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**A comparison of single and combined social interaction interventions to increase the social interaction of preschool children in inclusive settings**

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**A COMPARISON OF SINGLE AND COMBINED SOCIAL INTERACTION  
INTERVENTIONS TO INCREASE THE SOCIAL INTERACTION  
OF PRESCHOOL CHILDREN IN INCLUSIVE SETTINGS**

by

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**A dissertation submitted in partial fulfillment  
of the requirements for the**

**Doctor of Philosophy Degree in Special Education  
Department of Special Education  
College of Education**

**Graduate College  
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Doctor of Philosophy of Special Education

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## ABSTRACT

### **A Comparison of Single and Combined Social Interaction Interventions to Increase the Social Interactions of Preschool Children in Inclusive Settings.**

by

Judith Terpstra

Dr. Kyle Higgins, Examination Committee Chair  
Professor of Special Education  
University of Nevada Las Vegas

Many young children with disabilities are being educated in inclusive preschool settings. Social competence for these children is often less than that of their peers and the typical children in the inclusive setting usually are not aware of appropriate methods for interacting with children with disabilities. Research concerning effective methods to increase the social interactions between children with and without disabilities is needed to ensure successful educational experiences for children with and without disabilities in these settings.

This study investigated the difference between the use of a single social interaction strategy and the use of a combined social interaction strategy for preschool children with and without disabilities in an inclusive setting. The study compared triads of children with and without disabilities who participated in either a single intervention condition or a combined intervention condition. Play sessions were videotaped for the purpose of analyzing the social interaction behaviors of the children. Pre- and post-measures of the

childrens' social skills and observation of social interactions during the play sessions in the study were analyzed using statistical tests. The frequencies of the social interactions of the children with and without disabilities in the two groups were compared and the social interaction behaviors of the children with disabilities in the two groups were compared.

In this study the teachers perceived that the children with and without disabilities improved in the use of four social skills (e. g., joining in, waiting your turn, sharing, asking someone to play) across the phases, although there was no significant difference between the intervention groups. The children with and without disabilities demonstrated an increase in the frequency of social interaction behaviors, although there was no significant difference between the intervention groups. The children with disabilities demonstrated an increase in effective social behaviors and a decrease in ineffective social behaviors across phases of the study, although there was no significant difference between the intervention groups. All of the children in the study exhibited few negative social behaviors during the play sessions of the study.

## TABLE OF CONTENTS

ABSTRACT.....	ii
LIST OF TABLES .....	viii
ACKNOWLEDGEMENTS.....	ix
CHAPTER 1 INTRODUCTION .....	1
Social Skill Development in Young Children.....	2
Social Skills Development in Inclusive Environments .....	4
Strategies to Facilitate Social Skills Development.....	5
Statement of the Problem.....	11
Significance of the Study .....	12
Definitions.....	14
Limitations .....	18
Summary .....	19
CHAPTER 2 REVIEW OF RELATED LITERATURE .....	20
Introduction.....	20
Social Interaction of Young Children.....	20
Interventions for Increasing Social Interactions.....	38
Summary .....	65
CHAPTER 3 METHODOLOGY .....	67
Overview.....	67
Research Questions .....	69
Participants.....	70
Setting .....	75
Instrumentation.....	76
Materials .....	78
Training.....	79
Play Sessions.....	84
Design and Procedures .....	85
Data Collection.....	91
Treatment of the Data.....	91
CHAPTER 4 RESULTS.....	93
Interrater Reliability .....	94
Social Interaction Observation System.....	96

Social Interaction Frequency Count .....	103
Teacher/Staff Skillstreaming Checklist .....	107
<b>CHAPTER 5 DISCUSSION.....</b>	<b>110</b>
Effective and Ineffective Social Behaviors of Children with Disabilities as a Result of Single or Combined Social Interaction Intervention .....	112
Frequency of Social Interactions of Children with and without Disabilities as a Result of Single or Combined Social Interaction Intervention.....	116
Preschool Teachers' Perceptions of the Social Skills of the Children with and without Disabilities .....	118
Conclusions .....	120
Recommendations for Further Study.....	122
Summary .....	123
<hr/>	
<b>APPENDICIES</b>	
APPENDIX A Grouping Chart.....	127
APPENDIX B Parental Consent Form.....	128
APPENDIX C Teacher Consent Form .....	132
APPENDIX D Teacher/Staff Skillstreaming Checklist .....	136
APPENDIX E Social Interaction Observation System .....	139
APPENDIX F Social Interaction Frequency Count .....	144
APPENDIX G Permission to Use Teacher/Staff Skillstreaming Checklist .....	145
APPENDIX H Permission to Use Social Interaction Observation System.....	147
APPENDIX I Social Skills Lesson Format .....	149
APPENDIX J Social Skills Steps .....	150
APPENDIX K Training Schedule.....	152
APPENDIX L Figures for Social Interaction Observation System .....	153
APPENDIX M Figures for Social Interaction Frequency Count .....	171
APPENDIX N Figures for Teacher/Staff Skillstreaming Checklist .....	180
<b>REFERENCES.....</b>	<b>185</b>
<b>VITA.....</b>	<b>193</b>



## LIST OF TABLES

Table 1	Demographics of Children with Disabilities by Classroom.....	72
Table 2	Demographics of Children without Disabilities by Classroom.....	73
Table 3	Demographics of the Preschool Teachers .....	74
Table 4	Triads of Children.....	88
Table 5	Interrater reliability for SIOS .....	95
Table 6	Interrater Reliability for the Interaction Frequency Count .....	96
Table 7	Summary of ANOVAs for the SIOS .....	99
Table 8	Summary of ANOVAs for the SIOS-Individual Effective and Ineffective Behaviors.....	101
Table 9	Summary of ANOVAs for Social Interaction Frequency Count.....	106
Table 10	Summary of ANOVAs for Teacher/Staff Skillstreaming Checklist.....	109

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## CHAPTER 1

### INTRODUCTION

Young children learn many skills through play and social interactions with their peers. Skills such as understanding social roles, sharing, communicating, and appropriate responding to situations are learned in this manner. Children with disabilities who are included in an integrated preschool setting have the opportunity to interact with children without disabilities. Through this experience they engage in interactions during which they have the opportunity to acquire many important skills. However, simply providing children with disabilities the opportunity to interact with typically developing peers often is not sufficient for meaningful interaction to occur (Hundert & Houghton, 1992; Roberts, Pratt, & Leach, 1991). Early childhood professionals have found that specific training for children with and without disabilities is necessary before children engage in meaningful interactions in integrated settings (Haring & Lovinger, 1989; Hundert & Houghton, 1992; Hwang & Hughes, 1995; Goldstein, English, Shafer, & Kaczmarek, 1997; Kamps et al., 1998; Odom, et al., 1999).

Research related to increasing interactions between children with and without disabilities often focuses on social interaction skills training for either the children with disabilities or the children without disabilities. Typically, the focus of the social skills training is to teach initiation and/or response to one child or group of children in order to benefit a child or group of children with disabilities. This focus is necessary because

without intervention the typical children tend to interact with peers similar to themselves and not with the children with disabilities (Goldstein, Kaczmarek, Pennington, & Schafer, 1992; Hanline, 1993).

### Social Skill Development in Young Children

Children demonstrate their social competence through their use of social skills in social interactions with peers (Odom & Diamond, 1998). Social competence is the manner in which “individuals define and solve the most fundamental problems in human relationships” (Guralnick & Neville, 1997, p. 579). A child’s social competence is an important indicator for later development and may be a predictor of social adjustment problems through adolescence (Odom & Diamond, 1998).

#### *Social Skill Development in Typical Children*

Young children begin to show an interest in their peers from birth to 1-year-old and these social behaviors increase in frequency and complexity as they grow older (Lieber, Beckman, & Strong, 1993). Social skill development occurs in typical young children with guidance and modeling from parents and teachers and evolves with little need for direct instruction. For children with disabilities, this does not always occur.

During the preschool years, the development of children changes rapidly. There is growth in the areas of verbal and cognitive skills, behavioral control, problem solving and expressive communication (Malone, 1997). Children also develop in the area of play. Young preschoolers often are engaged in parallel play with peers while older preschoolers transition to independent or interactive/cooperative play (McGinnis & Goldstein, 2003).

