors with four of the five students and maintained by parent involvement.

Elliott and Ershler (1990) suggested that social skills curricula should emphasize positive, nonaversive methods. Inappropriate behaviors can often be addressed by targeting incompatible, prosocial skills. The Taking Part Curriculum, aiming to provide teachers, clinicians, and other professionals with specific strategies for social skills instructions, utilizes the most positive and effective strategies such as teacher prompts and teacher praise in helping children learn the social skills.
The purpose of this study was to determine if the multicomponent curriculum package utilizing the Taking Part curriculum (Cartledge & Kleefeld, 1991) and peer-mediated procedures would effectively increase the social interactions of preschool children with disabilities. Specifically, five lessons from the Taking Part curriculum - greeting, sharing, turn-taking, helping others participate, and offering and giving help, which had previously been shown to be effective in setting the occasion for a positive response from peers, were selected to be implemented in the classroom setting. These five lessons were abbreviated and adapted to each peer tutor's developmental level.

Each lesson was taught in tutoring pairs (i.e., one peer tutor and one tutee) and followed a three-part sequence: motivation, practice, and maintenance. The peer tutor (i.e., a more socially competent child with disability) was first taught the target skill through scripted stories involving modeling, and role-playing. Then the tutee with severe social handicaps was introduced into the group during the practice session. In the final phase of each lesson plan, teacher prompts, teacher reinforcement, and parent's notes were used for skill maintenance and generalization.

The social skills intervention was implemented within the context of the regular classroom rather than in structured role-plays in segregated settings to avoid problems in generalization across settings that have been reported in much of the research (e.g., McEvoy, Odom, McConnell, 1992). The goal of this study was to promote higher levels of positive peer interactions among the children, with particular emphasis on increasing positive peer interactions for the less competent (i.e., autistic/autistic like) children. The
study was designed to increase students' responding and cooperative peer interactions.

Taken together, this study was designed to determine the efficacy of a curriculum-based approach (e.g., Cartledge & Kleefeld, 1991) combined with peer-mediated procedures in promoting positive peer interactions of preschool children with disabilities. In addition, the investigator wished to determine if the observed changes would generalize to other generalization children and could be socially validated by significant others (i.e., parents and teachers).

The major limitation of this study was the failure to assess the effects of maintenance due to length of the study (i.e., too little time to conduct at the end of school year). In addition, the study was limited by several important factors such as absences of teachers and students, and teacher use of prompts and reinforcement techniques. More details of these limitations are discussed in Chapter 5.

Research Questions

This study investigated the use of a curriculum-based and peer-mediated model to promote the social interactions of preschool children with disabilities. Specifically, this study was designed to address the following questions:

1. What were the effects of curriculum-based peer-mediated social skills training on the percentage of intervals of positive peer interactions for peer tutors and their tutees?

2. What were the effects of curriculum-based peer-mediated social skills training on the percentage of intervals of positive peer interactions with generalization peers for four tutees?
3. What were the effects of curriculum-based peer-mediated social skills training on the number of verbal initiations/interactions for four peer tutors?

4. What were the teachers' and parents' opinions of the utility and efficacy of the social skills training in improving the student's social communication skills?

Terminology and Definitions

The following terms were used in this study.

Positive peer interactions. Positive peer interaction was defined as any positive verbal or nonverbal social initiation and response to the target peer. Positive social initiation includes greeting (e.g., saying "Hi"), suggesting ideas for play (e.g., handing the peer a ball or saying "play blocks."); talking about the ongoing activity (e.g.,", the ball is blue", "Geoffrey is building that tower high"), offering a toy or material to another child, turn-taking, and offering to help. Positive social response includes complying with a request, repeating, requesting clarification, or answering questions. Specific behaviors included for observation were looking at a peer, nodding one's head, or stating "please say that again".

Positive peer interactions with generalization peers. Generalization peers were the children who either were not selected as subjects in the study and received no social skill training or they part of the study but were not paired with the targeted student. That is, excluding the selected partner, the rest of the children in the class were considered as the generalization peers. For example, the generalization peers for Matthew were all the children in the class excluding Tom because Tom was selected as his partner and Tom and Matthew received direct instruction to interact with each other. Positive
peer interactions with generalization peers were defined and recorded the same as positive peer interaction except the initiations and responses were directed to generalization peers.

**Social competence.** Children's effective and appropriate use of social behavior in their social interactions with peers.

**Social interaction.** The direct exchange of words, gestures, toys, or other materials between two or more children (Odom & Brown, 1994).

**Social skills.** Socially acceptable learned behaviors that enable a person to interact with others in ways that "elicit positive responses and assist in avoiding negative responses from them" (p. 3, Cartledge & Milburn, 1995).

**Verbal initiations/interactions.** The data for this category were collected only for the peer tutors, and were recorded by attaching small tape recorders to the children during nonteacher-directed activities. Verbal initiations/interactions were defined as any instance of a voluntary verbal utterance directed at another child. In order to record discrete utterances, a 3-second (3s) time period had to lapse to avoid counting repetitions such as "Gimme that! Gimme that!". Verbal utterances in response to the teacher's prompts and cues to exhibit or practice language were not included as initiations. Only spontaneous verbal utterances that initiated or maintained peer interactions were included.

**Teacher prompts.** Teacher prompts were defined as verbal or physical acts (i.e., suggestion or gesture) delivered by the teacher directing the child to engage in social interactions with peers. These prompts were designed to signal a child to initiate an interaction or respond to the initiation of peers. A prompt was considered to be successful if the child complied.
CHAPTER 2

REVIEW OF LITERATURE

This chapter reviews the literature on intervention strategies directed at increasing positive peer interactions of children with disabilities. According to the treatment models mentioned by Kratochwill and French (1984), two types of intervention procedures have been reviewed. The first type focuses on motivating social interaction for children with disabilities. For this procedure, three types of intervention strategies are presented including naturalistic procedures (e.g., affectionate activities, behavior momentum, incidental teaching, pivotal response training), adult-mediated operant procedures (i.e., teacher's praise, teacher's reinforcement, and shaping), and peer-mediated procedures (i.e., peer-pairing/proximity, peer-initiation, group contingencies, peer-tutoring/cooperative learning).

The second major type of interventions focuses on directly teaching social skills to children using a social learning approach such as modeling, role-playing and coaching. A social learning approach may be limited to children with severe disabilities. The adaptation of social learning approaches to the social skills training program for severely handicapped children is included. Also reviewed is the literature on using social skill curricula such as the Taking Part (Cartledge & Kleefeld, 1991), and Integrated
Strategies for Motivating Social Interactions

Naturalistic Teaching Techniques

One approach to improving young children's social interactions has been to intervene within naturally occurring contexts and situations during the preschool day. This approach is less structured than traditional social skill training, which involves teachers modifying classroom activities so that they become more supportive of children's social interactions.

Environmental structuring. One strategy described by Sainato and Carta (1992) for facilitating children's social interactions is the systematic arrangement of environments. Environmental structuring includes alterations of the physical and social context of a setting. In the physical arrangement of a setting, the play materials and the manipulation of the amount of space made available for children are the strategies that have been used to facilitate the social interactions of preschool children with disabilities. In the social arrangement strategies, teachers structured group activities (e.g., discussion of the activity, suggesting sociodramatic roles, assignment of roles or expectations) that modify the classroom environment to be more supportive of children's social interaction with peers.

Activities and play materials are believed to set the occasion for the occurrence of reciprocal interaction in preschool children. Quilitch and Risley (1973) investigated the effects that various play materials have upon children's social behavior. Children in an urban recreation center were systematically provided with toys designed for social or isolate play. The results indicated that social play occurred only 16% of the time when the
children were provided with "isolate" toys. However, social play increased to 78% when children were provided with "social" toys.

Linder (1976) developed an intervention program for a withdrawn child in the regular classroom. The collection of materials used in the study included a series of 40 activities. Each activity involved interaction between the child with social skills deficits and at least one other child. The intervention program using cooperative activities increased the number of interactions between the withdrawn child and the peers.

An observational study by Tremblay and Strain (1980) was also designed to determine whether a different range of activity contexts might characterize the positive peer interactions of preschool children. Eleven socially outgoing preschool children and 10 socially isolate preschool children (age 3-6) were observed for 12 sessions. Results showed that: (a) socially outgoing children engaged in significantly more cooperative and sociodramatic play than did isolate children and (b) isolate children engaged in significantly more isolate play than did socially outgoing children. This study demonstrated a clear relationship between the type of activity and the frequency of positive social initiations.

Anderson (1985) further has demonstrated the clear relationship between cooperative group activities and peer acceptance. In this study, cooperative learning activities were administered for 30 minutes a day for 17 consecutive sessions. Significant improvement was found in the areas of peer acceptance and cooperation.

Another strategy in the arrangement of social environments involved the assignment of a specific role to a child with social skill deficits. For example, the study conducted by Kirby and Toler (1970) assigned a five-year-old...
old preschool boy to pass out candy to his classmates. When he finished the task, he was subsequently given a nickel, candy, and praise from the teacher. The results indicated that the boy's rate of initiating activities with his classmates rose steadily from an average of 3 to an average of 9.8 activities per day during the final week. The study suggested that through being paired with a primary reinforcer such as candy, the child would acquire more reinforcing properties for his peers so that they would be more inclined to interact him.

Another similar study by Sainato, Maheady, and Shook (1985) involved awarding a classroom manager role to a socially withdrawn child. The results also demonstrated the effectiveness of this intervention strategy in altering the social status of preschool children with social behavior handicaps.

**Behavioral momentum.** This procedure involved the delivery of a series of high-probability (high-p) requests (i.e., requests to which compliance is highly likely) immediately prior to a low-probability (low-p) request (i.e., a request that is typically followed by noncompliance). These techniques, interspersed high probability requests, have been developed as a proactive procedure to reduce noncompliance in a variety of settings and individuals (Davis & Brady, 1993). Currently, this procedure has been linked to improving the social interactions of children with severe behavior handicaps.

Davis, Brady, Hamilton, McEvoy, and Williams (1994) used high-probability requests to increase social interactions in 3 young boys, aged 5 to 6 with autism. As in the previous studies, the investigators identified play requests the child would perform as high-ps and requests to initiate interactions with nondisabled peers as low-ps. The high-p sequence was
interspersed throughout the play session within the natural play context. That is, the teacher might ask the child to "Touch the ball," "Say ball", and "Pick up the ball", just prior to asking him to "Throw the ball to John." The results demonstrated that the high-probability requests increased the students' responsiveness to low-probability requests to initiate social behavior. Increases were also found in unprompted initiations to the generalization peers and to the generalization setting. The students maintained increased levels of initiations and interactions after all prompts were removed from both the training and nontraining settings.

As Davis and Brady (1993) indicated that "the mutual reinforcement that maintains reciprocal social responding, what Baer refers to as a reinforcement trap (McConnell, 1987; Stokes & Baer, 1976), is similar in nature to the Nevin, Mandell, and Atak (1983) explanation for behavioral momentum. Increases in reinforcement produce increases in the momentum of behavior and therefore, increases the likelihood that behavior will continue" (p. 217). Given the similarities in the theoretical framework, behavioral momentum may appear a promising strategy for children with severe disabilities. More research, however, is still needed to determine the effectiveness of this strategy.

**Group affection activities.** Group affection activities is one of the strategies that embeds the "intervention" in activities that occur in typical early childhood settings. Twardosz, Nordquist, Simon, and Botkin (1983) developed an intervention package called "group affection activities" to promote children's social behavior during routine preschool activities. The intervention package included: (a) a discussion on the importance of friends and the designation of special friends, (b) practice of affectionate social
initiations, such as hugs, tickles, and compliments during the group activities, and (c) subsequent teacher praise and acknowledgment of any interactions that occurred during other activities.

Brown, Ragland, and Fox (1988) investigated the effects of group socialization procedures on the positive peer interactions of young children with developmental difficulties. The results indicted that gains in structured preschool activities generalized to nonintervention play periods.

Group affection activities have provided teachers and children with many opportunities to discuss friendship and proactive affectionate responses during stories, songs, and games. Children's social interactions can be facilitated during both structured activities and free-play periods.

Incidental teaching. Incidental teaching of social skills is similar to other naturalistic social skills remediation procedures, such as group affection activities in that it is performed in typical classroom situations. Routine, unstructured classroom activities such as snack time and free play are excellent situations in which incidental teaching episodes can take place.

Incidental teaching developed by Hart and Risley (1968, 1974, 1975, 1980) was first used to promote young children's language development. A key element that distinguishes an incidental teaching approach from a more traditional approach is that teaching occurs in the contexts in which the skills naturally occur. In short, incidental teaching is the application of operant techniques in the typical daily activities such as eating, dressing, and playing. In addition, incidental teaching is child-initiated and teaching episodes are short in duration.

As defined by Hart and Risely (1982), "incidental teaching is a process that occurs when the natural environment is arranged to attract children to
desired materials and activities, and an adult is available to provide attention, praise, and instruction when a child is initiating an interaction related to a topic of immediate interest. If necessary, the adult verifies that the child's topic is a prepotent reinforcer available in the environment, then requests an elaboration or improvement in the child's request. If the child is unable to produce the elaborated response, prompts or models are provided to assure correct responding, which is followed by adult approval and access to the requested materials, activity, or information" (p. 11). Table 1 presents the details of incidental teaching on social skills of preschool children.

Oswald, Lignugaris, and West (1990) used incidental teaching procedures to teach a 16-year-old student with mild disabilities to use social amenities in a resource classroom. The study was conducted in three classrooms in a suburban high school; one classroom where training was conducted and two classrooms where performance generalization was assessed. Two dependent measures were collected during the study: (a) the frequency of saying "thank you" after teacher assistance and (b) the frequency of saying "please" when requesting help on an assignment during a 50-minute observation period. The first three intervention sessions for each social amenity included reminders, a discussion and demonstration of how, when, and why to use the social amenities. In subsequent classes the student was only reminded to use the skill (e.g., From now on I want you to say "thank you" whenever you receive help on an assignment.); teacher did not engage in a lengthy discussion. Finally, the student was told that computer time might be available if he practiced the skill. The results indicated his increased use of social amenities in the training setting. Moreover, the gains
Incidental Teaching of Social Skills

Step 1-Identify the Setting
Identify common classroom situations and circumstances that would allow teachers to use incidental teaching of social behavior with their students.

Step 2- Decide Teaching Episodes
Teaching episodes should be brief and should be conducted during unstructured activities.

Step 3-Identify Child's Initiations
Child's' initiations included reaching for, pointing to, or gesturing toward an item as well as asking questions and making verbal requests.

Step 4-Follow Child Lead
Be observant and sensitive and follow the lead of the child to identify potentially reinforcing situations.

Step 5-Verify Child's Intention
Unless child’s intention is obvious from what the child is doing or looking at, the adult should verify what the intention is.

Step 6-Identify Elaboration Requests
Requests for elaboration included requests for both verbal and nonverbal responses. Verbal requests include asking questions, asking for verbal imitation. Nonverbal response include yes/no questions, or gestures.

Step 7-Decide Assisting Methods
Planing various methods (e.g., prompt, model) of encouraging social interaction.

Step 8-Decide Levels of Prompt
Level 1-Fullest Degree=Model for Imitation
Level 2-Medium Degree=Partial Model
Level 3=Minimal Degree=Hint

Step 9-Behavioral Traps
Make social interactions as pleasant as possible. Make the behavior kick on the natural contingencies of reinforcement (social reciprocity).

Table 1: Incidental Teaching of Social Behavior
were also generalized to untrained settings such as a second resource classroom and an art classroom.

Recently, several researchers have combined peer-to-peer teaching with incidental teaching to promote social behavior. For example, McGee, Almedia, and Sulzer-Azaroff (1992) used peer incidental teaching to promote reciprocal peer interactions of three preschool children with autism and their typical peers. Peer tutor training was conducted in the context of free-play period. Instructional sessions took place for 5 minutes once each day.

The peer tutor was provided as much instruction, modeling, and assistance as needed to perform the following steps: (a) wait for the target child to initiate a request for (i.e., reach for) a toy, (b) ask the target child for the label of the toy ("Say duck"), (c) give the toy to the target child when he labeled it, and (d) praise the correct answer ("That is great! You say "duck"). A multiple baseline across the three target children showed replicated positive effects of the intervention. Multiple measures of the extent and limits of generalization suggested that only one child increased interactions in free-play periods throughout the day, but none of the children showed increases at lunch.

Farmer-Dougan (1994) extended peer incidental teaching strategy with older populations (adults). Peer incidental teaching strategy was used to teach appropriate requesting behaviors during lunch preparation to adults with moderate to severe mental retardation. Three peer tutors were given verbal instructions for evoking an appropriate request and were prompted to use a prompt card during lunch preparation sessions. Five steps were taught to the peer tutors during the training: (a) watch for an initiation, (b) remove the desired item, (c) ask for a correct response, and (d) wait for a correct response,
and (e) give reward. Incorporating peer incidental teaching into the lunch-making routine also increased the spontaneous use of incidental teaching during dinnertime when it was neither required nor trained.

Strain, Danko, and Kohler (1995) used a series of reversal designs to improve the active engagement and the peer social skills of five preschool children with autism. A total of 22 preschoolers participated in this study. All children were enrolled in two different classrooms in a half-day integrated preschool program for children with autism and their nondisabled peers. All experimental observations and intervention took place during a 45-minute daily free-play period. During the "engagement" intervention, teachers were asked to facilitate the target children's active engagement with play materials to use the incidental teaching approach. In the "social intervention", teachers were also directed by following incidental teaching procedure to facilitate the target child's social interaction with nondisabled peers. The study indicated that both the engagement and social intervention resulted in increases in the peer interactions.

Pivotal response training. A similar naturalistic technique, pivotal response training, has been shown to increase the language and social behaviors of children with autism effectively (Thorp, Stahmer, & Schreibman, 1995). Pivotal response training (PRT), like incidental teaching, is one type of loose training technique. The key elements of pivotal response training also include: (a) conducting the lessons in the natural context, (b) providing multiple exemplars, and (c) incorporating the target child's preference into the teaching interaction.

Recently, PRT has been utilized with peer-mediated procedures to promote the social skills of the low-functioning classmates with autism.
Pierce and Schreibman (1995) taught two 10-year-old boys with autism to engage in a variety of complex social behaviors using peer-mediated pivotal response training (PRT). Two peer trainers, who were also 10 years old, were selected by the teacher's recommendation of students who were cooperative and friendly. Each peer trainer was given a manual with PRT strategies in both pictorial and written form. Strategies were first modeled and explained by the therapist. After the two-hour didactic instruction, peer trainers were paired with a child with autism for PRT training, during which feedback was given by the therapist intermittently during each 10 minute play session. PRT occurred after approximately one month of training and a minimum of 80% accurate implementation of the strategies. The results showed maintenance and generality (i.e., across settings, behaviors and persons). Both children with autism maintained prolonged interactions with the peers, initiated play and conversations, and increased engagement in language and joint attention behaviors.

Baer and Wolf (1970) were the first to use the term behavioral trap in describing how natural contingencies of reinforcement operate to promote and maintain generalized behavior changes. "The essence of a trap, is that only a relatively simple response is necessary to enter the trap, yet once entered, the trap cannot be resisted in creating general behavior change" (p. 123). Incorporating peer-mediated procedures with naturalistic teaching techniques such as incidental teaching and PRT evidently augment the treatment effects in promoting generalization and maintenance. In peer incidental teaching, behavior trapping may have occurred during the training and withdrawal phases when the set of newly learned verbal and social
behaviors were reinforced by a related set of verbal and social behaviors (Farmer-Dougan, 1994).

**Impact of naturalistic teaching techniques.** Naturalistic teaching techniques such as environmental structuring may have several implications in promoting social interactions of preschool children with special needs. First are the benefits of motivation and generalization. Naturalistic teaching, also known as one type of loose training, is conducted in the natural context (i.e., routine activities or situations in the classroom), provides multiple exemplars, and incorporates the target child’s preference. The motivation problems in performing appropriate social skills can be addressed and remediated through this technique.

Second, naturalistic teaching techniques such as environmental structuring (e.g., play materials, and play space) are easily achieved. In naturalistic techniques, a teacher capitalizes on the occurrence of conditions that naturally call for a desired response by prompting and praising that response. Naturalistic teaching techniques were designed to minimize the time and effort required of the teacher. The strategy is particularly useful for classroom teachers because it can be used within the existing classroom structure.

As Witt and Elliot (1985) remind us, an intervention that is not used, regardless of its potential effectiveness, is no intervention at all. One study by Odom, Peterson, McConnell, and Ostrosky (1990) documented the implementation of a wide variety of social interaction interventions in 22 early childhood special education classrooms located in two different regions. Forty-nine specific intervention tactics were selected from available literature and operationalized for a classroom-based assessment. Likert-type ratings
were used to indicate the extent to which each intervention tactic was implemented in the observed classroom by two trained data collectors. The results indicated that few individual intervention tactics were implemented at high levels in participating classrooms. Content analyses of items with low versus high means suggested that techniques focusing on classroom-wide environmental structuring were implemented at higher levels than tactics that reflected more direct, teacher-mediated, or peer-mediated procedures.

Environmental structuring procedures alone, however, may not produce the maximum effects. For example, Odom and McConnell (1991), as cited in Peterson and McConnell (1993), evaluated the effects of four intervention packages (i.e., adult-mediated, peer-mediated, environmental structuring, and the combination of these three) on the children's social behaviors. Twenty early childhood classroom teachers were randomly assigned to one of the five experimental conditions (i.e., four interventions and a control condition), and provided intervention over at least 50 school days. The results of this study indicated that all four of active intervention conditions produced some changes on children's social behavior. Peer-mediated, and teacher-mediated approaches, however, were found to produce the most robust effects across children.

It is interesting to see the gap between the effects regarding social skills interventions, and the state of practice as evidenced by actual implementation in the classrooms. Ideally, naturalistic techniques need to be incorporated with other more intensive social skills intervention strategies such as direct instructions, adult or peer-mediated procedures in order to produce more reliable effects on children's social behaviors (Peterson & McConnell, 1993; Odom, McConnell, & Chandler, 1994).
Adult-Mediated Operant Procedures

The initial social intervention efforts with children with disabilities used reinforcement techniques to increase positive peer interactions. "Adult attention" has been well documented as an effective procedure for modifying social skills deficits in children. This procedure was first shown to be effective for changing social behavior in preschoolers on a series study by Allen et al. (1964).

Teacher reinforcement. Teacher reinforcement may include attention, verbal praise, tangible rewards ranging from food to various toys, and opportunities to engage in activities. The rationale for this technique is that reinforcement delivered after the interaction will increase the likelihood that children with disabilities will increase the interaction.