Researchers have identified specific independent mastery skills as important for predicting successful adjustment of typically developing children in kindergarten. These include performing independently of the teacher, working alone, making successful transitions between activities with little guidance (Hauser-Cram, Bronson, & Upshur, 1993). All of these skills require the use of specific social skills to be successful. In addition, children who demonstrate independent mastery skills and successful peer interactions skills have fewer school-related problems through second grade (Hauser-Cram et al., 1993).

#### *Social Skill Development in Children with Disabilities*

Children with disabilities tend to be weak in social skills and are not well accepted by children without disabilities (Gresham, 1982, Goldstein et al., 1997, Odom et al., 1999). Preschoolers with disabilities often engage in fewer social interactions and less mature social behaviors than children without disabilities of the same age (Odom et al.). These children may occupy a lower social status in the inclusive classroom than their peers without disabilities, including being the least preferred members of the playgroup (Hall, 1994). In classrooms with a high ratio of typical children to children with disabilities, the children with disabilities engage in more interactions than children with disabilities in classrooms with lower ratios (Hauser-Cram et al., 1993). However, children with disabilities usually exhibit more social skills deficits than their same-aged typical peers in these interactions (Guralnick, 1990). This may include a lack of skills in initiating and maintaining interactions (Hanline, 1993).

Including social interaction and social skills curricula is important in an inclusive environment. Leiber, Beckman, and Strong (1993) found that the social interactions of

children with disabilities did not increase significantly when children were monitored over time. In a sixteen month study they found that the amount of time children with disabilities engaged in social interaction started low and remained low without intervention.

### Social Skills Development in Inclusive Environments

As a result of special education laws, such as the Individuals with Disabilities Education Act 1997 (IDEA, 1997), more children with disabilities are being included in the general education environment. In an inclusive educational program, children with disabilities are placed in a setting with typically developing peers who can serve as same-aged models with whom they can interact and learn (Grubbs & Niemeier, 1999). However, the placement of students with disabilities into a general education setting does not result automatically in increased social interactions between the children with and without disabilities (Roberts, Pratt, & Leach, 1991). Effective interventions to increase the social interactions between children with and without disabilities must be developed and implemented in these settings for both groups of children to socially benefit.

Research indicates that the inclusion of children with disabilities into neighborhood day cares and preschools with typical children can be beneficial for the children with disabilities in many areas, including social interaction and social skills. Odom and Diamond (1998) found that interactions between children with and without disabilities occur more frequently in inclusive settings than in non-inclusive settings. Hauser-Cram, Bronson, and Upshur (1993) established that children with disabilities in inclusive classrooms, that contained a high proportion of typical children, engaged in more

interactions than children with disabilities in settings with fewer typical peers. Results of a study by Guralnick, Connor, Hammond, Gottman, and Kinnish (1995) indicated that children with and without developmental delays are more interactive with peers in inclusive settings. Research also has shown that social development and interaction of typical children seems to be unaffected by including children with disabilities in educational settings (Guralnick et al., 1995). However, Hanline (1993) found that typical children choose other typical children for communication opportunities, for play activities, and to sit near during classroom activities more often than they choose children with disabilities. Thus, simple contact or exposure does not result in more positive attitudes or more social acceptance of children with disabilities (Roberts et al, 1991).

#### Strategies to Facilitate Social Skills Development

Children with disabilities often demonstrate lower rates of social interaction, including social initiation, social response, and the use of appropriate social skills than their typical peers (Peterson & McConnell, 1993). Specific methods must be implemented in the inclusive classroom to encourage higher levels of social interaction, including environmental arrangements, imitation of peers, teacher prompting, group affection strategies, peer-mediated intervention, and correspondence training in order to foster social skills development and interaction (Lowenthal, 1996).

Odom, McConnell, & Chandler (1993) describe three types of intervention that may be used to promote social interaction in inclusive educational settings. These interventions include environmental arrangements, child specific interventions, and peer-mediated interventions. Environmental arrangements include restricting children to an

area of the classroom where play activities occur, providing materials and activities that encourage social interaction, and providing a peer group that is socially competent (Odom et al., 1993). Child specific interventions include specific training for the children with disabilities. This includes teaching social skills and social interaction strategies (e. g., initiation, response, and problem-solving) along with teacher prompting to use the skills and reinforcement for use of the skills in appropriate interactions (Odom et al.). Also discussed are peer-mediated interventions in which the teacher provides strategies to the typical children so they initiate interactions with the children with disabilities as well as respond to or reinforce the interactions of the children with disabilities (Odom et al.).

A model that includes adult mediation, child repertoire, and social ecology as well as peer skills, supports, and expectations is discussed by Schwartz (2000). This model incorporates various methods of supporting social interactions between children instead of instructing one child in methods of initiation or response. The focus of the model is on implementation in natural environments and inclusive settings and also considers cultural differences, sustainability, available resources, and practicality for teachers.

#### *Children without Disabilities as a Social Interaction Agent*

When typical children engage in play activities in integrated and segregated settings, they tend to do so with other typical children (Hanline, 1993). This results in their learning appropriate social and behavioral skills from one another (Leiber, Beckman & Strong, 1993; Odom et al., 1999). Children who do not engage in play with their peers often lack the variety of experiences learned during this time (Odom et al., 1999). Even though children with disabilities may avoid social situations and interactions with peers (Belchic & Harris, 1994), they interact more frequently with the other children (typical



peers or other children with disabilities) in integrated settings than in nonintegrated settings (Goldstein et al., 1992).

Training typical children to interact with children with disabilities is an appropriate use of instructional time in an integrated classroom (Snyder, Apolloni & Cooke, 1977). In inclusive settings, typical children are more likely to play with other typical children if an intervention is not implemented (Goldstein, et al., 1992). Directly training typical peers to engage in social/play interactions with children with disabilities is an effective method to improve social interaction in integrated settings (Goldstein et al.).

Thus, it is beneficial to allocate instructional time to teach typically developing children about interacting with and relating to children with disabilities (Snyder et al., 1977). The children without disabilities can be taught to interact, initiate, reinforce, and prompt the children with disabilities so that they engage in positive social interactions and appropriate play (Belchic & Harris, 1994; Goldstein & Cisar, 1992; Pierce & Schreibman, 1995). The process to encourage children without disabilities to engage socially with children with disabilities can be accomplished using a variety of methods.

When implementing peer initiation interventions, consideration must be given to the selection of the specific peer initiations (e.g., training for specific types of initiation or situation), arrangement of the physical environment to promote interaction, training peers to initiate interactions, and conducting daily training situations (Strain & Odom, 1986). Goldstein, et al. (1992) developed peer-mediated intervention strategies to increase social behaviors between children with and without autism. The goal of the strategy was to increase the social behaviors of the children with autism by teaching the typical children to initiate interactions with them and respond to their social behaviors. This strategy

provided the children with autism opportunities to respond to the initiations and reinforced their attempted social behaviors when the typical children responded (Goldstein, et al.).

Another peer-mediated intervention is the Stay-Play-Talk strategy developed by Goldstein, English, Shafer and Kaczmarek (1995). This strategy was taught to the typical peers in an inclusive preschool setting and the children were encouraged to use the strategy in many situations across the day. The children were trained in an empty classroom and received sensitization training concerning children with disabilities and various communicative techniques that children with disabilities might use (e. g., American Sign Language, picture/symbol systems, augmentative communication, verbal communication, physical gestures/pointing). Through Stay-Play-Talk children were taught strategies to stay close to their buddy, invite their buddy to join an activity, or bring over a toy to play with their buddy with a disability (Stay and Play portion of the strategy). Typical peers also were instructed to Talk to their buddy, interact and communicate about toys and activities, and also to respond to the communicative attempts of their buddy with a disability. The children without disabilities practiced the steps with adult modeling and received positive reinforcement until mastery was demonstrated. The typical children then practiced the three steps of the strategy (Stay-Play-Talk) in their classroom with the children with disabilities. They received prompting assistance from their teacher as they implemented the strategy. The assistance was faded as soon as the typical children were competent in using the strategy on their own. The children without disabilities were encouraged to use the interaction strategy as often as possible throughout the day (Goldstein et al., 1995).