Allen et al. (1964) reported success in modifying the isolate behavior of a 4-year-old child. They found that systematic use of positive social reinforcement (adult attention) could increase the frequency of an isolates social exchanges. In this study, a preschool girl (4 years old) who exhibited a low rate of social interaction with her peers was helped to achieve and maintain more play relationships with peers. A contingent positive reinforcer, teacher attention was given contingent on interactive behaviors of the child. The child was given attention and praise by the teacher whenever he physically approached or verbally engaged another child. However, no attention was given when he was alone or engaged in solitary play. Following the last day of systematic reinforcement of interaction, the results showed that the child increased the amount of time she spent interacting with her peers from less than 20 percent to approximately 60 percent.
The study by Wolfe, Boyd, and Wolfe (1983) reported the effects of a reinforcement program on the social behavior of withdrawn preschool children. "Token" and "verbal praise" were used as positive reinforcers in this study. Happy face stickers were used as tokens which were placed on the corresponding block on the child's chart. For 15 minutes each session, children were rewarded a token for each minute that they engaged in cooperative play. Once cooperative play exceeded an 80% criterion, tokens were faded out but verbal praise continued. The results showed that cooperative play among these behavior-problem children increased at least 50% over baseline levels.

**Teacher prompts.** Teacher prompting represents a second adult-mediated operant technique that promotes social interaction with peers. Teacher prompting, as an intervention strategy, has most often been used directly in play settings with children, rather than in instructional settings outside of the social context. A prompt generally refers to a verbal or physical cue (i.e., suggestion or gesture) for the child with disabilities to engage in social interactions. Such prompts may signal a child to initiate an interaction or respond to the initiation of others.

Although prompting has been used in many more studies, it is combined with teacher reinforcement in most interventions. For example, Strain and Timm (1974) clearly demonstrated that adult attention combined with prompting and physical contact successfully increased the rates of positive interaction between a behaviorally disordered preschool child and her peers. The study was conducted under two conditions of contingent adult attention. In condition I, verbal praise and physical contact was directed to the child's classmates for appropriate interaction with the child. In condition II,
verbal praise and physical contact was directed specifically to the child for engaging in appropriate interaction. Results revealed that the target child and peers showed a rapid increase in their appropriate social behaviors either in Condition I (application of experimental contingencies to peers) or Condition II (application to contingencies to target child).

Odom and Strain (1986), as cited in Odom and Brown (1994), "used a prompting procedure to increase social initiations of children with autism, but did not withdraw the prompts before the intervention ended" (p. 47). In addition, McConnell, Sisson, Cort, and Strain (1991) provided prompts and reinforcement to children with behavior disorders after they had participated in social skills training, and found increases in the percentage of time spent in social interaction.

**Shaping.** The shaping procedure is accomplished by reinforcing successive approximations of a behavior until gradually the subject is able to perform the new behavior. A study by Wigley, Yule, and Berger (1987) used anxiety reduction/shaping techniques to help two withdrawn students develop relationships with their teachers. In the first case, a seven-year-old girl was helped to overcome her difficulty in approaching the teacher. There were several stages in the intervention, each lasting 2-3 days to a week. The teacher used shaping procedures to gradually reduce anxiety behavior of the students. The average number of interactions was found to increase from 0.9 to 5.28 per day during the intervention period. The other case in this study also illustrated that anxiety reduction/shaping techniques can be used effectively in classroom settings to help withdrawn children develop relationships with their teachers.
More recent studies in social interactions such as Odom and Strain (1986), McConnell et al. (1991) all used teacher prompts and reinforcement to increase social interaction of preschool children with disabilities. These studies did demonstrate an increase following intervention; however, the gains were not maintained during a follow-up. Lindeman, Fox, and Redelheim (1993) investigated the effects of double-prompting and booster session procedures on the social behavior of four socially withdrawn children. The study was conducted in three classrooms of a preschool program in a large metropolitan area. A combined double-prompting (i.e., prompt the target children and their peers), and contingent praise procedure was employed by the classroom teacher to increase the positive peer interactions of the target children and their peers during the free-play period. When maintenance of increased target initiations was not forthcoming, booster sessions were used to maintain subject initiations during follow-up. The results indicated target children's extended interactions with peers increased during intervention and remained high regardless of whether or not booster sessions were applied during follow-up.

Impact of adult-mediated operant procedures. Adult-mediated operant procedures proved to be a robust technique in increasing social interactions of preschool children. The ultimate purpose of adult-mediated procedures is usually to increase children's engagement in social interactions, with the social responses of the peers to eventually serve as the positive consequence or reinforcer for the interactions.

Few adult-mediated operant procedures, however, have proven successful in changing behavior beyond the treatment setting (Strain & Fox, 1981; Henderickson, Strain, Trembly, & Shores, 1982). One trend in social
interaction current research has been to fade teacher prompts or remove the teacher-administered reinforcement (i.e., tangible rewards) as well.

**Peer-Mediated Procedures**

Peer mediated strategies involve the use of peers in increasing social interactions of preschool children with disabilities. Such procedures are called peer-mediated because the teacher does not directly prompt or reinforce the child. The changes in social interaction of the children with disabilities are brought about by their peers.

The spill-over of treatment effects noted by Strain and Timm (1974) inspired research on peer-mediated interventions. They reported that planned increases in social initiations by a withdrawn child resulted in concurrent increases in peers' social interactions. Peers were found to be vicariously reinforced when they observed the target child being reinforced for social initiations. In turn, this vicarious reinforcement also increased the frequency of peer initiations and provided more opportunities for the target child to interact with peers. The important implication from this finding was that peers can be programmed to increase positive peer interactions.

The effort to utilize peers as intervention agents was brought about for two other reasons. First, few adult-mediated operant procedures have proven successful in changing behavior beyond the treatment setting. Use of peers as intervention agents, however, may help promote a cross-setting behavior change. Second, many children display social behavior problems only in the presence of peers. Behavior change brought about by children is more likely to be maintained in the absence of an adult (Strain & Fox, 1981). Two types of peer-mediated interventions are reviewed here: proximity/peer pairing, and peer initiation.
Proximity intervention-peer pairing. In proximity intervention, the socially competent children are not directly taught the skills for increasing the social interactions of the withdrawn children. Proximity intervention depends upon the natural interaction of withdrawn children and socially competent peers. In this intervention, socially competent children are paired with the withdrawn children and are instructed to play with the target children.

In a study by Furman, Rahe, and Hartup (1979), 24 socially withdrawn children were randomly assigned to 3 conditions (a) socialization with a socially competent younger child (b) socialization with an socially competent same-age child and (c) no treatment. Each isolate and his/her partner participated in 10 play sessions scheduled over a period of 4-6 weeks. Play sessions were conducted in a small room separate from the classroom. During each session, the children had an opportunity to play with two toys for 20 minutes. The results indicated that the first pair, the target child and a socially competent younger child produced the greater effects than the other two groups. Social contacts with younger children were found to contribute most to the social interactions of the withdrawn child.

Another study by Nietupski, Stainback, Gleissner, Stainback, and Nietupski (1982) also investigated the effects of proximity on the social behaviors of children with social skills deficits. In this study, a severely 3-year-old withdrawn preschool student was paired with his nondisabled peers. Two groups of nondisabled preschoolers—one was very socially outgoing and the other was quiet—were selected as his partners. An alternating treatment design was used to determine the differences in the degree and type of social interaction occurring between the target child and his partners. Throughout
the investigation, the target subject was observed in two daily free-play
sessions, one in which he was paired with a socially outgoing nondisabled
peer, and the other with a quiet nondisabled child. The withdrawn child was
found to initiate fewer social interactions when placed with the quiet peer
than the socially outgoing peer in a free-play setting.

The placement of younger and socially outgoing partners increased the
social interactions of preschool children with social skills deficits. Peer-
pairing or proximity intervention is similar to one type of environmental
structuring strategy mentioned previously (i.e., restructuring the social
contexts) by incorporating socially competent nondisabled children into the
group. Lamorey and Bricker (1993) suggest that children with disabilities who
are enrolled in integrated early childhood programs demonstrated higher
levels of social play and more appropriate social interactions and are more
likely to initiate interactions with peers than are children in self-contained
special education preschool classes.

McGee, Paradis, and Feldman (1993) further investigated the "free," or
unplanned benefits of full inclusion of children with autism. The study
explored whether differing levels of autistic behavior were associated with
the presence of typical children or with the presence of other children with
autism. The data revealed that 22 of the 28 children with autism participating
showed the overall pattern of decreased autistic behavior in the presence of
typical children. The decreased levels of autistic behavior were found to
correspond with the proximity of typical peers.

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who are enrolled in integrated early childhood programs demonstrated
higher levels of social play and more appropriate social interactions and are
more likely to initiate interactions with peers than are children in self-contained special education preschool classes.

Another study by Wolfberg and Schuler (1993) utilized three integrated groups to promote peer play of three children with autism. Each group included two children with autism (enrolled in special day class) and three nondisabled peers (enrolled in general education classes) ranging in age from 6.11 to 8.5 years and mixed by gender. Integrated play groups were conducted for 30 minutes two times a week in a designated play area in the special classroom over a period of approximately 1 month. The study also incorporated the other important features of environmental structuring strategies such as the selection of play materials, well-designed play spaces, and a consistent schedule and routine. The results demonstrated decreases in isolate play and collateral gains in more social forms of play of children with autism.

**Peer-initiation** Peer-initiated strategies are the most frequently used peer-mediated intervention strategies. It is important to note that peer initiation intervention is different from the typical social exchanges between preschool children. First, it involves a nonreciprocal pattern in which a child is trained to carry a disproportionate share of responsibility for initiating social interaction with a withdrawn child (Strain, 1985). Second, the socially competent peers are instructed to initiate toward the target child. Such social initiations may include asking a child to play, giving a toy to a child, providing physical assistance or suggesting a play idea.

Specifically, a role-playing and rehearsal strategy was employed in peer-initiation training procedures. In addition to the role-playing and rehearsal strategy, peer intervention agents have often been motivated with various
types of reinforcers (e.g., stickers, stars, badges). Whenever necessary, the teacher may prompt both children to interact socially by modeling the behaviors or by verbal statements.

A landmark study that gave impetus to peer initiation research was conducted by Strain, Shores, and Timm (1977). In this study, six withdrawn preschool boys were selected as target children. There were four 20-minute sessions in this training. Two nondisabled boys, serving as confederates, were trained to initiate social interactions with the target children. In these sessions, the two boy trainers first learned a number of verbal and motoric behaviors to engage the target children in playing with them. For example, the child learned to initiate play by saying some phrases such as "come play". Then, the children were instructed to engage in these motor behaviors (e.g., roll a ball to the target child). Each session continued 30 discrete opportunities to practice appropriate initiations. The results showed that the increase in confederate social initiations immediately increased the frequency of the subjects' positive social behavior.

Two similar studies on the use of peer social initiations have been conducted with 10-12 year old autistic children. (Ragland, Kerr, & Strain, 1978; Strain, Kerr, & Ragland, 1979). Both studies indicated the results of an immediate increase in social interaction of the withdrawn children.

More recent research on peer-initiation has examined the effects of maintenance and generalization. The removal of the teacher's modeling and verbal prompting was found to bring about an abrupt reversal in the rates of peer interaction. In a study by Fox, Shores, Linderman, and Strain (1986), a systematic fading procedure was designed to maintain social initiations of withdrawn preschoolers with disabilities and nondisabled preschoolers. The
results indicated that a response-dependent fading tactic maintained the subjects' social initiations. In response-dependent fading, the teacher's prompting and praising were reduced gradually only if the withdrawn child continued to initiate at approximately the rate during his/her original intervention.

Odom and Watts (1991) designed a correspondence training/visual feedback (CTVF) intervention package to reduce or eliminate the verbal prompts that teachers provide to peers in peer-initiation interventions. Teachers first taught peers social initiation strategies for promoting the social interactions of the children with autism. Teachers then provided verbal prompts when necessary to peers in structured play settings. In a second structured play setting, teachers did not provide prompts to peers. Initiations decreased in a second setting. In the third phase of the study, a correspondence training/visual feedback was introduced in the second setting and resulted in substantial increases in peer initiations. In the final phase of the study, the peer initiation intervention was discontinued and the CTVF package continued to support the peer's social initiations.

The research concerned with generalization effects of peer-initiation has utilized either a multiple exemplar strategy (Shores, 1987) or self-evaluation procedure to promote generalization of social interaction (Sainato & Goldstein, 1992). For example, Goldstein, Kaczmark, and Pennington (1992) investigated the effects of a peer-mediated intervention on the social interaction of five triads comprised of preschoolers with autism and their typical peers. The results revealed the improved rates of social interaction during play were clearly associated with peer intervention for 4 of the 5 children with autism. This intervention offers an alternative peer-
intervention package for increasing interaction between children with and without disabilities.

Sainato and Goldstein's (1992) study was to determine if peer confederates' self-evaluation increased their use of facilitative strategies without high rates of teacher prompting. The results indicated that peers who were taught self-evaluation increased their use of initiation strategies toward peers. Generalization peers demonstrated little change in their social behavior. Self-evaluation procedures enhanced the use of social interaction strategies on the part of normally developing peers during social skills interventions.

**Group contingency.** Group Contingency, refers to the application of consequences for the group behavior management of children. Those procedures take advantage of "peer influence" by involving more than one student in the contingency management program. In these procedures, children are reinforced for a level of group performance rather than individual performance. Children in groups provide one another natural prompting and consequences when working for a common goal or reward (Greenwood & Hops, 1981).

Walker and Hops (1973) increased the social interactions of withdrawn children by reinforcing the withdrawn children and their classmates for the initiation of social exchanges. Hops, Walker, Greenwood (1979) further compared the individual contingencies with the group contingencies shared by the entire class. Observation data showed that the group contingencies were clearly more powerful. Another study (Greenwood & Hops, 1981) also indicated that group-oriented strategy produced more cooperative behavior in children and increased children's liking of each other.
LeFebvre and Strain (1989) used a group-oriented reinforcement contingency to increase children's positive social exchanges. Preschoolers with autism and their socially competent peers earned rewards for their entire class by exchanging positive social behaviors during daily play sessions. Kohler, Strain, Maretsky, & DeCesare (1990), as cited in Kohler, Strain, Hoyson, Davis, Donina, and Rapp (1995), compared the effects of an individual versus group contingency on the social and supportive exchanges between three preschoolers with autism and their peers. Although both procedures increased social interactions, typical children used few supportive comments in the group contingency condition until they received direct teaching.

Kohler et al. (1995) conducted a study to reexamine the effects of a group contingency on the social interactions of three preschoolers with autism and their peers. Three preschoolers with autism and six of their typical classmates ranging from 3 years, 4 months to 5 years, 2 months participated in the study. The results indicated that a comprehensive intervention package consisting of social skills training, teacher prompting, and group-oriented reinforcement increased the interactions between typical preschoolers and their classmates with autism.

Group contingency systems as well as other peer tutoring/cooperative learning strategies have become increasing popular as an additional or alternative method to traditional instruction to increase children's opportunity to respond, practice time for target skills, and cooperation and social skills use among peers.

Several advantages of group-oriented reinforcement have been mentioned by researchers. First, group-oriented procedures enable teachers to
more efficiently instruct and manage the behaviors of a large number of students. Second is the emergence of corollary or generalization supportive behaviors. Children participating these procedures exhibit prompts and encouragement, approval, assistance, and even tutoring to influence one another's performance (Kohler et al., 1995).

As Kohler et al. (1995) suggested, brief training followed by a group-oriented reinforcement contingency is a viable method of creating a supportive network that is both wide-spread and effective. Group contingencies alone, without incorporating into other strategies such as social skills training will not produce the reliable effects.

**Peer-tutoring/cooperative learning.** Peer tutoring involves students working together in tutor-learner pairs. Peer-tutoring employs three strategies such as environmental structuring (i.e., restructuring social context), peer-mediated teaching strategies and group-contingencies. Components of peer-tutoring include alternating tutor-learner roles, verbal and written practice of skills (e.g., reading aloud, writing spelling words, reciting math facts), praise and awarding of points for correct responses, and announcing winning teams. The strategy has been widely used to enhance learning in several curricula for variety students with mild handicaps.

Kamps, Barbetta, Leonard, and Delquadri (1994) investigated the use of classwide peer tutoring strategy on reading skills, and social interactions of three high-functioning elementary-aged students with autism and their typical peers in three integrated general education classrooms. Components of classwide peer tutoring strategy included 25 to 30 minute well-specified instruction in which peer tutor-tutee pairs worked together on reading of passages, feedback from peer tutors for oral reading, correction of errors, and
public posting. Immediately following reading instruction during baseline and tutoring sessions, students engaged in 15 to 20 minute of social time. The results indicted that classwide peer tutoring not only increased reading fluency and correct response to reading comprehension but also the total duration of free-time social interactions for students with autism and typical peers.

As with peer tutoring, cooperative learning can also be considered as the combination of three strategies: peer-mediated, environmental structuring strategies (i.e., restructuring social context), and group contingencies. Johnson and Johnson (1987) suggested a procedure for structuring cooperative learning. Three critical elements of cooperative learning included: (a) positive interdependence, (b) individual accountability, and (c) face to face small group interactions. Cooperative learning employs group-oriented reinforcement contingencies wherein a group member's reward is determined entirely or partly by the efforts of other individuals.

Dugan, Kamps, and Leonard (1995) measured the effects of using cooperative learning groups as an instructional format to include two high-functioning students with autism into a fourth-grade general education classroom for social studies. The intervention sessions consisted of an initial training on cooperative learning procedures, the use of the corresponding group social skills, and ongoing monitoring and reinforcement for implementing those procedures. The results indicted that both the target students and their peers demonstrated the improvement for academic outcomes and social interactions.

Peer-tutoring and cooperative learning have been widely used to address the academic and social needs of elementary-aged students with mild
handicaps. Very few studies have been conducted in preschool-aged students or with students with severe disabilities. The dearth of studies may be explained by the heavy reliance on verbal skills with these two strategies. Young children with disabilities may not be able to follow the instructions, or understand the individual accountability of being a group member. Thus, the feasibility of implementing this strategy in early childhood special education may be limited.

**Impact of peer-mediated procedures.** Peer-mediated procedures appear to be another robust technique in increasing social interactions of preschool children with disabilities. There are several advantages in administering peer-mediated procedures. First, peers are natural participants in interactions and thus could more directly serve as cue for the future interactions. Second, peer-mediated intervention provides children with disabilities more opportunities to observe more appropriate models for social behavior through peer contact, have access to responsive social partners, and engage in more normalized social experiences than would occur with autistic peers.

Peer-mediated intervention strategies have received some criticism. First, as with teacher-mediated intervention, few peer-mediated procedures have been successful in reducing or eliminating teacher supports (i.e., teacher prompts, teacher praise, or tangible reinforcers) for peer interactions. Although peers serve as the primary change agents in target children's social behavior, teacher will still need to monitor the effects of the intervention. For example, teachers need to provide prompts or reinforcement for nondisabled peers.

Second, access to children without disabilities as peers may remain a barrier in the implementation of peer-mediated procedures. In the Odom,
McConnell, and Chandler (1993) study, teachers reported they either did not have children without disabilities in their building, could not integrate them into their classroom. The problem with the access to the typical peers also reflects limitations in current peer-mediated literature. Most peer-mediated studied has been done in lab settings, not in public school settings. Also, very few studies have investigated if peers with mild disabilities can serve as social partners in some early childhood special education class. Only one study by Young and Kerr (1979) taught a youngster with mild mental disability to prompt and reinforce social interaction with two of his school-age peers with severe retardation. Increases in positive social interaction were obtained from use of these procedures.

Third, although peer-mediated procedures are effective in increasing social interactions, the procedures may result in unequal rates of social initiations and unequal status among participants. Caution is needed in terms of peer biased attitudes (i.e., hierarchical vs. equalitarian) toward children with disabilities. In other words, peers will more likely to be "teachers" rather than "friends" with children with disabilities.

Finally, teaching only nondisabled peers is insufficient for substantial change to occur. To help maintain social exchanges it may be beneficial to teach children with disabilities to initiate play interactions. Several recent studies have involved both target children and peers in the same training sessions, which essentially result in a combination of teacher and peer-mediated approaches to social skills training. More details in this combination approach will be discussed in the section on the direct teaching of social skills to children with disabilities.
Strategies for Directly Teaching Social Skills

Teaching social skills directly in didactic or instructional groups is also considered a type of teacher-mediated procedure. However, teacher-mediated social skills training here mainly employs social learning approaches such as film-modeling, peer-modeling, and direct instruction/coaching. The adaptation of social learning approaches particularly for children with severe disabilities (i.e., autism) is conducted within this review. Also discussed are the current multi-component preschool social skills curricula, specifically, the Integrated Preschool Curriculum (Odom, Bender, Stein, Doran, Houden, McInnes, & Gilbert, DeKlyen, Speltz, & Jenkins, 1989) and Taking Part (Cartledge & Kleefeld, 1991).

Social Learning Approaches

Filmed modeling. Most modeling studies of children with disabilities have involved filmed-mediated procedures. A pioneering study (O’Conner, 1969) stimulated a lot of interest in the use of modeling procedures. This study has been replicated by other researchers (Keller & Carlson, 1974; Jakibchuk & Smeriglio, 1976) and results of these studies have substantiated previous findings (i.e., O’Connor, 1969) that symbolic modeling is an efficacious procedure for increasing the social interaction of withdrawn children with their peers.

In O’Connor’s study (1969), 13 preschool children were selected as targets by teacher’s ratings and observations. O’Connor exposed 6 preschool isolates (4 girls, 2 boys) to a 23-minute film. The film depicted 11 episodes in which a child actor entered a group activity and was positively received by the other children. The other 7 socially isolated children were assigned to an irrelevant film model about dolphins. The results showed that those who
viewed the modeling film increased their levels of social interaction with peers while another group of children who watched a film of dolphins showed no such behavior change.

O'Connor (1972) replicated his original study and further investigated the effects of modeling, shaping, and modeling plus shaping. The results showed that all of the treatment conditions produced an increase in social interactions compared with the control group. However, shaping produced a slower change. Furthermore, the follow-up revealed that modeling produced more durable effects than shaping or modeling plus shaping procedures.

Keller and Carlson (1974) created their own set of videotapes. The videotapes described four specific social skills: (a) initiation, (b) smiling and laughing, (c) token giving, and (d) physical contact. Increases in social interaction levels were found after viewing the modeling film. This study demonstrated that filmed modeling procedures could also be used to teach specific social skills to withdrawn children. In addition to the typical procedures by O'Connor (1969, 1972) and by Keller and Carlson (1974), Jakibchuk and Smeriglio (1976) investigated the effect of self-speech on the efficacy of the modeling procedure. The results showed that videotapes with a narrative sound track describing the same set of social skills produced minimal results. The soundtrack with a self-speech condition produced more powerful effects.

**Live peer-modeling.** Live peer models also have been found to have a positive impact on withdrawn children. Apolloni and Cooke (1977) conducted a series of studies to investigate the effects of live peer modeling.