The effectiveness of the Stay-Play-Talk strategy was evaluated by Goldstein, et al. (1997) in a two-year study conducted in an integrated preschool classroom. A different group of children participated in each of the two years of the study. The results indicated that children without disabilities increased the frequency of interaction with the children with disabilities and the children with disabilities increased the frequency of interaction with their typical classmates. These results occurred in both groups of children who participated in the study and demonstrated the effectiveness of this intervention as a method of increasing interactions among children with and without disabilities in inclusive settings (Goldstein et al., 1997).

As with all areas of instruction for children with disabilities, generalization of interaction and social skills is critical (Hundert & Houghton, 1992). A child must be able to perform the skill in multiple settings with multiple individuals for the skill to be effective. A concern raised in the research literature related to social interaction and social skills training involves generalization. The focus of training should be on instruction that results in the continual, appropriate use of the skills in multiple situations once training is completed (Hundert & Houghton, 1992). The more natural the training situation (e.g., in an actual setting, the use of multiple groups of peers) the more generalization will be successful (Baker, Koegel & Koegel, 1998; Belchic & Harris, 1994). The natural training setting for a preschool student is generally the child's assigned classroom with the other children who are assigned to that classroom. This means that the children involved should be, at the very least, familiar with the children who are included in the interaction training (Fundis, 1981). In the research conducted by

Goldstein et al. (1997), the children had 10 or more weeks to get to know each other before the study began.

### *Teaching Social Skills as a Method to Increase Social Interactions*

Strain & Odom (1986) discussed several critical reasons for teaching social skills and social interactions to children with disabilities. These include the fact that social skill deficits are seen in all categories of children with special needs. They also indicated that social skill deficits tend to become more severe as children get older if no intervention is implemented. This absence of social skills also can affect the development of intellect, language, and related skills. It appears that social skill deficiencies seen in childhood can be a predictor of adjustment problems later in life (Strain & Odom, 1986).

Throughout the literature, researchers have demonstrated that the simple inclusion of children with disabilities in settings with typical children is not enough to ensure social interactions between children with and without disabilities (Grubbs & Niemyer, 1999; Hanline, 1993; Goldstein et al., 1995). Children with disabilities must be taught the needed interactive social skills for acceptance to occur in their inclusive classrooms (Gresham, 1982). Gresham (1982) identified three methods to conduct social skills training. These methods are the manipulation of antecedents, manipulation of consequences, and modeling.

Social skills instruction that uses modeling as the teaching format must be presented in a structured format (McGinnis & Goldstein, 2003). However, children with disabilities cannot be expected to simply demonstrate appropriate social skills through the observation of typical peers. Modeling can be used as a teaching format either with live models or video examples. Children with disabilities can imitate appropriate social

modeling as long as the modeling examples are appropriate, well planned, and sequenced (Gresham, 1982).

Even young preschool children can benefit from social skills instruction (McGinnis & Goldstein, 2003). Children with a variety of disabilities can be taught social skills to enhance their lives, increase independence, and increase interactions and relationships with others (McGinnis & Goldstein, 2003). Skillstreaming is an example of a social skills training program that has been developed and revised by McGinnis & Goldstein (2003). This program includes four principles of direction instruction, including modeling, role-playing, performance feedback, and generalization. It focuses on a model of skill deficits to teach the children specific skills that they have not yet acquired. Planned instruction and skill-based strategies can be taught to children in acceptable and rewarding methods to facilitate relationships and school readiness (McGinnis & Goldstein, 2003).

#### Statement of the Problem

Children with and without disabilities can benefit from social interaction training and social skills training in the inclusive classroom (Grubbs & Niemeyer, 1999; Lowenthal, 1996). Strategy training, or the use of curricula that focus on social skills, is necessary to increase social interaction among children in an inclusive setting (Goldstein, et al., 1995). This study will teach a social interaction strategy, Stay-Play-Talk (Goldstein, et al., 1995) to children without disabilities and pair that strategy with social skills lessons from the *Skillstreaming in Early Childhood* program (McGinnis & Goldstein, 2003), taught to both children with and without disabilities to increase the frequency, duration, and quality of the social interactions among the children in an inclusive preschool setting.

Specifically, the following questions will be addressed:

Research Question 1: Do the children with disabilities in the combined intervention group have more effective and less ineffective social behaviors than the children with disabilities in the single intervention group as measured by the Social Interaction Observation System (Kreimeyer, et al., 1991) across phases?

Research Question 2: Will the combined intervention (e. g., interaction strategy training and social skills training) increase the frequency of interactions between the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the social interaction frequency count?

Research Question 3: Will the combined intervention (e. g., interaction strategy training and social skills training) increase the use of social skills behaviors of the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the Teacher/Staff Skillstreaming Checklist?

### Significance of the Study

Because social interaction is a necessary component for children to learn from the educational opportunities provided in an inclusive setting, more research is needed concerning the social interactions of children with and without disabilities in this environment. This includes observational learning, social reinforcement, and the formation of friendships (Guralnick et al., 1985). The need for effective strategies to be accessible to teachers is an essential part of the development of these interventions. In a

study by Odom, McConnell & Chandler (1993), 131 preschool special education teachers indicated that 74% of the children in their classes could benefit from social skills instruction. Of the 131 teachers, 90% indicated that there was a great or moderate need for curricular materials as well as information related to social interaction instructional programs.

There is limited research on teaching both children with and without disabilities interventions to increase social interactions. Most research studies in the literature focus on teaching interaction strategies to the children without disabilities for them to use to initiate and respond to the children with disabilities in their classrooms (Goldstein et al., 1997; Strain & Odom, 1986; Odom et al., 1999; Odom, Strain, Karger & Smith, 1986). Other research studies focus on teaching social skills to the children with disabilities so that they can improve their interactive attempts with other individuals (Odom et al.; Haring & Lovinger, 1989; Kohler, Anthony, Steighner, & Hoyson, 2001).

The findings of this study will contribute to the knowledge-base of effective strategies concerning: (a) social interaction of preschoolers in inclusive classrooms, (b) the use of strategy training to increase social interactions, and (c) the use of social skills instruction to increase social interactions. In this study, the effectiveness of an interaction strategy taught to the children without disabilities and an interaction strategy combined with social skills instruction will be compared. The frequency of effective and ineffective interaction behaviors will be examined along with the perceptions of the classroom teachers related to the social skills abilities of the children with and without disabilities involved in the study.

## Definitions

*Children With Disabilities.* Children with disabilities are students who are eligible for special education services and who have current Individualized Education Programs (IEP).

*Children Without Disabilities.* Children without disabilities are students who are not eligible for special education services and who do not have a current Individualized Education Program (IEP).

*Combined Intervention Group.* The typical children in this intervention group will receive social interaction strategy training using the Stay-Play-Talk strategy (Goldstein et al., 1995) and social skills training based on *Skillstreaming in Early Childhood* (McGinnis & Goldstein, 2003). The children with disabilities in this group will receive social skills training based on *Skillstreaming in Early Childhood* (McGinnis & Goldstein, 2003).

*Effective Social Interaction Behaviors.* Effective behaviors include positive interactions, parallel play, associative and/or cooperative play, positive linguistic interaction, interaction initiations, and positive responses to peers (Kreimeyer et al., 1991).

*Frequency Interaction Count.* A data collection system for single subject analysis that records the frequency of a child's interactions during a specified time period. The interactions are recorded as either positive (+) or negative (-) with anecdotal comments to indicate the type of interaction that occurred (Goldstein et al., 1995).

*Inclusive Classroom.* A classroom that includes both students with disabilities who have Individualized Education Plans (IEPs) and typical students. The students with



disabilities receive all of their specialized instruction and related services (e. g., speech and language therapy, occupational therapy, physical therapy) in the same environment in which all of the children are educated.

*Ineffective Social Interaction Behaviors.* Ineffective behaviors include negative behaviors, nonplay behavior, solitary play, negative responses to peers, and no response to peers (Kreimeyer et al., 1991).