In their initial study (Apolloni, Cooke & Cooke, 1977), three children with mental retardation and withdrawn behavior were selected as target
subjects. The live modeling procedure differed from the filmed model strategy in one important way. Adult-mediated prompting and reinforcement are integrated in these procedures. Adult behaviors in the process involved (a) pointing-out appropriate behavior, and (b) verbally and physically prompting the child to imitate desired behaviors. Results indicated that target children increased greatly in their appropriate behaviors during imitation training sessions. The other study by Apolloni, Cooke, and Cooke (1977) also demonstrated that peer-modeling can facilitate the performance of appropriate behaviors.

Coaching. In the coaching procedure, a target child was typically removed from the classroom and taken to an experimental room. There he was provided with direct instruction in a general concept or strategy, either orally or in writing, by an adult instructor.

One of most cited studies in this area was conducted by Oden and Asher (1977). Oden and Asher (1977) selected four categories of social skills that related to social acceptance: (a) participation (b) cooperation (c) communication (d) validation/support. They assigned 33 third and fourth grade low-acceptance children to either a peer-pairing, parallel play, or a coaching intervention. The coaching condition consisted of instructions in social skills, playing games with a peer, and a post-play review session. In the coaching condition, the children were taught to successfully initiate, maintain, and terminate interactions. In the peer pairing condition, the children were simply allowed to play the same games with peers but receive neither instructions nor review. In the control condition (parallel play), the children engaged in solitary play without interaction, instruction or review. The results indicated that the coaching group increased on a play sociometric
rating significantly more than the peer-pairing group and the control group. The coached children increased the friendship nominations on a post-sociometric rating.

LaGreca and Santogrossi (1980) used coaching, modeling, and behavioral rehearsal techniques in a 4-week social skills training program. The following target behaviors were selected for training: (a) smiling/greeting, (b) joining/inviting, (c) conversing, (d) sharing/cooperating (e) complimenting, and (f) grooming. Thirty third, fourth, and fifth graders with low peer acceptance were randomly assigned to a social skill training group, an attention placebo group, or a waiting-list control group. In the social skill training group, the main treatment procedures were modeling, coaching, and behavioral rehearsal with videotaped feedback. In the attention-placebo group, training procedures were identical to those described in the social skills training group, however, the children received no instructions or any discussion on social skills. No training was provided in waiting-list control group. The results indicated that when compared with the attention placebo or waiting list control group, the skills-training group showed increase in skill knowledge, performance in the role-play situation, and the rates of initiations to peers. Coaching proved to be an effective technique in teaching social behaviors.

Ladd (1981) assigned 36 (18 girls, 18 boys) third-grade children who were low on peer acceptance to social skills training, attention control, or nontreatment control group. Instructions, rehearsal, and feedback were used in the training of three verbal skills. Those verbal skills selected included asking question, leading, and giving support to peers. Children in the training condition were coached in these verbal skills. The results clearly
demonstrated that trained children significantly increased in 2 of the 3 trained skills at post-test and follow-up. Trained children in this study also evidenced significant and lasting increases in classroom peer acceptance.

Star (1986) compared two coaching programs. One is combined with peer-modeling and behavioral rehearsal. The other is in the coaching /discussion condition. The result showed that children in the coaching condition that included peer modeling and behavior rehearsal achieved higher scores on the Role Play Test than children in coaching/discussion condition.

Hodgens and McCoy (1990) adapted a coaching approach originally developed for older children by Ladd (1981) and Ogden and Asher (1977) to improve the social behaviors of preschool children who were experiencing peer relationship difficulties. This procedure included direct instruction and modeling of three skills in a small group setting containing peers and target children. The target children acquired all three skills and used them in generalization settings and with generalization peers at the end of the study.

Hendrickson, Gardner, and Kaiser (1993) investigated whether a structured coaching strategy, previously used in preservice and inservice training of teachers of school-aged children could be adapted for day-care-in-service training to facilitate social interaction among young children with and without disabilities. Three female day-care providers served as target teachers. The target teachers were selected based on the recommendation of the administrative staff. One child with severe social skill deficits was linked to each teacher for evaluation purposes. A 15-25 minute coaching session preceded classroom observations made during the intervention condition for all teachers. Coaching sessions were conducted in any available quiet area of
the day-care center not being used for children. An eight-segment coaching process was used by the primary coach to review and rehearse with each teacher. The coach recorded each step in the coaching process on the coaching protocol. At the end of each coaching session, the original protocol was kept as a permanent product and a copy was given to the target teacher. The results demonstrated not only substantial increases in the adult delivery of behavioral support of social interaction during group activities with 2 and 4 year old children but also marked collateral increases in positive interactions of children with severe social skill deficits.

A cognitive-social learning approach (CSL) by Mize (1995) was designed for use in a typical nursery school, day care, and kindergarten classrooms. Its goal is similar to those of social skills coaching programs. In addition, like other social skills coaching curricula instruction, rehearsal and feedback were used in CSL. Three specific goals in CSL were: (a) help children learn social concepts, (b) encourage performance, and (c) monitor and evaluate interactions.

The program differs from traditional social skills coaching programs in two distinct ways: the specific social skills taught and the instructional techniques used. Four specific social skills are targeted in CSL program. These four skills are: (a) prosocial leading, (b) asking questions, (c) commenting, and (d) offering support. The instructional techniques employed in the CSL program are primarily modeling and role-playing as opposed to heavy reliance on verbal instruction and discussion common in older children's program.

The CSL curriculum was further evaluated by a sample of 123 preschool children in six classrooms. Twenty-nine preschool children, who
were aggressive or infrequently used targeted social skills during peer interaction were identified as the participants in the study. Participants were randomly assigned into either a skills-training condition or to an attention-control condition. Participants in the skill training condition received instruction in social skills, whereas children in the control condition focused on the nonsocial aspect of play, such as how to make constructions from Lego. Children in both the training and control condition participated in pairs for eight half-hour sessions over a period of about two months.

Sociometric interviews, direct observations of children's use of target social skills with peers in their classrooms, and interviews to assess their knowledge of social concepts were conducted to evaluate the effectiveness of the CSL approach to skill training. Direct observation of children's use of target social skills in the classroom demonstrated that children in the skill training condition increased the frequency (i.e., doubled) their use of target social skills, however, children in the control condition showed a slight decrease in their use of social skills from pretest to posttest.

Positive changes were also found from pretest to posttest in the other two measures: social knowledge and peer group acceptance. The results of this evaluation indicated that the CSL approach improved the social knowledge, social interaction skills, and peer relationships of low-status, low-skilled preschool children.

Impact of social learning approach. The social learning approach has been used widely and successful in improving children's peer-related behavior and the acceptance of low-status, low-skilled preschool children. Particularly coaching programs (e.g., CSL), which involve techniques such as discussion, rehearsal, and feedback from the instructor has been proposed as
the most appropriate as a regular part of the preschool curricula for all children (Cartledge & Milburn, 1995).

Unfortunately, children with severe disabilities may not benefit from instruction that only employs a social learning approach alone. For example, children with autism do not typically imitate their normal peers. Thus, more powerful techniques such as teacher-mediated, or peer-mediated operant contingencies need to be incorporated in the use of social skills training for children with severe disabilities.

Adaptation of Social Learning Approaches for Severely Handicapped Children.

Carr and Darcy (1990) conducted a study to identify variables that facilitate the acquisition of peer imitation and promote setting generality of imitative skills once they have been acquired. Four preschool children with severe disabilities (i.e., autism) participated in Follow-the Leader activity by observing the behavior of a normal peer model who systematically demonstrated the behavioral components making up the activity. If necessary, the normal peer physically prompted a variety of actions and object manipulations that defined the activity. The results showed that all four children generalized their imitative skill to a new setting involving new actions and object manipulations. A critical element in developing competence in imitation in children with severe disabilities centers on the involvement of multiple responses and multiple objects during training is also suggested.

Kamps, Leonard, Vernon, Dugan, and Delquadri (1992) examined the effects of social skills training groups on the social interactions of four high-functioning children with autism and their nondisabled peers in an
integrated first-grade classroom. Four play groups were formed by the entire class. Each play group consisted of one target student and three nondisabled peers. Social skills training was implemented using portions of published curricula (McGinnis & Goldstein, 1984). Selected specific social skills included: (a) initiating an interaction, responding to initiation, and keeping an interaction going; (b) conversations, greetings, and topics; (c) giving and accepting compliments; (d) turn-taking and sharing; (e) helping others and asking for help; (f) including others in activities. Training occurred during the first 10 minute of 20 minute play groups, four times a week. Social skills training lasted for two to three weeks per skill. The results showed increases in the frequency of, time engaged in, and duration of social interactions, as well as the responsivity of students and peers to each other. The gains were also maintained when students were monitored and given feedback on social performance in play groups and during follow-up.

Other studies such as Middleton and Cartledge (1995), and Pierce and Schreibman (1995), mentioned previously, all employed the social learning approaches, instructor-mediated contingency system (i.e., stickers), and involved socially competent children and even parents in the training sessions to improve the social behaviors of children with severe behavioral handicaps.

Another related approach was designed to directly teach appropriate social behavior to children with severe disabilities. For example, in the case of children with autism, there is increasing evidence that the acquisition of social interaction skills may favorably affect inappropriate or socially unacceptable behaviors. That is, by directly teaching appropriate social skills
to children with autism may decrease their stereotypic, socially inappropriate behavior (Koegel, Koegel, Hurley, & Frea, 1992).

Haring and Lovinger (1989) taught preschool children with autism to initiate play with their peers and to go on to another child when an initiation was not successful. The teacher task analyzed play initiations for three activities (i.e., cars, trains, and blocks) and then used prompts assumed to be less intrusive (e.g., pointing) to teach initiations. In free play settings, peers were coached to respond to the children with target children. Target children increased their social interactions in freeplay settings without teacher prompts or reinforcement.

Krantz and McClannahan (1993) examined the effects of a new procedure script-fading on the social initiations of children with autism. The scripts identified recently completed, present, and future activities as topics for discussion. The scripts consisted of 10 statements and questions. Manual prompts were used by the teachers to help four target children to perform the target behavior. For example, manually guided to pick up a pencil, point to an instruction or a scripted statement or question, and move the pencil along below the text. After children were observed to dependably use the script, manual prompts were faded from end to beginning in five fading steps. The results demonstrated that the script-fading procedure enabled children with autism to direct verbal initiations to peers that were not prompted by adults or peer confederates.

Implications for Social Skills Training in Severely Handicapped Children.

Odom and Brown (1994) noted two factors may account for limitations in social skills training for severely handicapped children.

"First, social skills lessons tend to be quite verbal, and some young children with social competence deficits may not have the verbal skills
to take advantage of the lessons. Second, for preschoolers with disabilities, their behavior may not yet have come under sufficient verbal control (i.e., they may be able to describe the skills presented in the lessons, but not use the skills in interactions with their peers in nontraining settings)." (p. 46-47)

The modification of some social skills training to adjust for children's developmental level is needed. Although only a few studies have investigated the combination of peer and teacher-mediated social skills interventions, the results to date appear promising. A possible advantage of such an intervention is that training involves both children with disabilities and their typical peers at the same time, and the emphasis on supporting the skills is directed to both children. The potential may be greater for creating a more co-equal status among participants and for achieving generalization (Odom & Brown, 1994).

Another important implication revealed by some studies showed that the improvements in social skills associated with concomitant reductions in disruptive behavior without the need for intervention. Just as Elliott and Ershler (1990) mentioned previously "social skills curricula should emphasize positive, nonaversive methods. Inappropriate behaviors can often be addressed by targeting incompatible, prosocial skills" (p. 53). Future training of children with disabilities should focus on improving appropriate social skills rather than reducing inappropriate behavior.

Social Skills Curricula

Two social skills curricula which employ various teaching techniques, stress progression through a hierarchy of skills and incorporate both assessment and program planning are presented here.

Integrated preschool curriculum (IPC). The Integrated Preschool Curriculum (IPC) was developed by Odom et al. (1982) to promote the social
integration of young children with disabilities in integrated classrooms. The IPC is a comprehensive classroom manual for preschool teachers to promote social interactions among preschool children with and without disabilities. The IPC provides a variety of intervention strategies from structured play activities to teacher-directed social skills instructions. Three major components are listed in IPC: Integrative Activities, Assessment, and Direct Instruction of Social Skills (DISS).

The Integrative Activities components provide instructions for establishing social integration groups, as well as 48 structured play activities to teach play and social skills and to promote social integration. The IPC includes two assessment procedures for teacher use in assessing social interaction and screening for children with social skill deficits. The Social Interaction Scan (SIS), to be described later, is an observational procedure for measuring social behavior during the Integrative Activities. The Social Interaction Rating Scale (SIRS) is a teacher rating measure of social behavior. The teacher rates each child's behavior along a five-point continuum in response to four positive and four negative statements.

Direct Instruction of Social Skills (DISS) is a set of direct intervention strategies to promote social interaction. Two types of procedures may be employed. Initiating procedures teach the target child specific group entry skills. These skills allow the child to begin playing when he/she is not included in a play activity. Responding strategies consists of peer-mediated training sessions in which a peer confederate is trained to respond in a positive, socially appropriate manner.

The first of several observational evaluations of IPC was conducted in four integrated and two nonintegrated special education classes (Odom &
Integrative activities were implemented for 30 minutes daily in two integrated and one nonintegrated classes. The other three comparable classes served as a contrast classes. In the contrast classes, children participated for a 30 minute period in a child-directed play based upon an established early childhood curricular model (Hohmann, Banet, & Weikart, 1979). The results indicated that IPC effectively increased the total amount of social interaction and proximity play relative to a standard early childhood education model. Children with disabilities or without disabilities in the IPC classes were found to exhibit significantly greater proportions of interactive and proximity play than those in the contrast classes.

Overall, the IPC curriculum is easy to read and follow. Most preschool teachers can benefit from this curriculum because it allows flexibility for teachers to choose the intervention strategies depending upon the child’s disabled condition. However, the assessment tools do not provide teachers enough assessment information in addressing specific social skill deficits in each individual child. Also, the teaching sessions listed in this part are not complete. For example, in responding strategies, it only deals with sharing behaviors. Further, the social skills curriculum fails to address the issue of maintenance and generalization.

*Taking part curriculum.* Taking Part: Introducing Social Skills to Children was designed for young children, preschool through grade three (Cartledge & Kleefeld, 1991). The curriculum employs effective teaching techniques such as coaching, modeling, role-playing, and corrective feedback. The goal of the curriculum is to provide teachers, clinicians, and other professionals with specific strategies for social skills instruction.
The Taking Part curriculum includes a manual with scripted lessons, paper animal puppets, stickers, and sample parent letters. A specific sequence of activities are presented that begin with a scripted story using puppets to illustrate a social skill, followed by activities for practice, and maintenance.

As McAllister (1991) mentioned the Taking Part curriculum establishes a "direct synchrony between assessment and intervention" (p. 51). Taking Part curriculum has been validated as appropriate for teaching social skills to young children (Middleton, 1994); it presents lessons in a sequence but provides an option for the instructor to select lessons which address specific social behaviors; it is activity based for high interest which helps students understand the importance of the social skills being taught; and it can easily be adapted to classroom situations involving one-on-one instruction or small groups.

The Taking Part curriculum uses mainly a direct instruction or skills training model. Direct instruction, variously termed coaching, or skills training models (Cartledge & Milburn, 1995), was used extensively in the social skills training studies. Direct instruction involves several important components such as coaching, behavioral rehearsal, and corrective feedback. The combined effects of modeling, behavioral rehearsal, coaching, and reinforcement techniques appear to be more effective than any strategy used alone.

Recent studies (e.g., Middleton, 1994; Middleton & Cartledge, 1995) also indicated that Taking Part curriculum can be adapted for classroom use. The curriculum was found to be effective in decreasing aggressive behaviors of four elementary-aged African American males. More research is still needed to determine the effectiveness of this curriculum package on the various
populations of children with special needs. Considering the heavy emphasis on cognitive and language skills, it is particularly important to validate its usefulness with young children with disabilities.

Summary

Early childhood special educators have developed a base of instructional strategies for increasing the social interactions of preschool children with disabilities. The literature on social interaction interventions for preschool children with disabilities offers increasingly effective and efficient approaches for promoting a wide variety of children's social behaviors.

There are some general trends indicated in social interaction research. First, these studies are being conducted increasingly in naturalistic settings. Research conducted in contrived settings typically do not show good generalization and maintenance effects. Second, teacher-administered consequences for the peers (i.e., tangible reinforcers), as well as teacher prompts need to be faded or withdrawn. Third, social skills curricula should emphasize positive, nonaversive methods. Inappropriate behaviors can often be addressed by targeting incompatible prosocial skills. Fourth, social skills training needs to involve both children with disabilities and their typically developing peers to establish more equal status among participants. Finally, the utility of instructional, teacher-mediated, peer-mediated and social learning procedures is needed in order to produce more reliable effects than any single procedure. Each type of procedure has its own strengths and limitations. Thus, educators who serve young children with disabilities need to continually search for ways to expand their repertoire of instructional
techniques in the remediation of social skill deficits of children with
disabilities.

Limitations of the Literature

Researchers have devoted substantial attention and resources to the
development of social skills interventions for preschool children with
disabilities in the past decade. To summarize, results reported in most of the
literature on social interaction skills for preschool children with disabilities
have been limited to the following: (a) acceptability and feasibility, (b)
integrated setting (i.e., the context of the classroom), (c) peer-initiation using
children with developmental delays as peer tutors, and (d) a curriculum-
based approach which utilizes a coaching program with other teacher and
peer-mediated procedures in the natural settings (i.e., classrooms).

Acceptability and Feasibility

As Peterson and McConnell (1993) mentioned "there is little evidence
that the tremendous knowledge gained over 20 years of research on social
skills intervention is shaping the types of interventions that preschool
children with disabilities currently receive as part of their special education
programs" (p.39). Most literature on social interactions of preschool children
with disabilities, however, has been limited to the acceptability and feasibility
of classroom-based social interaction interventions.

Witt and Elliot (1985) remind us, an intervention that is not used,
regardless of its potential effectiveness, is no intervention at all. Although
the fields of early childhood special education now continue to expand and
explore more dynamic ways of teaching young children with disabilities, to
date, it would appear that the bulk of systematic research and development
activity in social interaction skills interventions has been devoted to the
variables that affect an intervention’s effectiveness in terms of student outcomes, with relatively less attention given to factors that enhance acceptability and the utility of an intervention. More specific attention to systematic efforts that will translate research into practice is required.

Odom et al. (1993) found that 98 percent of early childhood special education teachers indicated there was a need for curriculum materials and information in designing a social skills training program for the children in their classroom. Most current early childhood special education curriculum include some social skills items; however, they are often subsumed by sections on adaptive skills. Social skills have always been viewed as secondary to skills in other domains and have been relatively neglected in some curricula (McAllister, 1991).

As Wolery (1991) aptly noted, intervention tactics must be judged both by the outcomes produced and by the relative ease and efficiency of achieving the same. For those procedures to be successfully implemented in the classroom, they must be easily incorporated into classroom routines. These guidelines have directed an increased focus on less intrusive, less costly procedures and those that improve the academic and social skills of all students involved. Very few research studies, however, have been able to determine the feasibility of these intervention strategies.

Integrated Settings

As Strain and Fox (1981) noted, "however, most research on improving young children’s social behavior has been conducted in contrived instructional settings by teachers who were well-trained in behavioral procedures and were working with a single child and only one or two peers. Unfortunately, most of the results have not produced significant effects in
noninstructional settings" (p.420). Guralnick (1989) argued that a critical challenge of early childhood educators and special educators is the refinement of interventions that improve the peer interactions of young children who are delayed in their social development, particularly in an naturalistic settings such as classrooms, play grounds, and homes. The problems in generalization that have been reported in much of the research reflects the needs for more studies to be done in the integrated setting.

**Utilizing Developmentally Delayed Children as Social Skills Change Agents.**

Peer-mediated instructional arrangements (e.g., tutoring and cooperative learning) are recommended as an additional or alternative method to traditional instruction to increase students' opportunity to respond, practice time for target skills, and cooperation and social skills use among peers. Pairing of high- and low status children provides a good model of social skills use for the skill deficit child and the skilled child can sometimes help the less-skilled make the transition to larger group context (Mize, 1995). Through such peer contact, children with severe disabilities may observe more appropriate models for social behavior than would be provided by their competent peers and could engage in more normalized social experiences.

Most studies in peer-mediated literature have used children without disabilities as the change agents. In Odom et al. (1993) study, many early childhood special educators reported that they do not have children without disabilities in their programs. The barrier of implementing peer-mediated procedures is related to the issues of the access of children without disabilities. Research, however, has not been able to utilize children with mild disabilities as behavior change agents.
Curriculum-Based Approach

Several researchers (e.g., Cartledge & Milburn, 1995; Elliot & Ershler, 1990) have indicated that teaching children social skills involves many of the same methods as teaching academic concepts. Social skills can indeed be taught directly, as done in all other areas of the curriculum. The resources for classroom teachers use should be devoted to its instruction, just as resources are devoted to teaching fine motor, language, or preacademic skills. Very few studies has been done, however, on the curriculum-based social skills program for children with disabilities. Perhaps as Mize (1995) suggest, the most salient modification is that "instruction needs to be based primarily on modeling and role-playing (often with puppets) as opposed to heavy reliance on verbal instruction and discussion common in older children" (p. 248).

Based on these limitations noted in the research literature, this study differs from the previous study in several important ways. First, a curriculum-based teaching approach, Taking Part, was used as the framework for social skills intervention with preschool children with disabilities. Second, peers with mild disabilities were used as the behavior change agents. Finally, the study was conducted in the natural context (i.e., embedded in the classroom activities) and involved both peer tutors and tutees in the training. Although one or more of these components may be found in the existing research literature, this study is unique in the combined application of these elements.
CHAPTER 3

METHODS

This chapter describes the participants, setting, materials, experimenter and observers, procedures, and experimental design used in the study. The definition and measurement of dependent variables are discussed as well.

Participants

A total of twelve preschoolers between the ages of three years and eight months and six years and two months and enrolled in special needs preschool program in an urban public elementary school, were assessed to determine eligibility for this study. The initial subject selection assessment measures included: (a) teacher and parent social skills questionnaires, (b) direct observation of the child's social behavior during non-teacher directed activities, and (c) parental permission to participate.