*Interaction Strategy Training.* The strategy training is a social-interaction intervention based on the Stay-Play-Talk strategy (Goldstein et al., 1995). The children without disabilities are taught the three steps of the strategy, provided opportunities to practice the steps of the strategy, and implement the strategy in their classrooms with the children with disabilities.

*Modeling Prompt.* A physical demonstration by an adult of the task or steps of an activity that is being taught to a child.

*Play Sessions.* A 15-minute play session conducted four times per week during which the children were videotaped for data collection. Materials in this play session varied weekly (e. g., blocks, housekeeping, cars, sand table). Play sessions were held during the baseline phase, the intervention phase, and the maintenance phase.

*Preschool-aged children.* Children between the ages of three and five-years-old who attend a child development center for a half or full-day session three-to-five days per week.

*Preschool Classroom Teachers.* The teacher who is regularly assigned to each of three classrooms participating in this study.

*Single Intervention Group.* The typical children in this intervention group will receive social interaction strategy training using the Stay-Play-Talk strategy (Goldstein et al., 1995). The children with disabilities in this group did not receive any formal training.

*Social Interaction.* Social interactions are interactions between the child with the disability and the child without the disability. The social interactions were identified and measured through the use of the Social Interaction Observation System (SIOS) (Kreimeyer et al., 1991).

*Social Interaction Observation System* (Kreimeyer et al., 1991). A data collection system to identify effective and ineffective behaviors and interactions between children (e. g., effective behaviors include positive interactions, parallel play, associative and/or cooperative play, positive linguistic interaction, interaction initiations, positive responses to peers and ineffective behaviors include negative behaviors, nonplay behavior, solitary play, negative responses to peers, no response to peers).

*Social Skills.* Social skills are the 40 skills listed in the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003). The social skills that were taught in the social skills training intervention were joining in, waiting your turn, sharing, and asking someone to play.

(a) *Sharing.* The child shares his or her toys/materials by making a sharing plan (e. g., play together with the toy, take turns), asking other children to agree to the plan, and following through with the plan (McGinnis & Goldstein, 2003).

b) *Joining in.* The child uses acceptable ways of joining an ongoing activity or group, (e. g., moving closer to the group, watching, asking to play) (McGinnis & Goldstein, 2003).

*c) Asking Someone to Play.* A child asks another child to join the game or group by deciding if they want someone else to join, deciding who should join, and asking the other child (McGinnis & Goldstein, 2003).

*d) Waiting Your Turn.* The child waits his or her turn by waiting quietly or choosing another activity to do while waiting (McGinnis & Goldstein, 2003).

*Social Skills Training.* The social skills training was based on *Skillstreaming in Early Childhood* (McGinnis & Goldstein, 2003). The children with and without disabilities were instructed in four of the social skills from the program (e. g., sharing, joining in, waiting your turn, and asking someone to play). The instruction included discussion, modeling, and role play activities.

*Student Triads.* A triad of students in this study consisted of one student with disabilities and two students without disabilities. The three students in each triad were matched by age, gender, and classroom. They participated as a triad in all training and play sessions.

*Trainer.* A trained special education teacher who delivered interaction strategy training and social skills training. This individual also supervised the play sessions.

*Verbal Prompt.* A verbal direction or comment provided by an adult to a child for the purpose of reminding the child of a step in an activity or alerting the child to the opportunity to implement a strategy.

*Video Camera.* The video camera used in this study was a Sony Digital 8 with a zoom lens. The camera was mounted to the wall by a specialized camera arm to record all training and play sessions.

## Limitations

The limitations of this study are:

1) Data were be collected only for the four week intervention period and the two week follow up period. Longer intervention and data collection periods may produce different results.

2) The number of subjects in this study was low. There were six students with disabilities and 12 students without disabilities in each intervention group (e. g., single intervention group and combined intervention group). A higher number of subjects may produce different results.

3) The focus of this study was the social interaction and social skills of children with and without disabilities in an inclusive preschool setting. The results should not be generalized to non-inclusive settings or settings where more children with disabilities attend than children without disabilities.

4) The use of the Stay-Play-Talk interaction strategy was adapted from its original format for use in this study. Strictly following the guidelines of the authors, including the across-the-day implementation of the intervention, may produce different results.

5) The use of *Skillstreaming in Early Childhood* (McGinnis & Goldstein, 2003) social skills training was adapted from its original format for use in this study. Strictly following the guidelines of the authors, including larger group instruction and program duration, may produce different results.

## Summary

Social skills and social interactions are important elements in early childhood education (Haring & Lovinger, 1989; Leiber et al., 1993; Odom et al., 1999). This is particularly true in settings that include children with disabilities. Identifying effective strategies for increasing the social interaction and social skills of children with disabilities are critical for teachers in inclusive settings (Snyder et al., 1977). The purpose of this study is to evaluate the effectiveness of an interaction strategy and a combination of both an interaction strategy and social skills training on the social interaction and social skills use of children with and without disabilities in an inclusive preschool setting. This study contributed to the literature by describing effective strategies to increase social interaction between children with and without disabilities in these settings.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

Social competence is a learning process that most typical children develop naturally. Children with disabilities often lack the social competence of their same-aged typical peers and may have difficulty initiating, maintaining, and terminating social interaction appropriately. As a result of decreased social skills, children with disabilities may experience less successful social interaction and less meaningful friendships than their typical peers (Hanline, 1993; Leiber, Beckman & Strong, 1993; Guralnick, Connor, Hammond, Gottman & Kinnish, 1995).

A focus of early childhood education is the development of social interaction strategies and programs to train typical students to interact with children with disabilities (Goldstein, English, Shafer & Kaczmarek, 1997). A variety of interventions have been used to teach children with disabilities to interact with their typical peers (Pierce & Schreibman, 1995; Spohn, Timko & Sainato, 1999). Programs also exist to train both children with and without disabilities to interact with each other in inclusive settings (Goldstein & Cisar, 1992; Odom et al., 1999).

#### Social Interaction of Young Children

As children grow, patterns of social interaction and social skills develop as a part of their overall development (Park, Lay & Ramsay, 1993). Research has been conducted to

examine the interactions of children with and without disabilities in inclusive and non-inclusive settings (Park, Lay & Ramsay, 1993; van den Pol, Crow, Rider & Offner, 1985; Hundert & Houghton, 1992). This research has attempted to determine whether the interactions change over time naturally, without intervention, or if training is necessary to facilitate the social interaction between children with and without disabilities. It appears that some form of intervention is necessary to increase and maintain the social interactions between children with and without disabilities (Goldstein, English, Shafer & Kaczmarek, 1997; Pierce & Schreibman, 1995; Goldstein & Cisar, 1992; Spohn, Timko & Sainato, 1999).

#### *Peer Interactions*

Research investigating the relationships of typical preschool children can aid in determining what levels and types of social interactions are appropriate goals for children with disabilities. To evaluate peer interaction patterns and the stability of preschoolers' friendships, Park, Lay & Ramsay (1993) conducted a study to determine the interaction differences, if any, of pairs of friends over a one-year period. Pairs of preschool friends were observed in two, one-hour play sessions conducted one year apart. Fifty pairs of typical children were observed at the first data point and 24 pairs of children participated at the second data point.

The children were paired by best friend status. Mothers of the children reported their child's two best friends and pairs in which both mothers reported a child as the best friend were paired for the study. The mothers also provided information about their criteria for best friend status through a questionnaire, (e. g., frequency of play, most requested playmate, preference or affection for the playmate, etc.).

The friendship pairs attended a play session that was conducted in a large playroom in which there were toys (e. g., dolls, puppets, dramatic play materials, housekeeping materials, blocks, and books). The play sessions lasted for 50-minutes and were videotaped in order to score the behaviors. The Dyadic Relationships Q-Set (Park & Waters, 1989) was used to evaluate the behaviors of the pairs of children. Eighty-one items were grouped into seven clusters comprised of positive social orientation, cohesiveness, harmony, control, responsiveness, coordinated play, and self-disclosure.

An analysis of mean changes from the first observation to the second observation was conducted to determine if there were changes over time in the interactions of the pairs. The analysis was significant and showed continuity of the friendship behavior of the pairs of children. At the second data point, the friendship pairs exhibited a significant increase in the areas of coordinated play (e. g., partners moved together, played in close proximity, and had similar preferences) and positive social orientation (e. g., partners shared with each other, played together, complimented each other, and invited each other to play).