Social skills rating questionnaires. The Social Skills Rating System (SSRS) developed by Gresham and Elliot (1990), was used in this study to assess children's social skill levels. Both teachers and parents were asked to complete the respective forms of the SSRS questionnaire. The SSRS is standardized and reports subscale reliability coefficients for preschool teacher's form and parent's form ranging from 0.74 to 0.94 and 0.57 to 0.90 respectively. Prior to completing the rating questionnaire, the teacher was asked to observe the students informally for one week completing the scales.
The SSRS-Teacher is a 40-item rating system composed of two subtests consisting of: (a) social skills with the categories of cooperation, assertion, self-control, and (b) problem behaviors, labeled as externalizing, externalizing, and hyperactive behaviors (See Teacher Form in Appendix J). The SSRS-Parent is comprised of 49 items, of which 39 concern social skills and 10 concern problem behaviors (See Parent Form in Appendix J).

Percentile ranks range from 1 to 99. A percentile rank of 50 represents the median ratings of students in the standardization sample. A percentile rank indicates the percentage of students in the standardization comparison group who scored at a specific score. For example, a student with a standard score of 115 has a percentile rank of 84, which means 84 percent of the students of the same sex and educational level in the standardization sample exhibited fewer social skills than the student being assessed. Table 2 and Table 3 present the social skills and problem behavior raw scores and percentiles each child on both the SSRS-T and SSRS-P. The scores in these tables are ranked from highest to lowest according to raw scores in their social skill ratings.

The five children, receiving the highest teacher social skills ratings were screened (i.e., from Teresa to Tom) as potential peer tutors, and the five with the lowest ratings (i.e., from Danny to Will) were potential tutees. These ten children were further assessed by a two-week direct observation of their social behavior during 48-minute non-teacher directed activities (See Table 4).

Peer tutors. Kati was eliminated as the peer tutor due to extreme noncompliant behaviors during the two-week direct observations. Four peer tutors were then finalized. They were Teresa, Steve, Laura, and Tom. Steve
and Tom were in the morning group, and Teresa and Laura were in the afternoon group.

<table>
<thead>
<tr>
<th>Student's Name (Sex)</th>
<th>Social Skills (Raw Scores)</th>
<th>Social Skills (Percentile R.)</th>
<th>Problem Beh. (Raw Scores)</th>
<th>Problem Beh. (Percentile R.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teresa (F)</td>
<td>42</td>
<td>42</td>
<td>0</td>
<td>&lt;16</td>
</tr>
<tr>
<td>Kati (F)</td>
<td>38</td>
<td>27</td>
<td>7</td>
<td>82</td>
</tr>
<tr>
<td>Steve (M)</td>
<td>37</td>
<td>55</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Laura (F)</td>
<td>37</td>
<td>25</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Tom (M)</td>
<td>26</td>
<td>21</td>
<td>4</td>
<td>39</td>
</tr>
<tr>
<td>Cathy (F)</td>
<td>25</td>
<td>6</td>
<td>6</td>
<td>77</td>
</tr>
<tr>
<td>Jennifer (F)</td>
<td>25</td>
<td>6</td>
<td>3</td>
<td>47</td>
</tr>
<tr>
<td>Danny (M)</td>
<td>18</td>
<td>5</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>Chase (M)</td>
<td>17</td>
<td>4</td>
<td>7</td>
<td>68</td>
</tr>
<tr>
<td>Matthew (M)</td>
<td>15</td>
<td>2</td>
<td>10</td>
<td>84</td>
</tr>
<tr>
<td>Cliff (M)</td>
<td>13</td>
<td>2</td>
<td>10</td>
<td>84</td>
</tr>
<tr>
<td>Will (M)</td>
<td>7</td>
<td>2</td>
<td>6</td>
<td>61</td>
</tr>
</tbody>
</table>

Table 2: Raw Scores and Percentiles in Social Skills and Problem Behaviors on the Social Skills Rating System-Teacher

**Tutees.** Three out of five potential tutees (i.e., Chase, Cliff, & Matthew) were selected based on the two-week direct observations. None of these three boys displayed positive peer interaction rates for at least 10 percent
of the intervals observed. For the most part, these rates were near zero. Table 4 presents the results of two week prebaseline direct observation data. The interobserver agreement in these two-week prebaseline data was from 87.5 to 93.5 (i.e., 3 sessions) with a mean of 89.

<table>
<thead>
<tr>
<th>Student's Name (Sex)</th>
<th>Social Skills (Raw Scores)</th>
<th>Social Skills (Percentile R.)</th>
<th>Problem Beh. (Raw Scores)</th>
<th>Problem Beh. (Percentile R.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teresa (F)</td>
<td>59</td>
<td>68</td>
<td>6</td>
<td>55</td>
</tr>
<tr>
<td>Kati (F)</td>
<td>38</td>
<td>8</td>
<td>7</td>
<td>66</td>
</tr>
<tr>
<td>Steve (M)</td>
<td>41</td>
<td>19</td>
<td>6</td>
<td>42</td>
</tr>
<tr>
<td>Laura (F)</td>
<td>23</td>
<td>&lt;2</td>
<td>6</td>
<td>55</td>
</tr>
<tr>
<td>Tom (M)</td>
<td>41</td>
<td>19</td>
<td>10</td>
<td>86</td>
</tr>
<tr>
<td>Cathy (F)</td>
<td>14</td>
<td>&lt;2</td>
<td>8</td>
<td>75</td>
</tr>
<tr>
<td>Jennifer (F)</td>
<td>37</td>
<td>7</td>
<td>14</td>
<td>&gt;98</td>
</tr>
<tr>
<td>Danny (M)</td>
<td>18</td>
<td>&lt;2</td>
<td>17</td>
<td>&gt;98</td>
</tr>
<tr>
<td>Chase (M)</td>
<td>30</td>
<td>3</td>
<td>12</td>
<td>96</td>
</tr>
<tr>
<td>Matthew (M)</td>
<td>38</td>
<td>13</td>
<td>8</td>
<td>68</td>
</tr>
<tr>
<td>Cliff (M)</td>
<td>24</td>
<td>&lt;2</td>
<td>8</td>
<td>68</td>
</tr>
<tr>
<td>Will (M)</td>
<td>7</td>
<td>&lt;2</td>
<td>9</td>
<td>79</td>
</tr>
</tbody>
</table>

Table 3: Raw Scores and Percentiles in Social Skills and Problem Behaviors on the Social Skills Rating System-Parent
In order to match peer tutors and tutees, two of tutees needed to be selected from the morning group and the other two from the afternoon group. The fourth tutee—David was selected although he was not among these five potential tutees. He entered the program after all the questionnaires had been completed. His referral history indicted that David had a definite diagnosis of autism. The two week direct observation also revealed typical solitary behavior during nonteacher directed activities (i.e., 0 percentage of intervals in positive peer interactions, See Table 4).

The rationale for pairing students also included the pattern of interactions that occurred during the two-week prebaseline informal observations during classroom activities. For example, Teresa and Cliff were paired because they tended to listen to the audiotaped stories at the same time during nonteacher directed activity. Similarly, Laura and Chase were paired as a result of their frequent chases of each other.

Parents of the selected students were contacted by letter to obtain written consent for their children to participate (See Appendix A). Table 5 provides a summary of the demographic information, assessment information, and medication of each participant.

Pair 1-Tom (tutor). Tom was a Caucasian male, aged six years and two months at the beginning of the study. Tom was selected as peer tutor of the first pair. He received a percentile rank of 21 in social skills and 39 in problem behaviors on teacher's rating. Parent’s rating showed 19th percentile in social skills and 86th in problem behaviors.
<table>
<thead>
<tr>
<th>Name</th>
<th>Number of Session Observed</th>
<th>Range of Percentage of Intervals</th>
<th>Mean Percentage of Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom</td>
<td>4</td>
<td>38-10</td>
<td>23</td>
</tr>
<tr>
<td>Teresa</td>
<td>4</td>
<td>13-28</td>
<td>20</td>
</tr>
<tr>
<td>Steve</td>
<td>3</td>
<td>4-38</td>
<td>18</td>
</tr>
<tr>
<td>Laura</td>
<td>4</td>
<td>10-16</td>
<td>13.5</td>
</tr>
<tr>
<td>Cathy</td>
<td>2</td>
<td>0-21</td>
<td>10.8</td>
</tr>
<tr>
<td>Jennifer</td>
<td>3</td>
<td>3-23</td>
<td>10</td>
</tr>
<tr>
<td>Danny</td>
<td>2</td>
<td>3-7</td>
<td>5</td>
</tr>
<tr>
<td>Matthew</td>
<td>4</td>
<td>0-8</td>
<td>3</td>
</tr>
<tr>
<td>Chase</td>
<td>4</td>
<td>0-6</td>
<td>4</td>
</tr>
<tr>
<td>Cliff</td>
<td>3</td>
<td>0-5</td>
<td>3</td>
</tr>
<tr>
<td>David</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Kati</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Will</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4: Two-Week Direct Observation Data on Each Student's Peer Interactions

The behavioral observations conducted prior to the study indicated that Tom initiated and responded positively with peers (i.e., 23 mean percentage of intervals in positive peer interactions, See Table 4). He also exhibited some nonverbal play behaviors such as pointing, tapping other's back, and imitating others. Verbal play initiations recorded by audiotapes.
<table>
<thead>
<tr>
<th>Child</th>
<th>Tom (Tutor)</th>
<th>Matthew (Tutee)</th>
<th>Teresa (Tutor)</th>
<th>Cliff (Tutee)</th>
<th>Steve (Tutor)</th>
<th>David (Tutee)</th>
<th>Laura (Tutor)</th>
<th>Chase (Tutee)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Caucasian American</td>
<td>African American</td>
<td>African American</td>
<td>Caucasian American</td>
<td>African American</td>
<td>African American</td>
<td>Caucasian American</td>
<td>African American</td>
</tr>
<tr>
<td>Age</td>
<td>6-2</td>
<td>4-11</td>
<td>4-10</td>
<td>4-7</td>
<td>5-1</td>
<td>4-0</td>
<td>3-10</td>
<td>5-8</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Language</td>
<td>Autism</td>
<td>Manual Dexterity</td>
<td>Develop-Delayed</td>
<td>Motor Planning</td>
<td>Autism</td>
<td>Develop-Delayed</td>
<td>Autism</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>42</td>
<td>2</td>
<td>55</td>
<td>Unknown</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>SSRS-T Social Skills (Percentiles)</td>
<td>39</td>
<td>84</td>
<td>&lt;16</td>
<td>21</td>
<td>Unknown</td>
<td>23</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>SSRS-P Social Skills (Percentiles)</td>
<td>19</td>
<td>13</td>
<td>68</td>
<td>&lt;2</td>
<td>19</td>
<td>Unknown</td>
<td>&lt;2</td>
</tr>
<tr>
<td></td>
<td>SSRS-P Problem Beh. (Percentiles)</td>
<td>86</td>
<td>68</td>
<td>55</td>
<td>68</td>
<td>42</td>
<td>Unknown</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>Direct Observation (Mean)</td>
<td>23%</td>
<td>3%</td>
<td>20%</td>
<td>3%</td>
<td>18%</td>
<td>0%</td>
<td>13.5%</td>
</tr>
</tbody>
</table>

Table 5: Child Information
during 10 minute nonteacher directed activities included "Look!", "Let's do this!", "Let's do it! OK!"

The referral history indicated that Tom was born six weeks prematurely. He was late in talking, beginning at two years of age. His classroom teacher reported that Tom was cooperative, played nicely with peers and used language to express his needs. She also noted that Tom had a mild to moderate articulation delay, did not yet recognize colors, or shapes, did not know many animals or many simple vocabulary words. At the beginning of the school year, the Preschool Language Scale test showed that Tom scored 50 on both expressive and receptive language scales. His score indicated that his speech and language development were more than three standard deviations below the norms. In spite of severe deficits in communication, Tom enjoyed fine motor activities, exploring with various art materials, and developed motor skills at a typical rate.

Pair 1-Matthew (tutee). Matthew was a four year, eleven month old African American male. He was chosen as one of the participants due to the prebaseline observation (i.e., mean percentage of intervals-4%), teacher social skill rating (i.e., 2 percentile rank), and the diagnosis of autism. He obtained a percentile rank of 2 in social skills and 84 in problem behaviors on teacher’s rating. He received a percentile rank of 38 in social skills, and 68 in problem behaviors on the parent’s rating. The behavioral observations conducted prior to the study showed that Matthew was able to use one to three word utterances such as "Hi! Jo-An!" "Basket, Please!" to communicate his needs. His language, however, was still mixed with echolalia such as "Danny! I will get the Dinosaur!" Matthew was excellent in rote memory. He was able to count to 130 and recall an entire story book (i.e., Big Green Monster). In
addition, he was able to identify the shapes and colors presented in the classroom.

The referral history reported that Matthew was the only child in a single-parent family. He received a overall score of 42 on The Childhood Autism Rating Scale (CARS) (Schopler, Reichler, & Renner, 1988). General impression score was 3.5 with elevated scores in relatedness to persons, imitation, responsiveness, object uses and virtually all other elements of the rating scale.

Pair 2-Teresa (tutor). Teresa was a four year and 10 month old African American female. She received a percentile rank of 42 in social skills and less than 16 percentile rank in problem behaviors on teacher's rating. Parent's rating was 59th percentile in social skills and 55th in problem behaviors. Behavioral observations indicated that Teresa displayed a high frequency of spontaneous social language such as "Hi! Ms Amy!", "Bye! Ms. Terry!", "I love you, Chu-Sui!.

The referral history reported that Teresa sustained traumatic brain injury when she was 18 months old. Social function and self-care were areas of relative strength. Scores in these areas were still below the mean but within the 2 standard deviations. The radial digital and princer grasp with left hand was demonstrated, however, right hand was not as skilled. Isolated movements were refining. Peabody Developmental Motor Scales Assessment was completed and she scored 2 standard deviations below the norms in the fine motor areas. Also, Teresa scored more than 2 standard deviation below norm for functional skills in mobility, as compared to age-matched peers.
Pair 2-Cliff (tutee). Cliff was a four year 7 month old Caucasian male. He received a percentile rank of 2 in social skills and 84 in problem behaviors on the teacher's rating. The parent's rating was less than the 2nd percentile in social skills and 68th in problem behaviors. Behavioral observations conducted prior to the study showed that Cliff was not destructive, and was somewhat compliant to directions. His language was totally unintelligible although he made almost constant babbling sounds, which often had inflections as though they were sentences. Only an one-word utterance "thank you" in circle activity was clearly heard during the two-week behavioral observations.

The referral history reported that Cliff was born six weeks prematurely. He was diagnosed as having a congenital heart murmur and he has two small holes in the ventricle part of his heart. Developmental milestones have been delayed. He walked at age two and one half years. He was not toilet trained. As measured by the Vineland Adaptive Behavior Scale, his adaptive behavior composite was more than 2 standard deviations below the norms, which indicated deficits in all areas of adaptive behavior. Also, the developmental profile assessment given at the beginning of the school year indicated Cliff was functioning equivalent to age 20 to 24 months in social, communication, academic, and intelligence areas.

Pair 3 -Steve (tutor). Steve was a 5 year, 1 month old African American male. He received a percentile rank of 55 in social skills and 21 in problem behaviors from the teacher's rating. The parent's rating placed him at the 19th percentile in social skills and the 42th in problem behaviors. The discrepancy between the teacher's and parent's rating did not rule out selecting him as a peer tutor since conducted observations indicated that he
had relatively high peer interaction rates and would serve well in this capacity. Behavioral observations conducted prior to the study showed that Steve's language expression was appropriate in form and content. Speech was intelligible, and appropriate in rate and volume. He also displayed a satisfactory appreciation of paralinguistic features such as gesture, intonation, and facial expression.

The referral history showed that Steve's medical history was significant for sickle cell disease, which was diagnosed at age 2 months and has since necessitated numerous inpatient admissions. On October 3, 1994, Steve sustained an anoxic brain injury secondary to sickle cell disease. A neuropsychological evaluation prior to discharge revealed below-average intellectual functioning, with better performance on verbal as opposed to nonverbal tasks. Deficits were also found in executive functions such as attention and abstract reasoning and in motor control.

**Pair 3-David (tutee).** David was a four year old African American male. Social skills ratings were absent because he entered the program after these questionnaires had been completed. Behavioral observations found that David tended to stay to himself during unstructured teacher activities. He also exhibited poor speech intelligibility in spontaneous communication. He could imitate sounds and used one to two word utterances to communicate his needs, however, most his speech was unintelligible.

The referral history indicated that David was diagnosed as autistic as well as hyperactive. Ritalin was being prescribed for attentional and behavioral difficulties. Additionally, David suffered from a mild hearing loss. His medical history included infrequent ear infections which were treated with antibiotics, difficulty in sleeping, and clipped frenulum (skin
under tongue). As measured on the Preschool-Language Scale at the beginning of the school year, David achieved a standard score of 57; the standard score range of normal development is 85-115. The results also indicated severe receptive and expressive language deficits.

**Pair 4-Laura (tutor).** Laura was a 3-year, 10-month-old Caucasian female. She received a percentile rank of 25 in social skills, and 23 in problem behaviors by the teacher's rating. The parent's rating was less than 2nd percentile in social skills, and 55th in problem behaviors. The great discrepancy between parent's and teacher's ratings and her maturity did cause some hesitation in selection at the beginning of the study. Behavioral observation, however, did show that Laura was cooperative and compliant, initiated activities, responded positively to the peers, and exhibited a variety of verbal play initiations such as "Come on! Cliff!" "Watch this!" during unstructured teacher-directed activities.

The referral history indicated that Laura was diagnosed as Asthma and Hyperactive Airway Disease. She had been hospitalized many times for pneumonia. Her foster parents reported that she had been referred as a "medically fragile" child by medical personnel. As measured by the Brigance Diagnostic Inventory of Early Development (Brigance, 1978), Laura scored 48 out of 100. The results indicated some delays in general development. The results of the Vineland Adaptive Behavior Scale also indicated that Laura had some delays in the areas of communication and socialization, below average skills in the motor area, and average skills in the daily living.

**Pair 4-Chase (tutee).** Chase was a five-year 8 month old Caucasian male. He obtained a percentile rank of 4 in social skills and 68 in problem behaviors by teacher's rating. The parent's rating was in 3rd percentile for
social skills and 96th in problem behaviors. Behavioral observations found that Chase was somewhat compliant with simple instructions and physical prompts, however, there was occasional self-stimulation, with tapping at his chin and arm flapping. No functional speech was obtained during non-teacher directed activities.

The referral history indicated that Chase had a history of significant prenatal difficulties and regression in speech at about age 2 years. His score on The Childhood Autism Rating Scale (CARS) (Schopler et al., 1988) was 30.5, indicating the borderline between the non-autistic and mildly autistic. His scores on Vineland Adaptive Behavior Scale also revealed that Chase's adaptive skills demonstrate a pattern of relative weakness in everyday social and communicative behavior as compared to motor and self-help activities.

Setting

This study was completed in a special needs preschool classroom within an urban public elementary school in Columbus, Ohio. All sessions, including social skills instructions and data collection were conducted in the same classroom.

All participants attended the program either in the morning or afternoon for 2 1/2 hour sessions. The daily schedules for the morning group (i.e., from 9:00 am-11:30 am) and afternoon group (i.e., from 1:00 pm to 3:30 pm) followed the same sequence from snack time, circle time, non-teacher directed work sessions, meal time, and gross-motor activities.

Pair 1-Tom & Matthew, and Pair 3-Steve & David were in the morning group. Pair 2-Teresa & Cliff, and Pair 4-Laura & Chase were in the afternoon group. The morning and afternoon groups each had a total of eight children in their classes. The classroom was typically staffed by the classroom teacher.
and the teacher assistant in both morning and afternoon group. All children in this program qualified for free lunch under federal economic guidelines.

Social skills instruction took place in a quiet area (i.e., book area) in the classroom from approximately 10:00 am to 10:30 am for Pairs 1 and 3, and 1:45 pm to 2:15 pm for Pairs 2 and 4 daily, Monday through Friday. Instruction for each pair lasted for 10-15 minutes. During the social skills instruction, the other children (i.e., nonparticipants) in the classroom were free to move about the room and choose any area or activity for play. The teacher and the teacher assistant would typically rotate among the children to give assistance as needed. The observational data were collected from 10:00-10:40 am for Pairs 1 and 3; and 1:45-2:25 pm for Pairs 2 and 4. The observer sat on the table with cassette tape player, audiotape, earphone, pencil, and recording sheets (See Appendix C).

**Experimenter and Observers**

The experimenter was a Ph. D. candidate in Special Education program in the Department of Educational Services and Research at the Ohio State University. The experimenter was an international student, who had 3 years of experience working with children with autism at the Taiwan University Hospital in Taiwan. The experimenter provided the instruction for all social skills training sessions to the children during the study.

There were three observers that collected data during the study. The primary observer was a second year Ph.D. student majoring in the area of the severe behavioral handicaps and applied behavior analysis within Special Education Program. The secondary observer was a first year Ph. D. student also majoring in the area of hearing impaired handicaps in Special Education.
Program. The third observer was an undergraduate student (i.e., junior) also majoring in Special Education Program at Ohio State University.

Classroom Teacher

The teacher in this study had 8 years of experiences in working with preschool children in Montessori classroom in Dayton, Ohio. This was her first year in teaching preschool children with special needs. She received her master degree in Elementary Education. She had participated in inservice training conducted by Dr. Gwendolyn Cartledge, the advisor and co-researcher for this project. The teacher also had a copy of Taking Part curriculum.

Due to the previous training in regular early childhood education, especially in Montessori approach, the classroom teacher might have experienced conflicts with the study. In this study, the direct instruction mode was employed in implementing the curriculum, while in Montessori approach, education is viewed as assisting the psychological development of children rather than as teaching per se. Children are allowed the freedom to choose tasks in an environment designed and equipped to meet their needs. Teachers are also required to hold their own activities, desires, and authority in abeyance so that children can solve their own problems (Roopnarine & Johnson, 1987). In recognition of this contrast in the perspectives of education, the experimenter tried to make the intervention more acceptable to the classroom teacher by embedding the training in the typical classroom activities and using the materials that were prepared by the classroom teacher for practicing the target skill.

The classroom teacher (i.e., head teacher) in this study was asked to complete the social skills rating questionnaire prior to the study. The teacher was also instructed to provide specific prompts and praises and implement
the maintenance activities during intervention. No other demands were placed on the teacher. Observations, instruction, monitoring, and evaluation of activities were completed by the experimenter and the three observers.

**Definition of Dependent Variables**

Three dependent variables were measured throughout the study: (a) the percentage of intervals tutor and tutee engaged in spontaneous and teacher-prompted positive peer interactions, (b) the percentage of intervals tutor and tutee engaged in spontaneous positive peer interactions with generalization peers, and (c) the number of verbal initiations by tutor and tutee.

**Positive peer Interactions.** Positive peer interaction is defined as any positive verbal or nonverbal social initiation and response from one child to another child. Positive social initiation includes greeting (e.g., saying "Hi"), suggesting ideas for play (e.g., handing the peer a ball or saying "play blocks."); talking about the ongoing activity (e.g., "the ball is blue", "Geoffrey is building that tower high"), offering a toy or material to another child, turn-taking, and offering help. Positive social response includes complying with a request, repeating, requesting clarification, or answering questions. Specific behaviors included for observation were looking at a peer, nodding one's head, or "Please say that again".