Cross-time correlations were used to determine the stability in the friendship behavior across cluster scores from the two play periods. The individual differences of the friendship pairs also were examined. The friends' interactions were significantly correlated in the areas of positive social orientation (e. g., sharing and playing happily), cohesiveness (e. g., personal preference, partners stay together, playing in close proximity, and moving in coordination), and control (e. g., aggression and power-assertive control strategies).



Park, Lay and Ramsay (1993) concluded that the friendships of preschoolers may be categorized by the stability of interaction patterns, specifically positive social orientation (e. g., readily sharing with each other, playing together happily), cohesiveness (e. g., personal preferences, close proximity, partners stay together, partners move in coordination), and the use of control strategies (e. g., grab and take things from each other; push or hit in anger; use competitive strategies to win toys). The best friend interactions of the children were found to be stable over time during this study. Park, Lay and Ramsay maintain that research on differences in friendships can help to increase understanding of children's relationships and the impact of relationships on social development.

Research that examined the interactions between children with and without disabilities in inclusive settings was conducted by Leiber, Beckman, and Strong (1993). In a study designed to describe the development of social exchanges of young children with disabilities, 38 children were videotaped at four data points during a 16-month period. Twenty-four boys and 14 girls with developmental delays, fetal alcohol syndrome, Down syndrome, cerebral palsy, and spina bifida participated in the study in which they were observed twice during their toddler year and twice during the preschool year in an early intervention program. Typical children were not included in this study and no intervention was provided. The children with disabilities were observed during a 15-minute play session in which they had access to typical preschool toys. The play sessions were unstructured and the children had the opportunity to play with any toys and to interact with any of the children present. Adults present during the observation session did not interact with the children.

Dyadic exchanges, modified interactions, and social behaviors (e. g., initiations, simple socially directed behavior, coordinated socially directed behavior) were recorded. The play sessions were videotaped and the behaviors were coded for analysis. The behavioral measures of the target children were compared four times over the 16-month study and compared using univariate and multivariate analyses of variance for repeated measures. The hypothesis was that the children would become more social over the 16-month time frame of the study without intervention.

The results of the study indicated that the social interactions (e. g., time spent in social exchanges or average number of turns per exchange) of the children with disabilities did not increase significantly over time. The social interaction of the children with disabilities started low and remained low throughout the study when examined as a group. When the behavior of the individual target children was analyzed, the dependent variable included initiations, complexity of the socially directed behaviors, and the specific content of the socially directed behaviors. Again, for initiations there were no significant interaction effects and there was no effect over time. However, there was a significant effect for the type of initiation.

Four types of socially directed behaviors (e. g., simple, simple with no look, coordinated, and coordinated with no look) were also analyzed. There was a significant effect for the type of socially directed behavior, and for the interaction of type and time. The children gave more socially directed behavior with looks than without looks and the frequency of socially directed behavior was greater at observation time two, three, and four than at time one. The Leiber, Beckman, and Strong (1993) also found that there were

more coordinated than simple socially directed behaviors at observation times two, three, and four than at time one.

Leiber, Beckman, & Strong (1993) reported that their hypothesis that the social exchanges of the children with disabilities would increase over time without intervention was not confirmed. However, although no significant changes in the interactions were found through the analysis, there were slight increases that occurred between each of the four observation times. Children with disabilities often do not naturally develop or increase social interactions when placed in an inclusive environment (Leiber et al., 1993) and may need additional experience and training to participate socially with their non-disabled peers.

Van den Pol, Crow, Rider, and Offner (1985) also conducted a series of studies to assess the social interactions of young children with and without disabilities in an inclusive setting. These studies were conducted as a part of a larger research project. All data were collected through observation and analyzed using means and percentages of interactions and identified behaviors.

The first study was designed to assess the spontaneous social interaction among preschool children with and without disabilities and the reliability of measuring such interactions. Twelve children, between the ages of 22 and 71 months, enrolled in a university-based inclusive preschool program participated in the study. Five of the students in the study were typical peer models and seven had disabilities ranging from mild-to-severe mental retardation.

One-thousand, time-sampling observations of free-play sessions were collected and the social behaviors of the children were examined. Data concerning isolated play,

parallel play, and cooperative play were collected as traditional measures. Additional data on proximity (within three feet), facing direction (within 45 degrees of the child's midline), touching (persons or toys within one second of another's touch), and vocalizations were also collected.

The results indicated that spontaneous interactions can occur in integrated classrooms. The interactions occurred in 50% of the observations. Van den pol et al. (1985) reported that 29% of the interactions were between peer models and children with disabilities. The data related to proximity and parallel play percentages were similar at 29% for proximity and 33% for parallel play for typical children playing with children with disabilities, 44% for proximity and 42% for parallel play for children with disabilities, and 27% for proximity and 26% for parallel play for mixed groups. This study indicates that children with and without disabilities in an inclusive classroom do have interactions, but that the types of interactions are less sophisticated than the interactions of their typical peers (van den Pol et al., 1985).

In the second study of the series, van den Pol, et al. (1985) evaluated the levels and types of interactions of children in an integrated preschool compared to the levels and types of interactions of children in a nonintegrated preschool. Eight children without disabilities between the ages of three and five participated in the study. The interactions of the children without disabilities were compared to the results of the interactions of the children in the integrated preschool in the previous study. The Social Interaction Monitoring System for Early Education (van den Pol, et. al., 1985) was used to collect data concerning the setting, context, interaction-type, and consequence of the behavior in addition to the interaction categories that were used in the previous study

(e. g., proximity, facing, touching, verbalizations). Observers also recorded whether a social interaction was appropriate or inappropriate. The data were collected daily across six weeks.

Results indicate that spontaneous social interactions between children with and without disabilities occurred more than 50% of the time, which mirrored the results in the first study in this series. These data were representative of the data for children without disabilities in both the integrated and nonintegrated preschool settings. However, van den Pol, et al. (1985) found a lower rate of interaction behavior in the nonintegrated setting compared to the level of interaction behavior in the integrated setting. As a result of these findings, van den Pol et al., (1985) maintained that an interaction intervention should focus on increasing the quantity of social interactions and decreasing the rate of inappropriate behavior in any setting.

#### *Benefits of Inclusion on the Social Interactions of Children*

The benefits of inclusion for children with disabilities can be demonstrated by examining the social performance of children with disabilities who are isolated from their typical peers compared with the social performance of children with disabilities who are included in settings with typically developing children. Lee and Odom (1996) conducted a study to examine the relationship between the engagement of children with disabilities in social interactions with their typical peers and the occurrence of stereotypic behavior for the children with disabilities during social integration sessions. Two children with disabilities who typically engaged in stereotypic behavior participated in this study. Both children displayed similar behaviors including difficulty relating to others, not interacting with peers, and communication problems. The children had the ability to follow simple

commands. Four children without disabilities also participated in the study. The children were grouped according to gender, one female child with a disability with two female typical peers and one male child with a disability with two male typical peers.

The typical children were taught to make social initiations to the children with disabilities in their class using four social initiation strategies (e. g. sharing, suggesting play ideas, assisting, and being affectionate). The strategies were taught over five, 20-minute training sessions.

The study was conducted during daily social integration sessions in the self-contained classroom of the children with disabilities. Play materials were provided for the triads of children to use and behaviors were recorded using an interval-time sampling observational system. A single-subject withdrawal of treatment design was used (e. g., ABAB). Data were charted and reported as percentage of intervals in which typical peers directed social initiations to the children with disabilities and the percentage of intervals in which the children with disabilities engaged in stereotypic behavior.

The results of the study indicated that the social interactions of the two children with disabilities increased. During the baseline phase, the social interactions for the children with disabilities were zero. During the first intervention phase, in which the typical children were taught to use four social initiation strategies (e. g., sharing , suggesting play ideas, assisting, and being affectionate), the percentage of social interactions of the children with disabilities increased to 49% for child one and 38% for child two. During the second baseline, the percentage of interactions for both children with disabilities decreased to almost zero again. During the second intervention phase, in which the intervention was reintroduced (the typical children were reminded about the social

initiation strategies), the percentage of interactions increased to 62% for child one and 61% for child two.