Positive peer interactions did not include verbal or nonverbal initiation behavior that is characterized by intent to inflict harm to another. Specific behaviors included: hitting or threatening to hit another child, biting another child, taking a toy away from a peer, yell a negative word (e.g., "no", "stop") in a sentence indicating that an undesirable event was occurring.
verbally taunting or abusing another child, and sticking his/her tongue out at another child.

Positive peer interactions also did not include negative verbal or nonverbal response behavior given in reply to the initiation. Specific examples included refusing to share or take turns with the peer in using materials when requested to do, crying, and tantruming.

**Positive peer interactions with generalization peers.** Generalization peers were defined as the children who were not selected as the subjects or within the same pair group in the study. That is, excluding the selected partner, the rest of the children in the class were considered as the generalization peers. For example, the generalization peers for Matthew were all the children in the class excluding Tom because Tom was selected as his partner (#7). Positive peer interactions with generalization peers are defined the same as positive peer interaction except the initiations and responses were directed to the generalization peers.

**Verbal initiations/interactions.** Verbal initiations/interactions were defined as any instance of a voluntary verbal utterance directed at another child. In order to record discrete a utterance, a 3 second (3s) time period had to lapse between utterances in order to avoid counting repetitions such as "Gimme that!" "Gimme that!". Verbal utterances in response to teacher's prompts and cues to exhibit or practice language are not included. Only the verbal utterances that initiated or maintained peer interactions are included.

**Measurement of Dependent Variables**

Data collection to measure the two dependent variables: (a) positive peer interactions, and (b) positive peer interactions with generalization peers were conducted daily Monday through Friday at the same time of social skills
instruction during nonteacher directed activities. A 10-second time-sampling system was used to measure two dependent variables: positive peer interactions, and positive peer interactions with generalization peers. Each participant was observed for 5 seconds and then in the subsequent 5 seconds recorded the behavior in which the child had engaged. Data were collected on each participant in alternating 20 seconds across 40 minute nonteacher directed activities. Each child was observed for a total of 10 minute during each observation.

An audiotape signaling a continuous 5-second observe and 5-second record was used to code positive peer interactions and positive peer interactions with generalization peers. Observers scored a maximum of one interaction per interval. Wherein two or more interactions occurred during the same interval, the negative interaction superseded the positives, and no positive interactions were scored. Appendix C provides a sample data collection sheet.

Verbal initiations/interactions were measured by audiotapes during 10-minute. non-teacher directed activities (i.e., prior or after social skills instructions). Four peer tutors wore vests with pockets on the back that held wireless microphones (i.e., Radio Shack FM wireless microphone system, Cat No., 32-1226). The data were collected at least once a week throughout the study.

Observer Training and Interobserver Agreement

Interobserver training was conducted before initial observations. The principal researcher and two doctoral and one undergraduate students in special education were responsible for all data collection. The principal investigator in this study served as the instructor for the training. Two
doctoral students received a written description of the dependent variables and recording sheet prior to data collection. The trainees were required to learn the definitions and the symbols of each dependent variable, and the way in which observations were transcribed into the data sheets. A cassette tape player and an audiotape were used for cueing the observations.

The initial interobserver training took place in late March by having pairs of observers watching sequences from videotapes simultaneously but independently coding behaviors until interobserver agreements reached at least 90% for each category of social behaviors. In the final step of training, the observers received practice in the actual environment (i.e., preschool classroom). The training was followed immediately by agreement checks and continued until a prestablished criterion (i.e., .90) was reached.

Interobserver agreement measures were collected during direct observation by the experimenter and another observer on at least 25% of all sessions. Interval-by-interval (I-I) methods were used to establish interobserver agreement. In the interval by interval method, all intervals were used to calculate the interobserver agreement. The formula used in interval by interval method to establish the percentage of agreement intervals among observers was the number of agreement intervals divided by the number of total agreement levels plus disagreement levels multiplied by 100.

\[
\text{Agreement Intervals} \quad \frac{\text{Agreement Intervals}}{\text{Agreement + Disagreement Intervals}} \times 100 = \% \text{ of Agreements}
\]

Additionally, interobserver agreement on audiotapes during 10 minute nonteacher directed activities was calculated for 30% of all audiotapes. The third observer received the written description of definition of verbal initiation prior to transcribing the data. In addition, the observer was paired...
with the primary investigator in a three-hour training (e.g., identify each participant, independently transcribe the tapes followed by immediate agreement checks). Three audiotapes recorded in the study were used for the training. The training was terminated when the agreement checks reached .80. The formula used to establish the number of agreement among observers was the number of agreement divided by the number of total agreement plus disagreement multiplied by 100.

Number of Agreements
\[ \frac{\text{Number of Agreement}}{\text{Number of Agreement} + \text{Number of Disagreements}} \times 100 = \% \text{ of Agreements} \]

Experimental Design and Analysis of Data

A multiple baseline design across subjects was used to demonstrate the effects of peer-mediated social skills training on children's social interactions (Cooper, Heron, & Heward, 1987). Changes in performance were noted while maintaining baseline measures for all other students. When data indicated a trend in the behaviors exhibited for pair 1, the independent variable was then applied to pair 2, and so on for pairs 3 and 4 on a staggered schedule. The experimental conditions included baseline, and social skills training.

Data collected during 40 minutes of nonteacher directed activities were analyzed according to the percentage of intervals the children exhibited the two dependent variables: (a) positive peer interactions and (b) positive peer interactions with generalization peers. The third dependent variable-verbal initiations were analyzed by the number (i.e., frequency) during 10 minute nonteacher directed activities. All data were analyzed using a graphic format according to the standards of a functional relationship (i.e., changes in behavior when intervention applied) in applied behavioral research.
Materials

Social skills instruction was conducted primarily by using, *Taking Part: Introducing social skills to children* (Cartledge & Kleefeld, 1991). *Taking Part* uses mainly a direct instruction or skills training model. The above curriculum was chosen because it has been validated as appropriate for teaching social skills to young children. It is activity based for high interest which helps students understand the importance of the social skills being taught.

Specifically, the following materials from the *Taking Part* curriculum were necessary to conduct the study.

**Animal vignettes.** Animal vignettes from five lessons (i.e., greeting, sharing, turn-taking, helping others participate, and ask for help) in the teacher's manual were abbreviated to each tutor's developmental level, and related to their immediate experiences. The modified vignettes were used in the motivation story for each skill. A sample of modified vignettes is included in a lesson plan (See Appendix D).

**Puppets.** Twelve animal characters, each represented by a colorful puppet, were used to present animal vignettes.

**Taking part stickers.** Six of the program's animal characters were featured on 630 color stickers. Stickers were used in the practice and maintenance activities to reinforce the target skill.

**Posters.** Four posters illustrate the facial expression, voice tone, and body language that were used as cues for the peer tutor to practice the target skill.

**Maintenance activities.** The literature for each skill lesson was selected by the experimenter and the classroom teacher. The selected stories for each
skill lesson were implemented by the classroom teacher during circle activities.

**Parent note.** A daily parent note to inform the parents about the skills the children were going to learn and the progress the children had made during social skills instruction (See Appendix F) is also included.

**Photographic activity cards.** In addition to the materials supplied by the Taking Part curriculum, the experimenter photographed 24 classroom activities (i.e., play materials). The activities were selected based on three criteria: (a) cooperative in nature such as blocks, playdough, and ball, (b) appropriate to each child's developmental levels, and (c) favored by four tutees. The photograph each sized 3.5 X 5.0 was then pasted and laminated on the constructive paper sized 6X 9 each. One to two written characters were also printed on the constructive paper to label the picture.

**Procedures**

**Prebaseline.** The study started with the selection of the target tutors and tutees as described previously, and the identification of four tutees' favorite toys. These toys were identified through observation and teacher interview and were used during in practice session of experimental condition (i.e., social skills instruction). Table 6 presents the result of favorite toys for four tutees.

**Baseline.** All baseline observations were conducted during 40-minute non-teacher directed activity. The target students were observed directly for eight, 40 minute sessions over a two-week period: four times in the first week, and four times in the second week. A time-sampling recording procedure (i.e., 5s observe, 5s record) was used to code the interactions (See Appendix C). Each child was rotated in observation every twenty seconds.
Each child was observed for a total of 10 minutes each session. The total percentage of intervals in positive peer interactions during 40 minute nonteacher directed activity were then computed and graphed in data sheet.

<table>
<thead>
<tr>
<th>Child</th>
<th>Favorite Toys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom (Pair 1)</td>
<td>dragon, lion, big green monster book</td>
</tr>
<tr>
<td>Cliff (Pair 2)</td>
<td>video music, ABCD puzzle, &quot;Oh! Hunting we will go!</td>
</tr>
<tr>
<td>David (Pair 3)</td>
<td>puzzles, trucks, blocks</td>
</tr>
<tr>
<td>Chase (Pair 4)</td>
<td>clothes book, numbers, trucks, spinning whirl, tiger puppet</td>
</tr>
</tbody>
</table>

Table 6: Preliminary Assessments for Favorite Toys for Four Tutees

The baseline condition for Pair 1 lasted for two weeks (i.e., 8 observations). Baseline conditions continued an additional one week for Pair 2 (i.e., 13 observations). Baseline condition continued another additional one week for Pair 3 (i.e., 18 observations). Pair 4 remained in baseline for a total of four weeks (i.e., 22 observations).

Social Skills Training.

After steady responding had been achieved in the students under baseline, the independent variable-social skills training was applied to the first pair of students over a period of time. Observations of data for social skills training were conducted in the same manner as during baseline.

Social skills training was conducted for each pair five times per week for a total of 40 sessions over a period of 8 weeks of training. Instructional
sessions took place for 10-15 minutes once each day. The training was
conducted in accordance with the principal techniques of the Taking Part
curriculum (Cartledge & Kleefeld, 1991). Five lessons focusing on peer
facilitation strategies were selected from the curriculum. These five lessons
are: (a) greeting, (b) sharing, (c) turn-taking, (d) helping others participate,
and (e) offering and giving help. The sequence of five lessons was followed
according to the curriculum. The mastery criteria for moving from one
lesson to the next were determined by each pair in performing each skill
correctly and independently four out of five trials in the 5-minute practice
session. Each lesson in the training was presented according to the sequence
of the scripted curriculum that consisted of motivation, practice, and
maintenance activities.

Motivation (5 minutes). The central motivational activity for each
skill is a vignette involving various members of a cast of animal characters
who introduce each social skill. In the vignettes, a character was shown to
lack a particular skill and then to learn that skill from another character. The
vignettes, presented as dialogues between puppets are also interspersed with
suggested discussion questions that invite the peer tutor to consider the
significance of a social skill.

The vignettes for five selected lessons from the Taking Part curriculum
(Cartledge & Kleefeld, 1991) were abbreviated according to each peer tutor's
developmental level (See Appendix D). Following the presentation of the
vignette and discussion questions, the peer tutor was asked to practice the
behavioral steps for each skill with the puppets. When the peer tutor
achieved the criteria in performing the target skill independently and
correctly (i.e., 4 out of 5 trials), the instructor moved on to the next practice activity.

**Practice (5 minutes).** The second component of the curriculum consists of practice opportunities for the peer tutor to perform a social skill fluently. In this session, the tutee was introduced into the group and the peer tutor was asked to practice the newly learned skill with his/her tutee. Typically, one to three activities were selected from 24 photographic activities cards each session for each pair to practice the target skill.

During the practice activities, the instructor sat on the floor with the peer tutor and the tutee, and prompted the peer tutor in conducting each behavioral step of the skills. In the initial training, the tutee’s favorite activity was used to practice the target skill. After the target skill was mastered, an additional activity which was not one of tutee's favorite activities was used to practice the target skill. To keep the interactions as successful as possible, the tutee's favorite toy was still used as the reinforcer for the less favorite activity (i.e. Premack principles, 1959). As the peer tutor mastered the target skill correctly and independently (i.e., four out of five trials), the instructor terminated the social skills instruction and moves to the next skill lesson. A sample social skill instructional lesson plan is included in Appendix D.

**Maintenance.** The third part of each lesson consisted of various classroom activities including: (a) teacher prompts (See Appendix E), (b) teacher reinforcement, (c) a note to parents (See Appendix F), and (d) one maintenance activity (i.e., greeting in literature) for each target skill from the Taking Part curriculum (Cartledge & Kleefeld, 1991) as developmentally appropriate to each peer tutor.
Teacher was instructed in using prompts only to target children during daily classroom activities. A prompt generally refers to a verbal or physical cue (i.e., suggestion or gesture) for the target child to engage in social interactions. Such prompt signaled a child to initiate an interaction or respond to the initiation of others. (e.g., "Matt, tap him on the shoulder").

Teachers were instructed by the primary investigator to provide five prompts each day throughout the daily classroom activities for maintaining the skills. Three prompts were specifically given during nonteacher directed activity. A sample of teacher use of specific prompts embedded in the classroom activities is included in Appendix E. Also, a self-evaluation checklist was used to record the teacher's prompts throughout the classroom activities (See Appendix G). Teacher were also instructed to use specific verbal praise and Taking Part stickers to reinforce the newly taught skill between peer tutors and tutees throughout the classroom activities. Specific praise statements included "Good sharing, Susie", "I like the way you say "Hi" to your friend."

A parent note from the Taking Part curriculum was modified and sent home on a daily basis for the purpose of communicating the child's progress in the social skills instruction to the parents. Several examples of parent note are included in Appendix F. In addition, the literature for each lesson from Taking Part curriculum was selected by the experimenter and the teacher. The selected story was implemented by the classroom teacher during circle times.

Generalization. The participants (i.e., peer tutors and tutees) in this study were assessed for generalization across generalization peers. Unprompted social interactions that occurred between the participants and
generalization peers were considered to be indicators of generalization. The data were collected by the same direct observation procedure as baseline, intervention, and follow-up. The code for generalization was incorporated in the direct observation form (See Appendix C-Observation Form).

Also, the generality of the response class—the number of verbal initiations during 10 minute nonteacher directed activities was used as another indicator of generalization of treatment effects.

**Procedural Integrity**

Two independent observers recorded procedural integrity on 20% of randomly selected social skill training sessions (i.e., once a week). A checklist was used to assess the procedural integrity (See Appendix H).

**Social Validation.**

In order to determine if the treatment effects can be socially validated by significant others, parents and teachers were asked to complete a social validation questionnaire (See Appendix I) at the end of study. The questionnaire lists 10 items regarding implementation (e.g., the procedure is easily implemented, easily managed, materials are appropriate, and results (e.g. social and communication benefits for peer tutors and their tutees).
CHAPTER 4

RESULTS

This chapter presents the results of the research investigation on the effects of peer-mediated social skills training on the positive peer interactions of preschool children with special needs. The chapter begins with a report of the interobserver agreement, and procedural integrity used to ensure the believability and integrity of the data and procedures. The results of the social skills training on the positive peer interactions of each target child, along with graphic representations of the data are then presented. Finally, the chapter provides information on social validity with a summary of the parent and teacher opinions about the study.

Interobserver Agreement

Interobserver agreement scores were obtained separately for each pair as well as separately on each condition. An interval by interval method was used to calculate interobserver agreement. The formula used to establish the percentage of agreement intervals among observers was the number of agreement intervals divided by the number of total agreement levels plus disagreement levels multiplied by 100.

Baseline. For pair 1, interobserver agreement for the percentage of intervals of positive peer interactions ranged from 91-95%, with a mean of 93.67%. For pair 2, interobserver agreement for the percentage of intervals of
positive peer interactions ranged from 87.5-97%, with a mean of 90.96%. For pair 3, interobserver agreement for the percentage of intervals of positive peer interactions ranged from 83-95%, with a mean of 90.33%. For pair 4, interobserver agreement for the percentage of intervals of positive peer interactions ranged from 82-97%, with a mean of 90.52%.

**Social skills intervention.** For pair 1, interobserver agreement for the percentage of intervals of positive peer interactions ranged from 83-94%, with a mean of 90.36%. For pair 2, interobserver agreement for the percentage of intervals of positive peer interactions ranged from 82-94%, with a mean of 93.67%. For pair 3, interobserver agreement for the percentage of intervals of positive peer interactions ranged from 88-94%, with a mean of 91.62%. For pair 4, interobserver agreement for the percentage of intervals of positive peer interactions ranged from 88-93%, with a mean of 91.5%.

Total interobserver agreement was checked by the secondary observer for 14 of 37 (38%) for pairs 1 and 3, and 15 of 40 (38%) for pairs 2 and 4. The total mean percentage of agreement including baseline and experimental conditions for pair 1 was 92.01. The total mean percentage of agreement including baseline and experimental conditions for pair 2 was 92.31. The total mean percentage of agreement including baseline and experimental conditions for pair 3 was 90.98. The total mean percentage of agreement including baseline and experimental conditions for pair 4 was 91.01.

**Verbal initiations/interactions.** A total of thirty audiotapes were obtained throughout the study. For Tom, 12 sessions were collected in total throughout the study (i.e., 2 in baseline, 10 in social skills interventions). Four sessions (i.e., one in baseline, three in social skills interventions) were used to calculate the interobserver agreement. The range of interobserver
agreement for Tom was from 74-82.3%, with a mean of 76.5%. For Teresa, eight sessions were collected in total throughout the study (i.e., two in baseline, six in social skills interventions). Three sessions were used to calculate the interobserver agreement. The range of agreement was from 74-85%, with a mean of 79%. For Steve, four sessions were collected in total (i.e., two in baseline, two in social skills interventions). Two were used to calculate the interobserver agreement (i.e., one in baseline, one in intervention). The interobserver agreement were 78% and 82%, with a mean of 80%. For Laura, six sessions were collected (i.e., four in baseline, two in social skills intervention). Two sessions were used to calculate the interobserver agreement (i.e., one in baseline, one in social skills intervention). The interobserver agreement were 78% and 84%, with a mean of 81%.

Procedural Integrity

Procedural integrity scores were obtained by having one of the trained observers complete the procedural checklist (See Appendix H). The procedural checklist was completed for each lesson (See Table 7). In lesson 1-greeting, all the procedural items were checked as Yes except the second item on the maintenance activities about specific teacher prompts of the learned skills. In Lesson 2-sharing, all the items were checked as Yes except two items on specific teacher praise and maintenance activities. For lessons 3 through 5, all of the steps were met except those not applicable (NA).

In addition, a self-evaluation checklist (See Appendix G) was used by the classroom teacher during the intervention to record the specific prompts for each peer tutor. Table 8 presents the results of the self-evaluation prompt
<table>
<thead>
<tr>
<th>Question#</th>
<th>Lesson-1</th>
<th>Lesson-2</th>
<th>Lesson-3</th>
<th>Lesson-4</th>
<th>Lesson-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mot-1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mot-2</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>Yes</td>
<td>NA</td>
</tr>
<tr>
<td>Mot-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mot-4</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mot-5</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>Yes</td>
<td>NA</td>
</tr>
<tr>
<td>Prc-1</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Prc-2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Prc-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Prc-4</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Prc-5</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Man-1</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Man-2</td>
<td>NA</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td>Man-3</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td>Man-4</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Man-5</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: Mot=Motivation, Prc=Practice, Man=Maintenance, NA=Not Applicable

Table 7: Procedural Checklist for Each Lesson

checklist used by the classroom teacher. Specifically, for Tom (i.e., pair 1-peer tutor), teacher prompts provided during nonteacher directed activities ranged from 0 to 5, with a mean of 2.5. For Teresa (i.e., pair 2-peer tutor), teacher prompts during nonteacher directed activities ranged from 0 to 3 with a mean
of 1. For Steve (i.e., pair 3-peer tutor), teacher prompts provided during nonteacher directed activities ranged from 0 to four, with a mean of 1. For Laura (i.e., pair 4-peer tutor), teacher prompts provided during nonteacher directed activities ranged from 0-3, with a mean of .3.

<table>
<thead>
<tr>
<th>Number</th>
<th>Tom</th>
<th>Teresa</th>
<th>Steve</th>
<th>Laura</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Intervention Sessions</td>
<td>22</td>
<td>24</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Total Sessions Recorded</td>
<td>10</td>
<td>14</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Total Number of Prompts Provided during Nonteacher directed Activities</td>
<td>25</td>
<td>14</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Total Number of Successful Prompts Recorded during Nonteacher Directed Activities</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Total Number of Prompts during Other Activities (i.e., snack, circle, and transition)</td>
<td>9</td>
<td>0</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Total Number of Successful Prompts during Other Activities (i.e., snack, circle, and transition)</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 8: Teacher Prompts
Experimental Results

Positive peer interactions. Figure 1 shows percentage of intervals each child engaged in positive peer interactions during nonteacher directed activities. The graphic display of the data was presented in a multiple baseline design across subjects (i.e., four pairs). Figure 3 presents the mean percentage of intervals each target child engaged during baseline and social skills intervention.

For Pair 1 (Tom and Matthew) during 9 sessions of baseline, the percentage of intervals that Tom engaged in positive peer interaction between pairs ranged from 0-3, with a mean of 0.33; for Matthew ranged from 0-5, with a mean of 0.7. During 22 sessions of treatment (i.e., social skills intervention), the percentage of intervals where Tom engaged in positive peer interaction ranged from 0-46, with a mean of 12.45; for Matthew the range was from 0-42, with a mean of 12.90. This was an increase of 12.12 for Tom, and 12.2 for Matthew over baseline.

For Pair 2 (Teresa and Cliff), during 9 sessions of baseline the percentage of intervals that Teresa engaged in positive peer interactions ranged from 0-11, with a mean of 1.7; for Cliff no positive peer interactions were observed, resulting in a mean of 0. During 24 sessions of social skills intervention, the percentage of intervals Teresa engaged in positive peer interactions ranged from 0-25, with a mean of 14.24; for Cliff the range was from 0-31, with a mean of 16.25. This was an increase of 12.54 for Teresa, and 16.25 for Matthew over baseline.

For Pair 3 (Steve and David), during 17 sessions of baseline the percentage of intervals Steve engaged in positive peer interactions ranged from 0-3, with a mean of 0.6, for David the range was from 0-8, with a mean
Figure 1 Percentage of Intervals in Spontaneous and Teacher-Prompted Positive Peer Interactions for Four Pairs
Figure 2 Percentage of Intervals in Spontaneous Positive Peer Interactions with Generalization Peers for Four Tutees
Figure 3  Mean Percentage of Intervals in Spontaneous and Teacher-Prompted Positive Peer Interactions for All Participants

Figure 4  Mean Percentage of Intervals in Spontaneous Positive Peer Interactions for Four Tutees with Generalization Peers

Figure 5  Mean of Verbal Initiations/Interactions for Four Peer Tutors

96
Figure 6  Number of Verbal Initiations for Four Peer Tutors
of 1.47. During 13 sessions of social skills intervention, the percentage of intervals Steve engaged in positive peer interactions ranged from 2-39, with a mean of 22.76; for David the range was from 4-33, with a mean of 17.07. This was an increase of 22.16 for Steve, and 15.6 for David over baseline.