The stereotypic behavior (e. g., highly visible and unusual behaviors such as rocking, finger movements, and mouthing objects) of the two children with disabilities also improved during the intervention phases of this study. During baseline the percentage of the frequency of stereotypic behavior was 61% for child one and 93% for child two, during intervention the percentage of frequency decreased to 19% for child one and 65% for child two. During the second baseline, when the intervention was withdrawn, an increase in stereotypic behavior occurred for both children, 64% for child one and 93% for child two and decreased with the reintroduction of the intervention to 13% for child one and 27% for child two.

Lee and Odom (1993) concluded that simple strategies taught to children without disabilities can increase the social interactions and decrease the stereotypic behaviors of children with disabilities. They also maintained that inclusion with typical peers can benefit children with disabilities as long as social interaction training is included.

Research also has attempted to identify the benefits of inclusion on the social interactions of both children with and without disabilities. Hanline (1993) conducted a study focused on the interactions of children with and without disabilities in a full-inclusion preschool. The purpose of the study was to explore the nature of spontaneous peer interactions. Three children with profound disabilities were observed individually for 480 minutes during indoor and outdoor supervised play and three typical children were observed in the same conditions. No interventions were used with either group of children. The children were observed four days a week for four weeks according to a

predetermined random schedule of five minutes for each child until the child had been observed for a total of 15-minutes of indoor and outdoor play. Initiations, responses, positive behaviors, negative behaviors, and termination behaviors were recorded.

The observation data were reported as a mean number of interactions per five-minute observation period and as a percentage of time engaged in interactions. Findings indicated that the majority of interactions of the children with disabilities were initiated by typical children and that the three children with disabilities were engaged in interactions 95% of the observation periods for child one, 79% of the observation periods for child two, and 92% of the observation periods for child three. The children with disabilities responded to the positive initiations of the typical children 48% of the time. The data also indicated that only 36% of the interactions initiated by children with disabilities were followed by a positive response from typical peers, however in ongoing interactions 55% of positive responses by the children with disabilities were followed by positive response from the typical children. Additionally, the children with disabilities responded less to positively initiated interactions (48% of the responses) than did the typical peers (58% of the responses). However, the percentage of responses in ongoing interactions were similar for all children in the study (59% for children with disabilities and 57% for children without disabilities).

Hanline (1993) found that the children with disabilities had many opportunities to engage in peer interactions and that the interactions were comparable in length to those of the children without disabilities. However, the children with disabilities did engage in fewer overall interactions than did the typical children. Hanline (1993) concluded that children without disabilities may need additional support for initiating interactions as



well as understanding and responding to the idiosyncratic behaviors of children with profound disabilities. Although the children with and without disabilities had many opportunities to interact, additional training for the typical children may improve the level and frequency of their social interactions with their peers with disabilities within the full-inclusion preschool setting (Hanline, 1993).

In a study designed to examine the specific skills (e. g., cognitive, language, motor, social) of children in various types of educational settings, Jenkins, Speltz and Odom (1985) evaluated children in integrated and segregated preschool special education programs. Forty-three preschool children (ages 3-6) participated in the study that was conducted over an 11-month school year. Thirty-six of the children had developmental delays and qualified for special education services while seven of the children did not have disabilities. The four of the classrooms were typically not integrated, but the typical children were recruited for the purposes of this study to create the integrated classrooms.

The four classrooms were categorized as two Communication Program classrooms and two Early Developmental classrooms classrooms. In the two Communication classrooms, the control classroom (nonintegrated) had 12 children with disabilities and the integrated (experimental) classroom had eight children with disabilities and four children without disabilities. In the Early Developmental classrooms, the integrated (experimental) classroom had eight children with disabilities and three children without disabilities and the control classroom (nonintegrated) had 11 children with disabilities.

To evaluate the effects of the integrated preschool experience for the children with disabilities, a pretest/posttest control group design was used. The children were assessed in six areas: (a) cognitive development, (b) language skills, (c) motor skills, (d) pre-

academic skills, (e) peer interaction with a peer entry situation, and (f) peer interaction using the Washington Social Code (WSC) (Bijou, Peterson, Harris, Allen, & Johnston, 1969). The Washington Social Code is an interval sampling system that codes play types and verbal and nonverbal interactions between a child and a teacher and between a child and a child (Jenkins, Speltz & Odom, 1985). In the peer interaction with a peer entry situation, the child with the disability was taken into a playroom and introduced to an unfamiliar typical peer and told to play with a new friend. No specific social skills program or social interaction strategies were conducted in any of the classrooms as a part of the study.

An ANCOVA (e.g., integration/segregation and program type) was conducted on the posttest measures of the six dependent variables. The pretest scores were used as covariates. The main effect of integration was significant for the gross motor scale and the peer interaction with peer entry situation. The children with disabilities in the integrated classroom scored significantly lower on the gross motor scale and significantly higher on the peer interaction with peer entry situation than the children in the segregated classroom.

The Washington Social Code (Bijou et al., 1969) was conducted six times over the school year. The data were analyzed using a repeated measures ANOVA (integration/segregation x time period) and a significant main effect for interactions was found indicating that the interactions of the children with disabilities changed during the six assessment periods over the school year. A one-way ANOVA found no significant difference on this measure between subjects in the Communication or Developmental classrooms.

Jenkins, Speltz, and Odom (1985) found no significant differences between the children with disabilities in the segregated versus integrated preschool classrooms in the areas of cognitive, pre-academic, language, and fine motor skills. In the area of gross motor skills, the children in the segregated classes scored significantly higher than the children in the integrated classroom. The researchers attribute this to additional physical therapy that the children in the segregated setting received as a part of their program.

However, there was a significant difference between the integrated and segregated classes in the area of social interaction with peer entry. The children with disabilities in the integrated classroom scored significantly higher on this assessment in which the children with disabilities were introduced to an unfamiliar typical child and told to play with a new friend. Jenkins, Speltz, and Odom (1985) concluded that that an integrated preschool setting that follows the proximity model of inclusion (e. g., no curriculum for integration) where children with and without disabilities simply are placed together does not create any outcomes for children that are different from those in segregated settings. They also maintain that integrated preschool programs have positive effects only if they implement a planned and systematic curriculum for integration that makes use of typical children as models for the children with disabilities.

In another study designed to measure the benefits of integrated preschool settings, Guralnick, Connor, Hammond, Gottman, & Kinnish (1995) measured the benefits of inclusion on the social interactions of preschoolers with and without disabilities. Playgroups were created for the study because the children were not in an established preschool setting. A total of 72 children who did not know each other prior to the study participated in twelve playgroups of six children each. Three playgroups were comprised

of typical children only, three playgroups of children with developmental delays only, and six playgroups of children who were mainstreamed (two children with developmental delays and four children without disabilities). Children in the groups were matched on gender, ethnicity, IQ scores, language scores, and basic skills.

The children participated in the two-week study for two and a half hours per day, five days a week. Each playgroup was assigned to either a morning or afternoon time period. The playgroups were held in a specially designed laboratory playroom with a teacher and a graduate assistant as supervisors. During the playgroup the children participated in group and individual activities (e. g., circle time, music, art, snack, story time).

There were also two 30-minute free-play sessions daily during which the children had access to a variety of toys and equipment. The social and play interactions of each child were recorded with each child being recorded for 60-minutes over the two week period. The children were videotaped for data collection.

Ten categories were used to record the social behaviors of the children in the playgroups. Behaviors were recorded on a ten-second-interval system. The behaviors were solitary play, parallel play, and group play, each with play subcategories of functional, constructive, dramatic, games with rules, unoccupied behavior, onlooker behavior, reading or listening, exploration, active conversation, transition, and adult-directed.