For Pair 4 (Laura and Chase), during 12 sessions of baseline, the percentage of intervals Laura engaged in positive peer interactions ranged from 0-6, with a mean of 0.75; for Chase the range was from 0-8, with a mean of 1.41. During 15 sessions of social skills intervention, the percentage of intervals Laura engaged in positive peer interactions ranged from 0-23, with a mean of 10.6; for Chase the range was from 0-35, with a mean of 9.93. This was an increase of 9.85 for Laura, and 8.52 for Chase over baseline.

**Positive peer Interactions with generalization peers.** Figure 2 illustrates the percentage of intervals each tutee engaged in peer interactions with their generalization peers, that is, with peers other than their social partners. Figure 4 presents the mean percentage of intervals of positive peer interactions each tutee exhibited with generalization peers during the baseline and social skills intervention.

For Matthew (Pair 1), percentage of intervals engaged in generalization peer interactions during 9 sessions of baseline ranged from 0-7, with a mean of 2.22. During 24 sessions of social skills interventions, the percentage of intervals Matthew engaged in peer interactions with generalization peers ranged from 0-30, with a mean of 10.29. Matthew increased a mean of 8.07 over baseline.

For Cliff (Pair 2), percentage of intervals engaged in generalization peer interactions during 9 sessions of baseline, ranged from 0-10 with a mean of 0.86. During 24 sessions of social skills intervention, percentage of intervals...
Cliff engaged in peer interactions with generalization peers ranged from 0-19, with a mean of 5.25. Cliff increased a mean of 4.39 over baseline.

For David (Pair 3), percentage of intervals engaged in positive peer interactions during 17 sessions of baseline ranged from 0-11, with a mean of 3.38. During 13 sessions of social skills intervention, percentage of intervals David engaged in positive peer interactions ranged from 0-50, with a mean of 16.92. David increased a mean of 13.54 over baseline.

For Chase (Pair 4), percentage of intervals engaged in positive peer interactions with generalization peers during 14 sessions of baseline, ranged from 0-11, with a mean of 3.21. During 16 sessions of social skills intervention, percentage of intervals Chase engaged in positive peer interactions with generalization peers ranged from 0-10, with a mean of 3.5. Chase increased a mean of 0.29 over baseline.

**Verbal initiations/interactions.** Figure 5 illustrates the mean of verbal initiations each peer tutor exhibited during 10 minute nonteacher directed activity. Figure 6 illustrates the number of verbal initiations each peer tutor exhibited during 10 minute nonteacher directed activity. For Tom, the number of verbal initiations during 10 minute nonteacher directed activity ranged from 14 to 16, with a mean of 15. During 10 sessions of social skills intervention, the number of verbal initiations ranged from 17 to 42, with a mean of 27.5. That was an increase of 12.5 for Tom over baseline.

For Teresa, the number of verbal initiations collected during 2 sessions of baseline were 21 and 25, with a mean of 23. During six sessions of social skills intervention, the range of the number of verbal initiations was from 24 to 30, with a mean of 28.25. There was an increase of 5.25 for Teresa over the baseline.
For Steve, the number of verbal initiations collected during two sessions of baseline were 21 and 22, with a mean of 21.5. During the 2 sessions of social skills intervention, the number of verbal initiations were 33 and 35, with a mean of 34.5. An increase of 13 over the baseline for Steve was noted.

For Laura, the number of verbal initiations during the four sessions of baseline ranged from 9-25, with a mean of 15.5. During 2 sessions of social skills intervention, the number of initiations were 25 and 19, with a mean of 22. There was an increase of 6.5 for Laura over the baseline.

Social Validity

Questionnaires were completed by the classroom teacher, teacher aide, and parents of participants after the completion of the study. Parents and teachers were asked to respond to each statement on the questionnaires with directions by circling SA-strongly agree, A-agree, D-disagree, SD-strongly disagree on a Likert scale. The findings for each group of respondents to the questionnaire are shown as the followings.

Parents. Parents were asked to respond to ten statements with directions on the questionnaires. Questionnaires were sent home after the completion of the study for each target student. Seven of the eight parents returned the questionnaires. Among these seven parents, four were the parents of peer tutors and three were the parents of tutees. Table 9 presents the summary of the results.

All parents of the four peer tutors indicated strongly (i.e., strongly agree) there had been changes in their child's social communication skills after the training. They indicated the changes were positive (i.e., communicates more at home). Also, they strongly agreed that social skills instruction is helpful in improving their child's social communication skills.
All parents of three tutees noticed changes about their child's social communication skills after training. The changes they indicated were also positive (i.e., communicates more at home, plays more with other children, problem behaviors decreased after social skills instructions). Social skills instructions were found to be helpful in improving their child's social communication skills.

In terms of their satisfaction with the implementation of social skills intervention, the parents of all the tutors and tutees agreed strongly that they liked to read the parents note; social skills need to be taught at home and parents should be partners with teachers in teaching children social skills. They all wished their child to continue on social skills training.

Although the parents' reactions were overwhelmingly positive, there were a few items where they felt their children failed to progress. One peer tutor's parent mentioned that his child does not like social skills training and he did not find his child plays more with other children after training. Parents of three peer tutors failed to find improvement in their children's problem behaviors.

Teachers. The teacher questionnaire consisted of eleven statements which required teachers to circle the answers on four point Likert scale: SA—strongly agree, A-agree, D-disagree, D-disagree, and SD-strongly disagree. Table 10 presents the summary of the results. Both the teacher and teacher aide noticed changes in both peer tutors' and tutees' social communication skills. In terms of the satisfaction with implementation of the social skills intervention, they both felt the instructional materials were accessible and easily implemented. They also felt that social skills training needs to be taught at school, and peer-mediated social skills training is feasible in
improving student's social communication skills. They also indicated that they and their students enjoyed in participating in this project. Teachers expressed the desire to have more time to continue this study.
### Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I noticed changes in my child's social communication skills after training.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2. Social skills instruction is helpful in improving my child's social communication skills.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3. My child does not like social skills training.</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. My child communicates more at home.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>5. Social skills need to be taught at home.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>6. Parents should be partners with teachers in teaching children social skills.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>7. I like to read the parent notes on my child's progress in social skills instruction at school.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>8. I would like my child to continue on social skills instructions.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>9. My child plays more with other children.</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>10. My child's problem behavior decreased after social skills instructions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: SA=Strongly Agree, A=Agree, D=Disagree, SD=Strongly Disagree

Table 9: Parent Responses to Social Skills Intervention
1. Peer-mediated social skills training is feasible for improving social skills of preschool children with special needs.

2. I noticed changes in peer tutors' social communication skills.

3. I noticed changes in four tutee's social communication skills after training.

4. Social skills training is easy to implement in my class.

5. The materials used in the training are easily found.

6. The peer tutors who participate in this study like social skills training.

7. Social skills need to be taught at school.

8. Social skills training helps to increase the student's appropriate social skills.

9. I would like to continue on social skills training sessions in my class.

10. The tutees who participate in this study like social skills training.

11. I enjoy participating in this research project.

Note: SA=Strongly Agree, A=Agree, D=Disagree, SD=Strongly Disagree

Table 10: Teacher Responses to Social Skills Intervention
CHAPTER 5

DISCUSSION

This chapter discussed the results of this investigation of the effects of a multi-component social skills curriculum on the positive peer interactions of preschool children with special needs. The discussion of these findings is structured according to the research questions posed in Chapter 1. Also, the limitations of this study, implications for classroom practice, and future research in promoting positive peer interactions of preschool children with special needs are included.

Question 1. What were the effects of curriculum-based peer-mediated social skills training on the percentage intervals of spontaneous and teacher-prompted positive peer interactions for peer tutors and their tutees?

The percentage of intervals exhibited by each pair during the social skills training, when compared to baseline conditions, demonstrate that curriculum-based peer-mediated social skills training which employed both adult-directed instruction and peer-mediated strategies appeared to be effective in promoting the positive peer interaction among preschool children with special needs. The change in behavior was replicated at each level in the multiple baseline design.

All four pairs showed increases in positive peer interactions with their selected partners during social skills training. A reciprocal effect was also
clearly demonstrated in this study. That is, when the peer tutor increased their interaction, the tutee increased their interactions as well or vice versa.

For Pair 1 (Tom and Matthew), increases in positive interactions were 12.12 for Tom, and 12.2 for Matthew over baseline by the end of the study. In the first week of training Pair 1 failed to show increases in positive peer interactions (i.e., from session 9-13). It is worth noting that the audiotape on session 11, however, showed that Tom initiated the target skill-greeting (i.e., say "Hi" to peers) at least five times without the teacher's prompt to generalization peer (i.e, four times to Jennifer) and his tutee (i.e., one time to Matthew).

From session 16 to 20, the positive peer interactions between Tom and Matthew increased steadily, however, on sessions 21 and 22, there was a discrepancy between Tom's and Matthew's performance, Matthew outperforming Tom. Two factors may account for this discrepancy. First, during these two sessions, Tom expressed to the experimenter that he was tired of playing dragon (the tutee's favorite activity) with Matthew. Second, due to the measurement system (i.e., time sampling procedure) used in this study, it was often difficult to capture the entirety of the children's interactions. Time sampling procedures mandate that only behaviors occurring within the designated time period (i.e., 5 seconds) could be recorded. Behaviors Tom emitted outside of this period were not recorded, and in some cases, caused the data to be misleading regarding peer interaction rates. This appears to have been the case for sessions 21 and 22.

In recognition of the peer tutor's satiation with the play materials, new play materials (i.e., bubbles) were introduced on session 24 and 25. Matthew, however, resisted the changes and refused to come join the group. Thus, the
data for Pair 1 reversed to baseline levels on these two sessions. The experimenter resolved the problem by interspersing the dragon with bubbles materials, and faded out the use of dragon.

By the end of the study for Pair 2 (Teresa & Cliff), increases in positive peer interactions were 12.54% for Teresa, and 16.25% for Cliff over initial baseline conditions. At the beginning of the training, the robust changes were observed but decreases occurred after the first two weeks that could be attributed to two possible reasons. One is related to the peer tutor's motivation. Teresa, the peer tutor, was rated as the most socially skilled child in the class by both the teacher and her parents. She exhibited good social language. However, her sustained traumatic brain injury really affected her skills in manual dexterity skills. Puzzle or blocks, the activities that require princer grasp were the least attractive to her. In contrast, her tutee, Cliff, was fond of puzzles. The mismatch in the favorite play materials really caused problems in selecting appropriate activities to practice the target skill. She refused to join the group several times and this refusal may have been due in part to not liking the play materials. Another contributing factor may have been Cliff's peculiar interactive behaviors. When Cliff became excited, he liked to lean on other people's shoulders, kicking his leg, or touching the person's back. This behavior was always misinterpreted by Teresa as aggression. Two audiotapes recorded on April 30, and May, 3 during a 10-minute nonteacher directed activity revealed Teresa's five verbal utterances directed at Cliff consisting of "Stop!", "Stop! Cliff", "Stop kicking me!" For low functioning nonverbal children, their nonverbal communicative behaviors are easily misinterpreted and suppressed rather than facilitated. Although the experimenter attempted to help Teresa correct for these
misperceptions about Cliff’s behavior, it is felt that her previous trauma and medical problems left her a bit fragile on one side of her body and super sensitive and afraid of any possible physical injury from others. Despite the declines in the data, peer interactions continued well above baseline levels for Pair 2 throughout the study.

For Pair 3 (Steve & David), the results demonstrated an increase of percentage intervals of 22.16% for Steve, and 15.6% for David over the baseline. The data showed gradual but steady gains were maintained. This might be due to the evidence that Steve was one of the more socially competent students in the class and he was matched with a compatible peer as a tutee. Steve had both good receptive and expressive language skills. He followed the animal vignettes and role-played with the puppets with the experimenter with relative ease. His tutee, David, was also cooperative in the training. Both displayed increases in positive peer interactions with generalization peers. (See Question 2 & 3).

For Pair 4 (Laura and Chase), the results showed that there was an increase of 9.85% for Laura, and 8.52% for Chase over baseline, evidencing fewer changes than the other three pairs. Several explanations may account for this. First, because the treatment was introduced to Pair 4 last in the study, compared to the other three pairs they received the least amount of instruction (i.e., only 5 weeks). Second, their later introduction into the study also caused them to receive the least amount of teacher prompting (See Table 8). In her self-evaluations the teacher that Pair 4 received a mean of only .3 prompts compared with a mean of 2.5 for Pair 1. A third factor pertained to Laura’s maturity and abilities. Laura was the youngest in the class, 3 year 10 months old at the beginning of the study. She was cooperative,
however, her ability to engage in role-playing was limited and she needed a lot of prompting and repeated practice. A final consideration is the nature of a preestablished interaction pattern for Laura and Chase. The pair was selected based on the prebaseline observations of gross-motor activities. Prior to the study, their interactions consisted of chasing each other. This occurred daily so during the initial social skills training Laura was instructed to bring Chase to the group in, Chase would simply run away. Whenever one member of the pair approached the other, the other ran away. The experimenter then resorted to bringing Chase to the group, sometimes guiding him but Chase was not always cooperative. Physical assistance also was used often to help him stay in the group. The last two sessions were particularly difficult for Chase. He was not only uncooperative but also engaged in self-stimulating behaviors (i.e., tapping his chin).

The results of this study add to the current research findings by Middleton (1994), Middleton and Cartledge (1995) that a social skills instructional package, Taking Part, can be an effective tool for increasing positive peer interactions in preschool children. This study expands the previous research in demonstrating the efficacy of these procedures with preschool children with disabilities. Another expansion was that, unlike the Middleton & Cartledge study where children were taught outside the classroom, the children in this study were taught social skills within their assigned classroom with the direct involvement of the classroom teacher in prompting taught behaviors.

An important feature of this study was that it provided additional supporting evidence that peer-mediated procedures can be effective in bringing about positive changes in children's social behavior. Similar to the

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findings of other researchers (e.g., ref.), the children in this study showed convincing increases in their positive interactions with their instructional peers, the peer tutors demonstrated higher rates of initiating interactions with their classmates, and the less socially competent students not only increased their positive peer interaction rates, but generalized these behaviors to other students with whom they had not been taught.

Although the facilitating effects of peers on improving the social behaviors of less competent children is well documented, the evidence of these outcomes with students with disabilities as tutors is much more limited. In one, and perhaps the only such study, Young and Kerr (1979) used a child with mild disabilities were able to serve as a behavior change agent for two of his classmates with severe disabilities. This investigation extends the Young and Kerr study in that it included more children who were younger and less socially competent than those in the Young and Kerr study.

A related issue pertaining to the maturity and ability levels of the tutors and tutees. The Young and Kerr study was conducted with school-age, not preschool children. At this point, there is little research to suggest the ages and developmental levels beyond which peer-mediated interventions are unrealistic. Although greater gains occurred in this study with the students who were more cognitively and socially competent, gains were found with all the children, pointing to the beneficial effects of peer mediated procedures even with young children who have disabilities.

The results of this study also were consistent with the findings from other research showing that teacher prompts can play an important role in positive peer interactions (Strain & tim, 1974; Odom & Strain, 1986; <cConnell, Sisson, Cort, & Strain, 1991). The finding also pointed out the
important question related to the maturity/age of peer tutors and the match of play interest between the peer tutor and tutee.

Question 2. What were the effects of curriculum-based peer-mediated social skills training on the positive peer interactions with generalization peers for the four tutees?

This question assesses if the increases in positive peer interactions between the pairs generalized to peers not involved in the training. For the tutees, Matthew, Cliff, and David showed the greatest increase in positive peer interactions with generalization peers.

For Matthew, the results indicated an increase of a mean of percentage intervals of 8.07% over baseline. The first five data points during intervention did not show increases in positive peer interactions. This may be explained in that certain amount of instruction appears to be needed in order for tutees to generalize the skills to the peers except the selected social partner.

Matthew's progress in peer interactions was also noticed by the classroom teacher and other observers during other activities (e.g., gross-motor activity). The teacher, for example, commented to the experimenter that, "this was the first time I have ever seen Matthew participate in the group."

Matthew was cooperative and participated well during the social skills training. A special incentive appeared to be the use of his favorite play materials (i.e., dragon, big green monster book). When these toys were evident, he joined the social skills training group readily even without the peer tutor's initiation. Each time he saw that his peer tutor was role-playing with the puppets and the experimenter, he would say out loud "play dragon."
Matthew's interactions were not simply motivated by favorite toys, there is good evidence that his behavior was influenced by the training and the accompanying verbalizations. To illustrate, the audiotape on June 3 (i.e., session 35), showed that Matthew exhibited several verbal utterances directed at the generalization peers (i.e., Jennifer, & Steve) such as "Let me play the ball", "Matthew's turn", "It's not yours", and "help me" without teacher prompts during a five minute play scenario. Those utterances were the same as those used by the experimenter prompt Matthew during practice session in social skills training. Matthew appeared to have learned these verbal utterances and transferred them to interactions with peers.

For Cliff, the results indicated a mean increase of 4.39% over baseline. Although Cliff improved in his positive peer interactions with generalization peers, he made less progress than either Matthew or David. Unlike these two boys, Cliff did not respond readily to the social skills training and often physical assistance was needed to keep him in the groups.

In terms of verbal language, Cliff's verbal language was totally unintelligible although he made almost constant babbling sounds. Several words such as "ball", "bubbles", and "come on" were elicited and clearly heard during social skills training. There was the indication that Cliff's verbal language can be further elicited if the parents and teachers are involved in the training.

David, the youngest boy in the class, had demonstrated a mean increase of 13.54% over baseline. David was on Ritalin medication. The variability in baseline may have been due, in part, to the changes of medication. He was referred to the program because of severe and expressive language deficits. He used one to two word utterances to communicate his needs, however, most
of his speech was unintelligible. David appeared eager to participate in the social skills training. He was fascinated by these pictured activity cards. Despite his severe difficulties with expressive language, he appeared to have good receptive language and responded meaningfully to many of training activities. On several occasions, he even initiated intelligible statement to the experimenter such as "I want to play truck." "Truck" was his favorite activity used for practice sessions during social skills training. Also, he learned to use words such as "no" instead of crying when he was in conflict with his peer tutor during the practice session. The word "No" was also heard when he was with other children (i.e., Danny) during other activities.

For Chase, a slight mean increase of 0.29% was noted after social skills training. His limited progress may partly be accounted for by his attention disorder and self-stimulating behavior (i.e., tapping his chin), which caused him to be disengaged from the classroom activities. These behaviors characterized Chase throughout the school day and became more frequent by the end of the study. The reasons for these increases in self-stimulating behaviors are unclear, but they do not appear to be precipitated by study conditions.

In terms of Chase's verbal language, no functional speech was obtained during baseline observation. Like Cliff, several words such as "ball", and "bubbles" were elicited and used functionally when Chase requested his turn in playing ball or bubbles during social skills training.

One finding for three of the four tutees is noteworthy in the generalization data. For these children (Matthew, Cliff, and David) increases in positive interactions with generalization peers did not begin to occur until at least three or more sessions of the intervention. Cliff, for example, did not
begin to generalize his skills with other peers until the seventh instructional session. This delay in responding is probably a reflection of the children's cognitive disabilities, suggesting the need for extensive and repeated instruction before the desired behaviors will be acquired. The forth tutee, Chase, in addition to his self-stimulating behaviors, was limited by much less instruction from both the experimenter and his tutor who was absent for several days.

Furman, Rahe, and Hartup (1979) indicated that social contacts with younger children were found to contribute most to the social interactions of the withdrawn child. However, in contrast to Furman et al., in this study, Laura, who was the youngest (see Table 5) actually proved to be the least productive peer tutor. The limited progress of this pair suggest that more important variables than age in peer-mediated procedures might be peer compatibility and social maturity.

The findings of this study also point out the limitation of most peer-mediated literature. Most studies assessed the effects of generalization across settings rather than across the peers. The results also revealed that a certain amount of instruction was needed before the generalization effects (i.e., across peers) took place.

**Question 3.** What were the effects of curriculum-based peer-mediated social skills training on the number of verbal initiations for four peer tutors?

The data from this study indicate improvement in verbal initiations for all four peer tutors. For Tom, there was an increase of 12.5 (83%) over baseline. As indicated previously, Tom was referred to the program because of his severe problems in communication. The progress he made in his language was not only in the rate but also in the structure and form he used
for play initiations. For example, the verbal initiations recorded during baseline included "Hi! Shawn!", "Let's dig a hole!", "Let's do it!" "Watch me do this, OK!." The verbal initiations collected on last two sessions (i.e., session 35 & 36) during social skills intervention included "Good playing!" (i.e., from lesson on helping others to participate), "I show you" (i.e., from lesson on offering help to others), "help me", "help me like this" (i.e., from lesson on asking for help), "let's play dog", "share" (i.e., from lesson on sharing), "my turn!", "your turn" (i.e., from lesson-turn taking).

For Teresa, there was a mean increase of 5.25 (22%) over baseline. Teresa received the highest teacher social skill ratings in the class. Observations showed she was exhibited a high frequency of social language such as "Hi! Ms. Amy!", "Bye! Ms. Terry!", "I love you, Chu-Sui!" "Thank you!" during baseline. Most of her verbalizations, however, were directed toward adults rather than with peers. Only one play initiation (i.e., "Cathy! Do you want to play?" was recorded during two day observations). During the social skills intervention, various play initiations such as "Could you play? Can you share?" "Do we kick back?" "Let's play!" "Common! Chase!" "Common! Cliff!"

Teresa was a child that wanted the adult's attention all the time. At the end of the study, she was able to direct some of her attention to her peers, especially with Cathy, instead of adults.

For Steve, a mean increase of 13 (60%) verbal initiations over the baseline was noted. During the baseline observation, Steve was reticent and made few play initiations. The verbal initiations recorded during two-day observations included only "Let's get that!" "Look those!" The verbal initiations recorded on the last session (i.e., session 34) included "Come on!"
Matthew!" (i.e., three times), "Let's hang it out", "Look I got this!", "Matthew! Do you want this? "Hi! Matthew! Drive me around!". During a 10 minute play scenario, Steve made at least 11 play initiations with Matthew. That was another indication of generalization of his learned skills into generalization peers (i.e., with Matthew instead of David).