A second viewing of the videotape examined 34 specific peer-related social behaviors. A continuous recording system was used to record the social interactions of the child with a disability as directed toward the typical peer. The categories included: (a) seeks attention of peer, (b) uses peer as a resource, (c) leads in peer activities (direct,

positive, or neutral), (d) leads in peer activities (indirect, positive, or neutral), (e) leads in peer activities (direct, negative), (f) leads in peer activities (indirect, negative), (g) imitates a peer, (h) engages in observation of peer, (i) joins peer in specific activity, (j) verbally supports peer's statement, (k) verbally competes with peer, (l) shows pride in product to peer, (m) competes with peer for adult's attention, (n) expresses affection to peer, (o) shows empathy toward peer, (p) expresses hostility toward peer, (q) takes unoffered object, (r) defends property, and (s) seeks agreement from peer. Fourteen additional categories focused on the social behaviors of the child with a disability in response to directed activities of the typical peer. The final category recorded related to the child with a disability acting as a model for the typical peer.

A MANOVA was conducted on the 34 peer-related social behavior categories and resulted in significant effects for setting and group factors. The data indicated that parallel play occurred more in the mainstreamed setting and that the children were unoccupied twice as often in the specialized setting. For the group factor, the typical children engaged in more group play, parallel play, and conversation with typical peers; while the children with disabilities engaged more in solitary play, transitions, and interactions involving adults.

Guralnick et al., (1995) concluded that children with and without developmental delays were more interactive with their peers in mainstreamed settings than in specialized settings. It appears that mainstreamed settings are more supportive of the peer interactions of children with developmental delays than are specialized settings. Guralnick et al., (1995) suggested that further research build upon these natural

interaction patterns to maximize the social competence and social interaction between children with and without disabilities in inclusive settings.

To further investigate the benefits of inclusion on the social interactions of young children, Reynolds & Holdgrafer (1998) conducted a study in which the six participants with moderate to severe developmental delays were enrolled simultaneously in an integrated setting (community childcare) with one child with developmental delays to every six typically developing children and a segregated setting (early education program with reverse mainstreaming) with four children with developmental delays to every one typical child. Each of the six participants attended five full days, with half of their day at each of the settings. Communicative partners included adults and children with and without disabilities in either setting.

The focus of the study was to determine if the children with developmental delays attempted more social initiations in integrated or segregated settings, the setting in which the initiations are more successful, the setting in which there were more initiations by communicative partners, and the setting in which children with developmental delays provided more appropriate responses to their communicative partner. Reynolds & Holdgrafer also wanted to identify the setting in which the initiations by the children with disabilities or the communicative partners (peers or adults) were accompanied by attention-getting devices (e. g., verbal or nonverbal indications of intent to communicate).

Data were collected during free play and center activities in each setting. All settings had similar materials and instructional format as well as similar availability of communicative partners. Two, 30-minute videotaped data collection sessions were conducted for each child in each setting (e. g., segregated, integrated) on four separate

days over a four-week time period. Behaviors were coded using the Communication and Symbolic Behavior Scales (Wetherby & Prizant, 1993). This scale records communicative acts, initiations and responses, behavior, and joint attention. The use of attention getting actions also was recorded for data collection.

No social interventions were provided to the participants and the effects of each setting were analyzed. Data were analyzed using paired *t-tests* to compare the participants and their communicative partners across settings. There was no significant difference between the mainstreamed and segregated settings for the rates of initiation of social communicative attempts or for the success of initiations as measured by the proportion of responses by the communicative partner in either setting. The rate of partner initiations (per minute) was significantly higher in the segregated setting than in the mainstream setting, this may have been due to the presence of special education teachers and other adults in the segregated setting. There were no significant differences between settings in the areas of providing appropriate responses to the initiations of the communicative partners or in the use of attention getting actions by the children with disabilities.

The results of this study indicate that the interactions of the children with disabilities during free play and center activities were similar across the two settings (integrated and segregated). There were low rates of interactions and responses in both settings by the six children with disabilities compared to the rates of typical children the same age. Based on the results of the study, Reynolds and Holdgrafer (1998) concluded that inclusion alone is not enough to ensure the development and occurrence of social communicative acts for children with moderate to severe disabilities. They state that interventions with adults and

typical peers may be required in both mainstreamed and segregated settings to promote increased communicative interactions for children with developmental delays.

### Interventions for Increasing Social Interactions

Children with and without disabilities in inclusive settings often need additional training or assistance to learn how to interact with each other. The typical children may not understand disabilities or have the skills needed to interact with children with different types of disabilities, while the children with disabilities may lack essential social skills to facilitate the initiation and response of a social interaction (Goldstein, English, Shager & Kaczmarek, 1997). In addition, children with disabilities may benefit from additional communication and joint attention skill training (Goldstein & Cisar, 1992; Hwang & Hughes, 1995).

#### *Interventions for Typical Children*

In a study using a peer-mediated intervention with typically developing children, Goldstein, English, Shafer, and Kaczmarek (1997) investigated whether the sensitizing of typical preschoolers to the nonverbal communication behaviors of children with disabilities would result in increased social interactions between the children with and without disabilities. A multiple baseline across subjects design was implemented and replicated over two years with two separate groups of preschoolers.

For the first year of the study, 18 children participated (12 had identified disabilities and six did not have disabilities). In the second year of the study, 19 children participated in the study (12 children with disabilities and seven children without disabilities). Observations of the children were conducted in their classrooms and peer-training



sessions were conducted in an empty school room. For the intervention training, the typical peers participated in sensitivity training, discussion, and strategy training (Stay-Play-Talk) (Goldstein, English, Shafer & Kaczmarek, 1997).

Data were collected on each child for 10-minutes daily (three minutes during snack, four minutes during free play, and three minutes during a structured center time activity). The social communicative acts recorded included request for attention, requests, comments, responses, and other communicative behaviors. The social communicative acts of the children with disabilities, the typical children (trained in the use of the strategy), and untrained typical peers were recorded. For the children with disabilities, communication directed to an adult and incidents of no response were also recorded. Adult behaviors directed toward the child with a disability were recorded as praises or other behavior (e. g., questions, directions, comments). Finally, the proximity of the child with the disability to his/her typical peer was recorded at the beginning of each data interval (e. g., within three meters of the trained peer, within three meters of any group containing the trained peer, within three meters of an untrained peer, or alone).

A multiple baseline across subjects design was used. During the baseline condition the children with disabilities were observed one at a time. Classroom activities were arranged so that the children with disabilities were with the children who would later be the trained peer buddies. No directions were given regarding interactions. A buddy baseline condition was created. During this condition, the four typical peers were observed after being assigned to a target child and told to stay in proximity and play together. Once the typical peer remained in proximity to the target child at least 80% of the observation time, they received praise and reinforcement. After strategy training, the

strategy-use condition was implemented on a multiple baseline format. Finally, generalization probes were conducted in which the conditions were similar to the strategy-use condition, but the target children were assigned to different typical peers.

The number of interactions per 10-minute sample for the typical peers and for the target children were reported. The frequency of the typical child's communicative acts (e. .g., request for attention, request, comment, response, non-verbal request for attention, non-verbal request, non-verbal response, and other) and the frequency of the communicate acts of the target children also were reported. The results indicate that the children with disabilities increased their number of interactions. The number of interactions initiated by other classmates' behavior to the children with disabilities also increased. Goldstein et al., (1997) concluded that the use of the intervention with the children without disabilities demonstrated the importance of training peers in an inclusive setting to increase interactions toward the children with disabilities and to increase the number of interactions that the children with disabilities initiate toward their typical peers.

In a study that focused on the training of typical children to use interaction strategies with children with disabilities, Pierce & Schreibman (1995) taught pivotal response training (PRT) to the typical children so that they could teach social behaviors to two children with autism. The peers were taught to implement the PRT strategy through modeling, role-play, and instruction. Four, 10-year old children participated in the study. These participants were two children with autism who attended a non-integrated classroom in a neighborhood school and two typical peers who attended a general education fourth-grade class. The training was conducted in a classroom in the school and

generalization probes were gathered in a novel third-grade classroom. A multiple baseline design across subjects was used.

The pairs of children were videotaped during 10-minute play sessions before, during, and after the Pivotal Response Training. The dyads were rated on the behaviors: (a) maintains interactions, (b) initiates conversation, (c) initiates play as well as nonengagement, (d) onlooking, (e) object engagement, (f) supported joint attention, and (g) coordinated joint attention. The participating teacher also completed a social competence scale for each of the children with disabilities.