For Laura, although there was an increase of 6.5 verbal initiations (41.9%) over the baseline. These increases may be a bit misleading in that they represent only two sessions during intervention and there is no evidence that this level of initiation/interaction would be maintained or increase over time. The verbal initiations collected during the baseline included "Can you help me to do this?" "Look!" "I will help you!" "Can you play with me?" "Give it to me!" "Let's do it right now!" The verbal initiations collected during the social skills intervention included "My turn!" "Hello!" "Let's play sand!" (i.e., 2 times) "Kati! Do you want to play sand with Cathy?" Most verbal initiations Laura exhibited during this recording session, however, were mainly with one classmate-Kati, not with any of the tutees.

Laura made the least progress among four peer tutors. The result was consistent with the previous two questions (See questions 1 and 2). For example, in question 1, Pair 4 showed the least improvement. In question 2, Chase did not demonstrate the progress in the positive peer interactions with the generalization peers. A rationale for this limited progress was already discussed in Question 1.

Most peer-mediated literature did not focus on the changes of peer tutors. The findings of this study indicate that social skills training can contribute to the peer tutor's language development. Unfortunately, the data
was not complete due to the technical problems in recording. In addition, further investigation was needed to determine if the progress occurred not only in amount but also in type, i.e., form and structure.

**Question 4. What were the teacher's and parent's opinions of the utility and efficacy of the social skills training in improving the student's social communication skills?**

As Wolery (1991) aptly noted intervention tactics must be judged both by the outcomes produced and by the relative ease and efficiency of achieving the same. For those procedures to be successfully implemented in the classroom, they must be easily incorporated into classroom routines. These guidelines have directed an increased focus on the implementation of less intrusive, less costly procedures and those that improve the academic and social skills of all students involved.

Classroom teachers who participated in this study were required to complete the social validity questionnaire. In terms of the outcomes of this study, both teachers indicated positive changes in children's social communication skills after social skills training. They also expressed opinions that social skills need to be taught at school, social skills training helps to increase the student's appropriate social skills, and they would like to continue the procedures of this study.

Five out of ten questions directly addressed the relative ease of implementing social skills training in the classroom. The classroom teachers both indicated that peer-mediated social skills training is valuable for improving the social skills of preschool children with special needs and the materials used in the training were accessible (i.e., cost effective and unobtrusive). The head teacher felt that social skills training was not easily
implemented. She mentioned to the researcher that after this study, she realized social interactions for children with special needs will not occur naturally. Careful, thorough preparation is necessary for social skills training to be effective, especially for children with autism.

According to Odom, McConnell, and Chandler (1994), the complexity of certain aspects of a peer-mediated approaches (i.e., teacher prompting, teaching peers initiation strategies) may have influenced teacher reaction in the relative ease of this strategy. The self-evaluation checklist for teacher prompts (See Table 3, Chapter 4) used in this study indicated that the teacher did provide the prompts for each peer tutor variously throughout the classroom activities, however, the prompt provided was not successful each time. For example, for Pair 1-peer tutor, Tom, 25 prompts were recorded during 10 intervention sessions, however, only 10 (i.e., less than 50%) were successful. Future research may focus on which teacher prompts are successful and unsuccessful and ways to instruct teachers to use more effective prompts in facilitating their student's peer interactions.

Another interesting point was related to teacher use of reinforcement techniques in the study. The classroom teacher was instructed to use the Taking Part stickers and verbal praise to reinforce children's target behaviors. However, very few stickers were given to reinforce children's behaviors. It may be that the teacher either found it too demanding or awkward to administer stickers while simultaneously conducting regular classroom activities. This classroom of preschool children was extremely active, placing constant demands on the teacher's attention and giving relative little time to attend to somewhat extraneous activities such as administrating rewards. Another explanation may pertain to the teacher's belief system. Behavioral
interventions were not part of her professional training or her teaching repertoires. A position taken by Odom, McConnelly and Chandler (1994) may apply here "although praising peers for interacting with children was generally acceptable and considered feasible, providing activities or tangible reinforces was less acceptable. One trend in social interaction research has been to reduce or remove the teacher-administered consequences for the peers (i.e., tangible reinforces as well as teacher prompts)" (p.233).

Parents were asked to complete the social validity questionnaire after the study. All of the parents noted improvements in their children's social communication skills. They were satisfied with the skill training, and that they enjoyed the reading parent's notes. They also agreed that social skills needed to be taught at home, and that parents should be partners with teachers in teaching children social skills.

Although the parents' reactions were very positive toward this study, there were a few items on which a few parents deviated from the majority. For example, Tom's parent expressed that Tom (Pair 1-peer tutor) did not like social skills training. During his training, Tom had refused to participate in the instructional sessions on several occasions and appeared frustrated in having to memorize the behavioral steps of each target skill. He also had difficulty recalling the instructional vignettes and role-playing with the puppets. Tom evidenced disorders of memory, thinking, and language, the areas where his training placed the greatest demands. It is worth noting that a positive parent note incorporated into this training was used as a contingency to get Tom to be cooperative and responsive to the training. Tom's parent did not perceive that Tom played more with other children. One explanation may relate to so called "ceiling effects." That is, though Tom had limited
verbal skills, direct observations showed that he had the highest peer interaction rates and he played well with other children before this social skills training. Therefore, if increases in peer interaction did occur, they may have been imperceptible.

The questionnaire also assessed response generality. Parents were asked if their children's problem behavior decreased after social skills training. All parents of the three tutees agreed that they observed reductions in problem behavior; however, parents of three peer tutors (i.e., Tom, Teresa, and Laura) did not perceive similar changes. Although the major focus of this study was on increasing peer interactions rather than on decreasing inappropriate behaviors, several researchers have raised the point that the acquisition of social interaction skills may favorably affect inappropriate or socially unacceptable behaviors for children with autism (Lee & Odom, 1991; Koegel, Koegel, Hurley, & Frea, 1992). On the other hand, peer interaction behaviors are not usually incompatible with many problem behaviors and may easily coexist with many actions deemed by parents to be inappropriate. The findings also point to some limitations of the peer-mediated literature. Almost all of these studies have focused on the changes effected by the peer tutors on the tutees. Few, if any of the studies have investigated behavioral changes experienced by peer tutors as a result of serving in this capacity. (e.g., less aggressive toward other peers).

Limitations of Study

This study was limited by the following factors: pair selection, absences/new students, implementer threat, sequences of instruction, measurement, generalization, and length of study. These extraneous variables might affect the results of the study.
Participants

Pair selection/sample Size. The study selected four pairs based on social skills rating questionnaires (Gresham & Elliot, 1990), direct observations, and the teacher's recommendations. The problem, as discussed previously under question 2, related to the incompatibilities of the children's interest which caused problems during the practice sessions. A prebaseline assessment of favorite activities for the four peer tutors might have helped to produce better matched pairs. The extremely small accessible population (n=12), however, also restricted the possibilities for the generality of the results.

Absences/new students. Student and teacher absences were a problem throughout the study. The classroom teacher and teacher aide missed school occasionally due to illnesses, but the teacher aide was absent for an extended period when she took a two-week vacation during the seventh and eighth weeks of the study. These absences tended to tax the study in that there was a disruption to the regular classroom routine and the children often reacted negatively to these changes. On a few occasions, when the teacher was absent, the principal canceled classes for these students. Also, during this period, three new students joined the program; one in the afternoon group, and the other two in the morning group. Absences also were a problem for the students at the end of the school year. Especially Steve and Laura, who each missed almost an entire week during weeks 9 and 10. The effects of these absences, and the introduction of new students on the results of the study is unknown.
Social Skill Instructions

**Implementer threat.** Social skills instruction was delivered by the experimenter instead of the classroom teacher. The experimenter was reared in a different country where the culture produces distinct classroom practices that are noteworthy. For example, the experimenter was unprepared for the reactions from some of the students in the initial training. When approached by the experimenter, one of the peer tutors responded very firmly, "No". Students are always compliant to the teacher's requests in experimenter's country, even for preschoolers. Thus, in the initial training, the experimenter was confused by her role. The experimenter canceled the initial sessions and then learned to be more assertive in her interactions with the students. Throughout the study, she periodically prompted herself in ways to effectively direct and engage the students.

Another observation was that even play materials are culturally-specific. In this country, children play with playdough while in Taiwan, children play with dirt. The difference in play materials limited the experimenter's teaching repertoire in that she had to first learn about the materials before conducting training sessions. The need to acquire this additional information and skill, initially reduced her teaching comfort and flexibility.

A final point pertains to the language the experimenter used to facilitate the children's interactions. English, the language used in the classroom, is the experimenter's second language. It is possible that difficulties with specific terms, idioms, or pronunciation might have interfered with the communication between the experimenter and the children in this study. This is particularly relevant since many of the children
in this program had significant difficulties. The outcome of this study might have been different if the instruction had been delivered by the classroom teacher or an experimenter who was a native English speaker and thoroughly familiar with the culture of the United States, urban classroom.

**Sequences of instruction.** The sequence in which social skills are taught to young children deserved attention. Kohler and Strain (1993) suggest that "sharing" needs to be taught first, followed by "making play suggestions", "giving assistance", "showing affection", and "giving compliments". What is the most valid sequences of social skills instruction for preschoolers? The data for Pair 1 (Tom and Matthew) did not show increases in the first week when the instruction was on "greetings". Pair 2, 3, and 4, however, received their initial instruction on "sharing", because they already had the greeting skill in their repertoire, and their data showed increases in positive peer interactions from the beginning.

**Measurement**

A time-sampling procedure was used to measure the target behavior of positive peer interactions in this study. The advantage of the time-sampling procedure was that it usually provides a more representative picture of the children's social behavior across activities than does a single block of observations. Time-sampling systems, however, do not provide the information about the sequential nature of a child's social interaction (i.e., initiation or response). Also, the time-sampling systems do not provide the information about the type of interaction (e.g., affection, starts, shares, share request, or helping others) and the reciprocal nature of social interactions. That is, the data did not clearly demonstrate peer interactions. A more
complete, and continuous measurement such as event or duration recording may need to be employed to enhance the accuracy of direct observation.

A related issue is that the limited data in verbal initiations may prevent interpretation problems. An event recording system was used to measure the number of verbal initiations during a 10-minute nonteacher directed observation. A total of 40 audiotapes were taken throughout the study. Ten tapes, however, were eliminated for the data due to some technical problems in recording. A better recording system was needed. In addition, a third observer who was responsible for transcribing data was recruited as another interobserver after the study had ended. The interobserver agreement of verbal initiations would have improved if both observers were recording on site.

Generalization

Across settings. Positive peer interactions with generalization peers for three tutees was found in this study. The study, however, was limited in the data of determining the generalization effects to untrained settings such as during snack time or gross-motor activity time. Also, the study failed to determine if the four peer tutors increased their interactions with either untrained peers or within untrained settings.

Over time. An additional major disadvantage within this study were time constraints that did not permit the experimenter to assess the desirability of treatment effects. The study was conducted over the course of 10 weeks for 40 sessions. Only eight weeks were used for instruction. The time period was insufficient to fade out teacher's prompts at the end of the study. The literature suggests that social skills taught in instructional groups may need to be paired with teacher support in play settings (McConnell & Goldstein, 1992).
A systematic fading procedure for reducing teacher prompts and reinforcement to young children with disabilities was needed after the social skills intervention had ended in this study. The study, however, was unable to determine if the target children maintained their interactions with peers after the intervention had ended.

Implications

The results of this study indicate that a curriculum-based peer-mediated social skills training which employs both teacher and peer-mediated strategies can be effectively adapted for classroom use. The results of this study have several important implications for classroom practices. First, the modification of this curriculum was necessary. The animal vignettes were all abbreviated in order to adjust to each peer tutor's development level (See Appendix D-Samples of Lesson Plans). As Mize (1995) suggested, "the most salient modification was that instruction needs to be based primarily on modeling and role-playing as opposed to heavy reliance on verbal instruction and discussion common in older children" (p. 248). Preschool children with disabilities often do not have good receptive language abilities, and their attention spans are usually short. The vignettes presented need to be relatively short and ideally fit into their immediate experiences. Modeling and role-playing were two major viable strategies in teaching social skills to preschool children. However, most preschoolers may have difficulties in role-playing in the initial training. The instructor may feel frustrated in the beginning but the consistent prompts and daily repeated practices would help their eventual development of this skill.

Goldstein (1993) augmented a peer-mediated approach by teaching sociodramatic scripts to children at varying developmental levels. In this
intervention, both children with disabilities and typical children are taught sociodramatic play scripts that provide a basis for improving interactions during free-play. As Goldstein (1993) suggested "script instruction seems to impose an expectation for interaction and communication among children" (p. 40). The Taking Part curriculum was similar to Goldstein's (1993) study in using scripts training. However, this (Taking Part) curriculum was different in employing animal characters to present sociodramatic scripts. Usually, two to three characters were employed for each lesson scenario. Peer tutors in this study were fond of the animal puppets in this curriculum. Among these puppets, peer tutors particularly liked Felicia Fox, Benny Frog, and Will Rabbit. The study did not involve tutees in the script training due to the limitation in their expressive verbal skills. The results may be different if tutees were involved in the script training.

Second, the curriculum is teacher-friendly and provides the flexibility to incorporate the instruction into the existing classroom schedule. In this study, the regular classroom settings (i.e., reading area) and typical preschool non-teacher directed activities were used for instructional places and time. Although one teacher did not agree that social skills training is easily implemented in the classroom, this may be due to the complexities of the peer-mediated strategies which require consistent prompts and preparation. This teacher elaborated on this statement by saying that social skill instruction required thorough preparation, suggesting that such instruction should be taken seriously. She also stated that social skill instruction was important and valuable to her students.
Third, the limited progress by Pair 4 also suggested that maturity is a critical issue in selecting peer tutors, and that teacher prompts are important to maintaining a child’s progress.

Suggestions for Future Research

The limitations noted in this study suggest the need for future research. First, the parents’ questionnaires indicated that three peer tutors failed to show reductions in the problem behaviors as a result of social skills training. Almost all of the peer-mediated literature focuses on the changes in tutees, not peer tutors. There is a need to study more closely the effects such as procedures might have in fostering more adaptive behavior of the peer tutors. Several researchers contend that direct teaching of social skills to children with autism may decrease their stereotypic, socially inappropriate behavior (Koegel, Koegel, Hurley, & Frea, 1992). These possible outcomes may not apply to children with other disabilities such as three peer tutors from this study.

Second, the research needs to investigate the effects of these procedures on the changes of verbal initiations of peer tutors. In addition to quantities, these studies also need to focus on verbal forms, structures, and pragmatic functions in order to get a comprehensive picture of the children's language development.

Third, the analysis of successful and unsuccessful teacher prompts and reinforcement techniques designed to enhance the effectiveness of this curriculum-based instruction is warranted in the future research.

Fourth is the use of this curriculum with a larger group of students in the social skills instruction in order to maximize cost effectiveness and enhance the skill generalization across peers. The use of a multi-examplar
strategy during social skills training has been well documented in the literature to promote the generalization effects of the target skill (e.g., Carr & Darcy, 1990). Future research needs to investigate the effects of the use of this curriculum with a larger group of students.

Finally, one trend in social interaction research has been to reduce or remove the teacher-administered consequences for peers (i.e., prompts, tangible reinforcers). More research is needed in the procedures of applying and withdrawing teacher's support system.

Summary

The social and behavioral deficits in all groups of young children with disabilities have been extensively documented. The development of a comprehensive, sequential approach to enhance the social relatedness and social competence of children with disabilities in early childhood special education is warranted.

This study employed curriculum-based peer-mediated social skills training for preschool children with disabilities. The results of this study indicated that these procedures were effective in increasing the positive peer interactions of preschool children with disabilities. The curriculum-based approach using direct instruction, corrective feedback, and a parent's note appeared to address both motivation and performance deficits for children with disabilities. The changes in positive peer interactions was also socially validated by significant the parents of the children on the study and their teachers.

The findings and limitations of this study points to the need for future research in the area of positive peer interactions in preschool children with special needs. Further investigations need to replicate the study by utilizing a
more precise measurement system, extending the treatment period, systematically withdrawing the teacher's prompts, and promoting more generalization outcomes.
References


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Appendix A. Parent Permission Letter
January 26, 1996

Dear Parent:

I am a professor in the college of education at The Ohio State University. My doctoral student, Ms. Chu-Sui Lin, and I will be conducting a research project in your child's school. The project is designed to study the social behaviors of preschool students with special needs. Specifically, we are interested in how we can help children best develop skills to communicate and get along with each other. In this study, your child's social behavior will be rated by the classroom teacher. This means the classroom teacher will complete a 40-item rating form, indicating the degree to which the teacher feels your child does or does not perform certain social behaviors. My university students also will assess your child's social communication skills using a social communication assessment instrument and direct observations of your child's social interactions with peers in the classroom. Both of these procedures will simply involve observing your child while he or she is engaged in regular school activities. A third assessment is the parent rating. We would like for you to rate your child's social skills on an instrument (Social Skills Rating System) that we would provide to you at the beginning of the study. We wish information on how parents view their children's social development. All school assessments will be completed in the child's classroom at a time that is convenient with your child's teacher.

We will need to review your child's school records to obtain information such as age, birth date, and number of years in school. We will also review data on psychological assessments, if any has been conducted. This information will be used only as the basis for matching the students in instructional pairs.

Following these assessments, my doctoral student and another university student will work with the classroom teacher to select and use teaching activities to teach important social communication skills to your child. We are particularly interested in helping young children to interact in meaningful and socially appropriate ways with their fellow students. We will teach the children in pairs and encourage them to use the skills they were taught throughout the school day. We also plan to send home to you notes that describe the skills that were taught and request that you reinforce these behaviors at home.

Parent Permission, page 2 of 2

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We will continue to observe the children throughout the study to determine if they are improving in their social communication skills. Acquiring these social communication skills are critical for your child’s overall development. This instruction is considered to be part of your child’s regular school program and will be conducted in collaboration with your child’s teacher. This project is experimental only in that my doctoral student and another university student will be observing your child to determine if this instruction is effective. That is, they will note specifically improvements in your child’s interactions with other students in the class.

This project will not cause your child to miss any regular classroom instruction and all information collected about your child will be confidential. After completing this project, the data will be used as part of Ms Lin’s dissertation. Your child’s name will not be used and any reference to your child will be destroyed. No one other than the researchers will use this information and your child will not be identified in any way to others.

We are requesting your permission for your child to participate in this project. Parents of children in this project will be used to monitor their child’s social skills at home and to complete daily parent note on the skills taught in school. Attached is a copy of a sample parent note. Participation is purely voluntary and the decision to participate or not will not affect the way your child will be treated or graded at school. Should you consent to your child’s participation, please know that you or your child can choose to withdraw at any time during this project. If you have questions, please feel free to contact me at 292-7629. Thank you for your attention and cooperation.

Sincerely,

Gwendolyn Cartledge, Ph.D.
Professor
Appendix B. School Permission Letter
January 26, 1996

Mrs. Lois Glover, Principal  
Kent Elementary School  
1414 Gault Street  
Columbus, Ohio 43205

Dear Mrs. Glover:

I wish to formally request that my doctoral student, Chu-Sui Lin, and I be permitted to conduct a research project in Mrs. Cynthia Wilimitis' classroom with her preschool students with special needs. As we previously discussed, this project deals with teaching social communication skills to preschool students. Specifically, we are interested in determining if we can improve peer-based social communication skills through the social learning principles and strategies employed in the *Taking Part* curriculum for young children.

The specific procedures of this research project are detailed in the attached proposal. To summarize the most important aspects of this proposal, you should know that we hope to begin the project by mid February. We will begin by obtaining parent permission and assessing the children's social communication skills through direct observations. We also hope to obtain social skill ratings from the classroom teacher and parents on the *Social Skill Rating System* (SSRS). We plan to teach the children in pairs, matching one child diagnosed with autism with a more socially competent peer. We hope this peer-based instructional model will be effective in increasing appropriate peer social communication skills. We plan to provide direct instruction daily for eight weeks, spending approximately one and a half hours each day in the school. The study will end by the end of school year.

We have requested permission for this project from the University Human Subjects Review Committee and the Columbus Public Schools. I know you are quite familiar with the social skill instructional activities, but please do not hesitate to contact me if you have additional questions about the proposed methods of this study. Please let me know if we have your permission to conduct this study at Kent Elementary. I can be contacted at 292-7629.

Thanks much for your attention and cooperation.

Sincerely,

Gwendolyn Cartledge, Ph.D.  
Professor
Appendix C. Recording Form
### Observation Form

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C: Child  
P: Peer  
G: Untrained Peer  
T: Teacher

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Appendix D. Samples of Lesson Plans
Lesson Plan 1-Greeting

Peer Tutor: Tom
Tutee: Matthew

Goal: Greet appropriately to peers

Objective: Students will greet appropriately during 5-min. practice session four out of five trials.

Materials: Three puppets (Ross Raccoon, Sara Bear, Shelli Squirrel); Posters 1, 2, 3 in Taking Part: Introducing social skills to children.

Time: 5-10 minutes

Procedure:

I. Motivation.
   a. Present animal script (Ross Raccoon, Sara Bear, Shelli Squirrel).
      Ross Raccoon: Hi! Sara!
      Sara Bear (head down, not saying anything)
      Ross Raccoon: (shakes his head and turns toward Travis): That Sara Bear never say Hi to me! She is not very nice! I am not going to play with her!!
      Shelli Squirrel: Hi, Sara.
      Sara Bear (head down, not saying anything)
      Shelli Squirrel: You do not look happy. Do you feel Okay?
      Sara Bear: Yeah. (starts to walk away)
      Shelli Squirrel: Wait a minute. Don't you want to play?
      Sara Bear: OKay. I like to play. Nobody ever asks me to play together.
      Shelli Squirrel: Well, that's because you never say "Hi" to everybody. Just now when I say "Hi" to you, you did not even look at me.
      Sara Bear: Sorry! Maybe I need to try to say "Hi" to someone.
      Shelli Squirrel: OKay, I will pretend that I am playing in the kitchen. You come up and say "Hi" to me.
      Sara Bear (head down, voice low): "Hi"
      Shelli Squirrel: That's a good try, Sara! But you know when you say "Hi" to people, First, you need to look in the person's eyes, smile, say "Hi" in a nice way.
      Sara Bear (look up and say "Hi" brightly).
      Shelli Squirrel: Great, Sara! Here is your chance, Ross is coming! Can you say "Hi" to her?
      Sara Bear: look up and say "Hi" to Ross.
      Ross Raccoon: Hi! Ross! Let's play together!
b. Present specific behavioral steps. Ask Travis to repeat the following steps.
   1. Look
   2. Smile
   3. Hi

c. Models the skill.
d. Role-plays the target skill with Tom. Asks Tom to be one of the animal character-Sara Bear.
e. Introduce the different animal characters (i.e., at least 5) for Tom to master the skill.
f. After Tom master 4 out of five consecutive trials, moves to the next practice sessions.

II. Practice

   a. Matthew is introduced into the group.
   b. Ask Tom to say "Hi" to Matthew.
   c. Use corrective feedback to Tom's presentation.
   d. If Tom has difficulty in getting Matthew's response, Matthew's favored toys (e.g., lion, dragon, big green monster book) will be used to facilitate interaction.
   e. At least five opportunities will be provided for Tom to master the skills.

III. Maintenance

   a. Activities
      1. Greeting everyday
      2. Greeting can
      3. Specific Prompts: Discuss with Teacher

Evaluation:

   1. Direct Observation
   2. 10 minute audiotape
   3. Parent's notes
Lesson 2-Sharing

Goal: Share Materials

Objective: Students will share materials during 5-min. play sessions four out of five trials.

Materials: Three puppets (Ross Raccoon, Sara Bear, Shelli Squirrel); Posters 1, 2, 3 in Taking Part: Introducing social skills to children.

Time: 5-10 minutes

Procedure:

I. Motivation.
   a. Present animal script (Shelli Squirrel, Hank Hawk, Tanya Turtle).
      Shelli Squirrel: Give me that book, Hank! I want it!
      Hank Hawk: No, I want it.
      Shelli-Squirrel: Mine
      Hank Hawk: Mine
      Shelli Squirrel: Oh, no! Look what you did!! You made me rip the book in two!
      Hank Hawk: I did not make you do that! It is your fault!
      Tanya Turtle: My goodness, what's all the yelling? Have you two seen that nice new book the librarian left for us to look at? Oh, no! It is ripped in half.
      Shelli Squirrel: Hank made me do it!
      Hank Hawk: Shelli made me do it!
      Tanya Turtle: I think you two better learn about sharing-before any more books are ripped.
      Shelli Squirrel: Sharing? I wanted to read that book by myself.
      Hank Hawk: So did I.
      Tanya Turtle: Well, sharing means using materials with someone else. It is better to share than to fight and destroy things. You will feel a lot of better if you share. First you think of what you want to do.
      Hank Hawk: Read that book!
      Shelli Squirrel: Read that book!
      Tanya Turtle: and then you think of how you could do it together.
      How could you two have enjoyed that book together.
      Hank Hawk: Well, we could have sat together and looked at it. I could have read out loud while Shelli turned the pages.

      Tanya Turtle: Here is another book. Since you agree on a way to read together, how about trying it with this?
      Hank Hawk: Let's do that, Shelli.
Shelli Squirrel: Okay, Hank.
Tanya Turtle: You two have learned to share just in time.
Hank Hawk: What do you mean?
Tanya Turtle: Here comes the librarian. You are going to share the blame for ripping that book.

b. Present specific behavioral steps. Ask peer tutors to repeat the following steps.
   1. Think of what you want to do
   2. Think of how you can do it together
   3. Agree on a way
   4. Do it together

c. Models the skill.

d. Role-plays the target skill with peer tutors.

f. After peer tutors master 4 out of five consecutive trials, moves to the next practice sessions.

II. Practice

1. Tutee is introduced into the group.
2. Use corrective feedback to peer tutor’s presentation.
3. At least five opportunities will be provided for peer tutors to master the skills.

III. Maintenance

1. Sharing Materials everyday
2. Sharing Board
3. Sharing Literature
4. Specific Prompts: Discuss with Teacher

IV. Evaluation:

1. Direct Observation
2. 20-min. audiotape
3. Parent’s notes
Lesson 3

Taking Turns

Goal: Share Materials

Objective: Students will share materials during 5-min play sessions four out of five trials.

Materials: Three puppets (Ross Raccoon, Sara Bear, Shelli Squirrel); Posters 1, 2, 3 in Taking Part: Introducing social skills to children.

Time: 5-10 minutes

Procedure:

I. Motivation.
   a. Present animal script (Shelli Squirrel, Hank Hawk, Tanya Turtle).

   Will Rabbit: Oh, Hank, look. Here comes Felicia Fox to play kickball with us.
   Hank Hawk: Oh! It is no fun playing when she is here.
   Felicia Fox: Hi! Will! Hi! Hank! I just love to play kickball! Here I go!
   Will Rabbit: Felicia, you kicked the ball away from me just as I was swinging my foot back.
   Felicia Fox: Oh, yes! Isn't kicking ball fun?
   Will Rabbit: It is not when you are around, Felicia, I am going home.
   Hank Hawk: It is not fun when you play. I am going too.
   Felicia Fox: Wait! Don't go! I thought we were all having fun together!
   Hank Hawk: We do not have much fun when you are here.
   Whenever you see someone pitching, you run up and grab the ball. You run the bases with us, and you always want to kick. You do not take turns.
   Felicia Fox: Okay, I will take turns. What is "taking turns"?
   Will Rabbit: Taking turns is a way for everyone to get to play. We all like to be the kicker, but the game is no fun if everyone kicks and no one throws or catches.
   Hank Hawk: Before we start playing we decide when everyone will kick. We take turns. When we take turns, we find out when it is our turn, wait for our turn and play when it is our turn. That's fair, and we all feel good about it.
   Felicia Fox: But no body told when it is my turn to kick. Does that mean I do not get to play?
   Hank Hawk: No, you can play. But when you first come here you need to ask for your turn. Then we will tell you who kicks before you, and you can kick after they do.
Felicia Fox: But what do I do when someone else is kicking the ball?
Will Rabbit: We take turns throwing, catching, and playing the bases.
    When you are not kicking the ball, you can take turn at third base.

Hank Hawk: If you promise to wait your turn to kick, Felicia, I will stay
    here and play.
Felicia Fox: But when will my turn be?
Hank Hawk: We already agreed that Will would kick after me. You
can go after Will.
Felicia Fox: OK! I do not want everyone to go home. I will play third
    base and wait for my turn.
Will Rabbit: Fair enough, Felicia Fox! Hooray for you!

b. Present specific behavioral steps. Ask peer tutors to repeat the
    following steps.
    1. Find out when it is your turn.
    2. Wait for your turn.
    3. Play when it is your turn.
c. Models the skill.
d. Role-plays the target skill with peer tutors.
f. After peer tutors master 4 out of five consecutive trials, moves to the
    next practice sessions.

II. Practice
    a. Tutee is introduced into the group.
    b. Use corrective feedback to peer tutor's presentation.
    c. At least five opportunities will be provided for peer tutors to master
       the skills.

III. Maintenance
    a. Taking Turns everyday
    b. Taking Turns Wall
    c. Sharing Literature
    d. Specific Prompts: Discuss with Teacher

Evaluation:
    1. Direct Observation
    2. 20-min. audiotape
    3. Parent's notes
Lesson 4
Helping Others Participate

Goal: Help Others Participate

Objective: Students will help others participate during 5-min play sessions four out of five trials.

Materials: Three puppets (Ross Raccoon, Sara Bear, Shelli Squirrel); Posters 1, 2, 3 in Taking Part: Introducing social skills to children.

Time: 5-10 minutes

Procedure:

I. Motivation.
   a. Present animal script (Shelli Squirrel, Hank Hawk, Tanya Turtle).

Benny Frog: Hello, Ross. Why are you sitting by yourself? I just saw Sam Skunk and his friends playing a great game of Dragon.

Ross Raccoon: Yes, Sam and his friends play fun games every day. I always hear them laughing. But Sam says he does not want to play with me.

Benny Frog: I will go talk to Sam, Ross. You two need to be better friends.

Ross Raccoon: Okay, Thanks.

Benny Frog: Hi, Sam. Is your game over?

Sam Skunk: Hi, Benny. I would be like to play Dragon again, but all my friends had to go home.

Benny Frog: I just talk to Ross Raccoon, Sam. He would be like to play dragon with you.

Sam Skunk: Oh, no, I can not play with Ross. He is too slow. he runs in the wrong direction, and he is always spoiling our games. It is much better if he just sits and watches.

Benny Frog: But you really want to keep playing, don't you?

Sam Skunk: I sure do.

Benny Frog: Well, I can not play with you, but Ross is ready and willing. May be he does not play well because no one's ever helped him. If you helped him play, you would have more fun and you would also be a better friend to Ross.

Sam Skunk: You could be right. But how do I help him?

Benny Frog: First, ask Ross if he would like to play.

Sam Skunk: What else do I need to do?

Benny Frog: Show him how to play and say something nice about how he is playing.

Sam Skunk: I suppose I could do that.
Benny Frog: Right, here comes Ross, and he is feeling bad because you won't play with him.

Sam Skunk: Hi! Ross. Would you like to play dragon with me?
Ross Raccoon: Me, Sam? I thought you do not want to play with me.
Sam Skunk: Benny show me how to play with you. Ross, let's play dragon.

b. Present specific behavioral steps. Ask peer tutors to repeat the following steps.
1. Find out when it is your turn.
2. Wait for your turn.
3. Play when it is your turn.

c. Models the skill.

d. Role-plays the target skill with peer tutors.

f. After peer tutors master 4 out of five consecutive trials, moves to the next practice sessions.

II. Practice
a. Tutee is introduced into the group.

b. Use corrective feedback to peer tutor's presentation.

c. At least five opportunities will be provided for peer tutors to master the skills.

III. Maintenance

a. Activities
1. Taking Turns everyday
2. Taking Turns Wall
3. Sharing Literature
4. Specific Prompts: Discuss with Teacher

Evaluation:

1. Direct Observation
2. 20-min. audiotape
3. Parent's notes
Lesson Five
Offering and Giving Help

Goal: Help Others

Objective: Students will help others during 5-min play sessions four out of five trials.

Materials: Three puppets (Ross Raccoon, Sara Bear, Shelli Squirrel); Posters 1, 2, 3 in Taking Part: Introducing social skills to children.

Time: 5-10 minutes

Procedure:

I. Motivation.
   a. Present animal script (Shelli Squirrel, Benny Frog).

   I. Shelli Squirrel: Oh! Dear! oh, dear!
      Benny Frog: What is the matter, Shelli? Why you are so upset?
      Shelli Squirrel: I lost one of my new gloves. My mother will be very
      angry with me if I do not find it.
      Benny Frog: That is too bad. I am going to play ball with Will rabbit. I
      guess you can not come with me. Hope you find your glove.
      Shelli Squirrel: I would have liked to play with Will and Benny. But I
      have got to find my glove.

   II. Shelli Squirrel: Oh, dear, oh, dear!
       Benny Frog: What is the matter, Shelli? Why you are so upset?
       Shelli Squirrel: I lost one of my new gloves. My mother will be very
       angry with me if I do not find it.
       Benny Frog: That is too bad. Can I help you look for it? I was on my
       way to play ball with Will Rabbit, but I can do that later.
       Benny Frog: I will look over here.
       Shelli Squirrel: I will look over here.
       Benny Frog: What about by this.... Here it is! I found it.
       Shelli Squirrel: Oh! thank you! Benny! You are such a good friend.
       Benny Frog: You are welcome. Come with me to Wills. We can all
       play ball.

   b. Present specific behavioral steps. Ask peer tutors to repeat the
      following steps.
      1. Think about what people are doing
      2. Think of how you can do to help
3. Ask if you can help

c. Models the skill.
d. Role-plays the target skill with peer tutors.

II. Practice

a. Tutee is introduced into the group.
b. Use corrective feedback to peer tutor's presentation.
e. At least five opportunities will be provided for peer tutors to master the skills.

III. Maintenance

a. Activities
   1. Offering and giving help everyday
   2. Helping Hand
   3. Specific Prompts: Discuss with Teacher

Evaluation:

1. Direct Observation
2. 10-minute audiotape
3. Parent's notes
Appendix E. Teacher's Prompts
Lesson 1-Greeting

For Pair 1 (Tom & Matthew)

<table>
<thead>
<tr>
<th>Activity Context</th>
<th>Teacher's Prompt</th>
<th>Child Interactive Response</th>
<th>Specific Praise/Stickers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arrival time:</strong> Tom is hanging up his coat and bookbag.</td>
<td>&quot;Tom! Did you say &quot;Hi&quot; to Matthew?&quot;</td>
<td>Tom goes over to Matthew and says &quot;Hi! Matthew!&quot;.</td>
<td>&quot;Good Job! Tom!&quot; &quot;I like the way you say &quot;Hi&quot; to Matthew&quot; and here is your sticker.</td>
</tr>
<tr>
<td><strong>Circle Time:</strong> Tom sits in the circle-Teacher asks &quot;who is here today?&quot; &quot;Matthew&quot;</td>
<td>&quot;Tom! Did you say &quot;Hi&quot; to Matthew?&quot; &quot;He is here today.&quot;</td>
<td>Tom looks at Matthew and says &quot;Hi&quot;.</td>
<td>&quot;Tom! That is nice to say &quot;Hi&quot; to your friend. &quot;Here is your sticker!&quot;</td>
</tr>
<tr>
<td><strong>Play Time:</strong> Tom is playing by himself.</td>
<td>&quot;Tom! Did you say &quot;Hi&quot; to Matthew and asks him to play with you.</td>
<td>Tom goes over to Matthew and says &quot;Let's play puzzle.&quot;</td>
<td>&quot;Tom! That is a nice way of asking your friend to play!&quot; &quot;Here is your sticker!&quot;</td>
</tr>
<tr>
<td><strong>Play Time:</strong> Tom is playing blocks by himself. Matthew is watching him near by.</td>
<td>&quot;Tom! Would you share your blocks with Matthew?&quot;</td>
<td>Tom hands over a block to Matthew and says &quot;Let's play!&quot;</td>
<td>&quot;Tom!! That is nice sharing!!&quot; &quot;Here is your sticker!&quot;</td>
</tr>
<tr>
<td><strong>Play Time:</strong> Tom is reading a book by himself.</td>
<td>&quot;Tom! Please ask Matthew to read together!&quot;</td>
<td>Tom goes over to Matthew and asks &quot;Hi! Matthew! Let's read!&quot;</td>
<td>&quot;Good Job! Tom! You are such a good player with your friend!!&quot;</td>
</tr>
</tbody>
</table>
Appendix F. Parent Note
Dear Parent:

Today, we are learning about "greeting" others. We want your child to perform the following steps: (a) look in the person's eyes, (b) smile, (c) say "Hi" in a friendly voice. We are proud that he or she is able to do the skill in the following classroom activities. The block activities that contain the stickers are the ones that your child can do without any help. Please do not forget to applaud your child when you review the note with him/her. Blocks without stickers mean that we are still working on the skill during these activities. We will also appreciate your help in practicing the skill at home. Please feel free to write your comments regarding your child's performance at home. Let me know if you have any questions. My telephone number is 481-9826. Thanks for your cooperation. Chu-Sui Lin

<table>
<thead>
<tr>
<th>Activity</th>
<th>Stickers</th>
<th>Teacher Comments</th>
<th>Parent Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival Time- (9:00-9:30)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Circle Time (9:30-9:50)</td>
<td></td>
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<tr>
<td>Social skills Training (10:00-10:15)</td>
<td></td>
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<tr>
<td>Free Play (10:20-10:50)</td>
<td></td>
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<tr>
<td>Meal Time (11:00-11:20)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Leaving Time (11:20-11:30)</td>
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</tbody>
</table>
Dear Parent:

We started our social skills intervention about two weeks ago. Your child-David, has been chosen as one of the participants. We have incorporated the other youngster-Steve as his play partner. Every morning we practice specific social skills such as (a) sharing and (b) turn-taking. We are really pleased that David can stay in the group longer and longer and we even found him start his verbal initiation "I want to play truck!" without our prompts. We found that through peer interaction and modeling, his language is coming out more and more, and even more clear.

In order to let you know more about this social skills intervention, we develop this note to keep track of his progress throughout the school day. The block activities that contain the stickers are the ones that David share or taking turns in playing with his partner or the other children. Please do not forget to applaud your child when you review the note with him/her. Block activities without stickers represent that we are still working on the skill during those activities. We will also appreciate your help in practicing the skill at home. Let me know if you have any questions, my telephone number is 481-9826. Thanks for your cooperation.

Chu-Sui Lin

<table>
<thead>
<tr>
<th>Activity</th>
<th>Stickers</th>
<th>Teacher Comments</th>
<th>Parent Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social skills Training</td>
<td></td>
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<tr>
<td>Free Play</td>
<td></td>
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<tr>
<td>Other</td>
<td></td>
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<td></td>
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</table>
Appendix G. Self-Evaluation Checklist-Teacher Prompts
<table>
<thead>
<tr>
<th>Activity / Date</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snack</td>
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<tr>
<td>Times Try</td>
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<tr>
<td>Success</td>
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<tr>
<td>Success</td>
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<tr>
<td>Circle Time</td>
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<tr>
<td>Times Try</td>
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<tr>
<td>Success</td>
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<td>Success</td>
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<tr>
<td>Non-teacher directed activity</td>
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<tr>
<td>Times Try</td>
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<tr>
<td>Success</td>
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<td>Success</td>
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<tr>
<td>Meals/Lunch/Breakfast</td>
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<tr>
<td>Times Try</td>
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<tr>
<td>Success</td>
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<tr>
<td>Success</td>
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<tr>
<td>Other</td>
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<tr>
<td>Times Try</td>
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<tr>
<td>Success</td>
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<td>Success</td>
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<tr>
<td>Total</td>
<td>172</td>
<td></td>
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</tr>
</tbody>
</table>
Appendix H. Procedural Integrity
I. Motivation
   1. The instructor uses puppets in motivating the child in the significance of a particular social skill. Yes No NA
   2. The instructor presents the specific behavioral steps of each skill for the child. Yes No NA
   3. The instructor models the desired skill Yes No NA
   4. The instructor uses the puppets to role-play the target skill with the child. Yes No NA
   5. The instructor provides at least five opportunities for the child to master the skill. Yes No NA

II. Practice
   1. The tutee is introduced into the group. Yes No NA
   2. The instructor stays with the tutee and peer tutor throughout 5-minute play activity. Yes No NA
   3. The instructor uses corrective feedback about the peer tutor's presentation. Yes No NA
   4. The instructor uses tutee's favored toy to facilitate interaction. Yes No NA
   5. The instructor provides at least five opportunities for the child to master the skill. Yes No NA

III. Maintenance
   1. Maintenance activities are delivered as they are planned. Yes N NA
   2. Specific prompts are used to remind the peer tutor of the learned skills. When________ Yes No NA
   3. Specific praise statements are used to reinforce the peer tutor of the learned skills. Yes No NA
   4. Taking Part stickers are used to reinforce the peer tutor of the learned skills. Yes No NA
   5. Parent's note is sent home on daily basis. Yes No NA

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Appendix I. Social Validation Questionnaire
Parent Form

Child’s Name: ____________    Date: ____________

This questionnaire consists of 10 items. For each item, you need to indicate the extent to which you agree or disagree with each statement. There are four possible responses: Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA). Please indicate your response to each item by circling one of the five responses to the right.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I noticed changes in my child’s social communication skills after training.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>2. Social skills instruction is helpful in improving my child’s social communication skills.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>3. My child does not like social skills training.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>4. My child communicates more at home.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>5. Social skills need to be taught at home.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>6. Parents should be partners with teachers in teaching children social skills.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>7. I like to read the parent notes on my child’s progress in social skills instruction at school.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>8. I would like my child to continue on social skills training sessions.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>9. My child plays more with other children.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>10. My child’s problem behavior (e.g., fighting) decreased after social skills instructions.</td>
<td>SD D A SA</td>
</tr>
</tbody>
</table>
Teacher Form

Child's Name: ____________  Date: ____________

This questionnaire consists of 10 items. For each item, you need to indicate the extent to which you agree or disagree with each statement. There are four possible responses: Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA). Please indicate your response to each item by circling one of the five responses to the right.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Peer-mediated social skills training are effective for improving social skills of preschool children with special needs.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>2. I noticed changes in four peer tutors' social communication skills after training.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>3. I noticed changes in four tutee's social communication skills after training.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>4. Social skills training is easy to implement in my class.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>5. The materials used are appropriate to the peer tutors' developmental levels.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>6. The students who participate in this study communicates more after social skills instructions.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>7. Social skills need to be taught at school.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>8. Social skills training helps to increase the student's appropriate social behaviors.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>9. I would like to continue on social skills training sessions in my class.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>10. The students participate in this study decrease their negative play initiations after social skills instructions.</td>
<td>SD D A SA</td>
</tr>
<tr>
<td>11. I enjoyed in participating in this research project.</td>
<td>SD D A SA</td>
</tr>
</tbody>
</table>
Appendix J  Sample Items in Social Skills Rating System Questionnaires
Sample Items in the Teacher Form

I. Social Skills
   A. Cooperation
      a. Introduce self
      b. Joins group
      c. Finishes assignments
      d. Uses free time
      e. Participates in games
      f. Follows directions
      g. Attempts tasks
      h. Uses time while awaiting help
      i. Puts work away
      j. Produces correct work

   B. Assertion
      a. Invites others
      b. Says nice things about self
      c. Initiates conversations with peers
      d. Gives compliments
      e. Makes friends
      f. Volunteers to help others
      g. Tells you when treated unfairly
      h. Helps you
      i. Questions unfair rules

   C. Self-Control
      a. Controls temper with peers
      b. Controls temper with adults
      c. Waits turns
      d. Accepts peers' ideas
      e. Cooperate with peers
      f. Responds appropriately to teasing
      g. Compromises in conflicts
      h. Receives criticism well
      i. Follows rules in games
      j. Responds appropriately to peer pressure

II. Problem Behaviors

   A. Externalizing
      a. Disturbs activities
      b. Is aggressive
      c. Disobey others
d. Argues with others  
e. Fidgets  
f. Has temper tantrums

B. Internalizing  
a. Appears lonely  
b. Acts sad  
c. Shows anxiety  
d. Says nobody likes him or her
Sample Items in the Parent Form

I. Social Skills

A. Cooperation
   a. Puts away toys
   b. Keeps room clean
   c. Helps with tasks
   d. Attempts household tasks
   e. Complete tasks
   f. Volunteers help
   g. Communicates problems
   h. Congratulates family
   i. Follows rules
   j. Uses free time

B. Assertion
   a. Makes friends
   b. Shows interest in things
   c. Is self-confident
   d. Is liked by others
   e. Starts conversations
   f. Joins group activities
   g. Receives criticism well
   h. Introduces self
   i. Express feelings when wronged
   j. Participates in activities

C. Responsibility
   a. Questions unfair rules
   b. Invites others home
   c. Attends to speakers
   d. Asks clerks for assistance
   e. Asks to use others' property
   f. Answer phone appropriately
   g. Refuse unreasonable requests

D. Self-Control
   a. Controls temper with you
   b. Ends disagreements calmly
   c. Controls temper with children
   d. Attends to instructions
   e. Follows game rules
   f. Waits turn in games
II. Problem Behaviors

A. Externalizing
   a. Disturb activities
   b. Has temper tantrums
   c. Argues with others
   d. Disobeys rules
   e. Fidgets
   f. Is aggressive

B. Internalizing
   a. Shows anxiety
   b. Acts sad or depressed
   c. Appears lonely
   d. Says nobody likes him or her