During the baseline condition, the child with autism and the typical peers were told to play together in the training room. Following the baseline condition, Pivotal Response Training was conducted for the two typical peers over a two-week period. As a part of the training, the typical peers also were paired with the students and the typical peer was given feedback regarding his/her use of the strategy.

The actual PRT session occurred after one month of training and after the peer demonstrated at least 80% accuracy in the implementation of the strategies. During the play sessions no direction or feedback were given to the typical peers. A two-month follow-up assessment in the training condition also was conducted.

Data reported were the percentage of intervals engaged in maintaining interactions and initiations. During baseline, the children with autism had low interaction levels. One child had no initiations while the other child had almost zero percent of initiations. However, after the intervention was implemented both of the children with disabilities increased their percentage of intervals of maintaining interactions and of initiating interactions. This continued through the follow-up phase and in the generalization setting

(novel third grade classroom). The children with disabilities also increased their average word use per 30-second interval from less than one word per interval at baseline to an average of eight words per interval at follow up. One child used three word sentences. This was an increase from less than one word per interval at baseline to over four words per interval at follow up.

The complexity of the social behavior for the children with autism also changed from a high percentage of nonengagement and object engagement in baseline to increased coordinated joint attention and supported joint attention in training and follow-up phases. Pierce & Schriebman (1995) concluded that typical peers can be taught effective strategies to increase the complex social behaviors of children with disabilities (e. g., initiating and maintaining interactions) through play.

Additional research that focused on teaching strategies to typical children as a strategy to increase the social interaction between children with and without disabilities in integrated settings was conducted by Odom, Strain, Karger, & Smith (1986). A single subject study using an alternating treatment within a withdrawal of treatment design was implemented to examine the effects of single versus multiple peers to promote social interactions in an integrated preschool setting. Two preschool-aged children with behavior disorders (one male, one female) and four typical children (two males, two females) participated in this study.

During the first five days of the study, the typical children participated in 20-minute training sessions in which they were taught five social initiation strategies (e. g., play organizers, shares, assistance, affection, and persistence). The strategies were taught through modeling, practice, role-play, and performance feedback.

In the single-peer condition, the child with disabilities was grouped with one trained peer and two other children not involved in the study. During the multiple-peer condition, the child with disabilities was grouped with the three trained peers for the playgroup. During the baseline phase, the initiations of the target children were recorded. During the intervention phase, in both the single and multiple peer conditions, the typical children were given directions to interact with the child with disabilities. During the withdrawal phase, the typical children were told they could play with whomever they wished. Data were collected during the structured play sessions twice a day. A continuous event recording system was used to code the behaviors. The coded behaviors included play organizer, share, share request, assistance, assistance request, complimentary statement, affection, negative motor-gestural, and negative vocal verbal. Observers also recorded the child who engaged in the behavior and whether the behavior was an initiation or a response.

The results of the study were reported as the number of social initiations by single and multiple peers toward the child with the disability and mean frequency per session of the target child's social initiations. Positive social initiations and responses were reported for each child with a disability. During the baseline phase, the social initiations of the typical child to both of the children with disabilities were low in both the single and multiple peer conditions (range of 0-10 initiations). Social initiations from the single and multiple peers increased (range of 6-32 initiations) following training. The level of social initiations decreased again when the treatment was withdrawn (range of 0-12 initiations) for single and multiple peer conditions and increased again (range of 10-30 initiations)

when the intervention was reintroduced. There were no differences found between the target children for the initiations by trained typical peers.

As a result of the intervention, the total social initiations to the children with disabilities increased from the single and multiple peers. Positive social responses and positive social initiations for both of the children with disabilities also increased during the intervention phases. Based on these findings, Odom, Strain, Karger, and Smith (1986) concluded that training both single and multiple peers may lead to the increase of social interactions of young children with moderate and severe disabilities.

Goldstein, Kaczmarek, Pennington, and Schafer (1992) conducted a study that focused on training typical children to use strategies to help them better interact with children with disabilities. Typical peers were taught to attend to, comment, and acknowledge the social behavior of preschool children with autism. A total of 15 children participated in the study (10 typically developing peers and five target children with disabilities). Each participant was assigned to a triad consisting of two typical children and one child with a disability.

The intervention training for the typical peers consisted of six direct-instruction lessons that focused on teaching three strategies to facilitate interaction. The strategies included mutual attention to the play activity, commenting about ongoing activities, and general acknowledgement of the child's communicative behaviors. The peers were trained in steps and the lessons included an introduction of the skill, discussion, adult-modeling, adult-child practice demonstrations, and child-child practice demonstrations. Peers were required to reach an 80% mastery level to complete training.

Goldstein et al., (1992) used an ABAC reversal design replicated across the five triads to assess changes in the interactions of the typical peers and the target children. During the baseline condition, the children received general instructions to play with their friends. During the first intervention phase, the typical peers were given 10-seconds to initiate interactions with the target children. The typical peers were prompted as needed. During the reversal phase, the typical peers were prompted to use the same trained behaviors, but were instructed to have a conversation. The prompting format was similar to the first intervention phase. The fourth phase (return to first intervention) was identical to the initial intervention phase.

Data collection included the frequency of the social behavior of the typical peers directed to the target children with disabilities. The frequency of social behavior by the target children also was recorded. The frequency of the typical peers' social behavior toward target children was reported in a graph format according to the phases of the study. All of the social behaviors of the typical peers toward the child with disabilities increased during the peer intervention phase. Baseline levels were low as were levels of social behavior in the reversal phase. The frequency of the social behaviors demonstrated by the children with disabilities also were presented in a graph that showed both the total number of social behaviors and the total number of communicative acts. Each of the five children with disabilities showed an increase in their social behaviors and communicative acts during the two peer intervention phases as compared to the baseline and reversal phase.

Goldstein, Kaczmarek, Pennington, and Schafer (1992) concluded that, with training, typical children can use socially facilitative strategies with their peers with disabilities in

inclusive settings and that these strategies can effectively increase the social behaviors of both the typical children and the children with disabilities. They also stressed that the training of typical children in the areas of mutual attention, commenting, and acknowledging of the behavior of children with disabilities was an effective combination of strategies.

### *Interventions for Children With Disabilities*

In addition to training typical children to use interaction strategies, several researchers have focused on training children with disabilities to increase their social interactions in inclusive educational settings. Hwang and Hughes (1995) implemented a social interactive training system designed to increase the social-communicative skills of a preschool child with developmental disabilities. A female student with a developmental delay participated in the study to increase her social communication skills (e.g., eye contact, joint attention, and imitation) in a preschool setting. A social interactive training system developed by Klinger and Dawson (1992) was used.

Social interactive strategies were taught to the child during daily, 15-minute intervention training sessions. The skills in the training program included strategies for facilitating eye contact (e. g., imitating child, catching child's attention with toys and movements), joint attention (e. g., motivation through shared activities, creating situations that require child to ask for help), and imitation (e. g., introducing familiar behaviors and/or sounds). Teaching strategies included contingent imitation, natural reinforcement, and time delay.

An ABAB withdrawal design was used and data were collected during free-play sessions. Each observation session was conducted for five minutes in the middle of



15-minute training sessions. The behaviors were recorded as either observed or not during the 30 intervals of the five-minute recording session. The data were reported as percentage of intervals per session in which the child engaged in the behaviors of eye contact, joint attention, and imitation. The mean percentages for the behavior of eye contact was 12% at baseline, 52% during the implementation of the intervention, 22% during the withdrawal phase, and 46% when the intervention was reintroduced. The mean percentages for the behavior of joint attention was 3% at baseline, 39% during the implementation of the intervention, 7% during the withdrawal phase, and 33% when the intervention was reintroduced. The mean percentages of imitation were 7% at baseline, 56% during the implementation of the intervention, 18% during the withdrawal phase, and 37% when the intervention was reintroduced.

The results of this study indicate that the use of a training system can be effective in increasing the eye contact, joint attention, and the use of imitation by a child with disabilities. The behaviors were low during the baseline phase and increased when the intervention was implemented. The behavior maintained during the second baseline phase when the intervention system was removed and increased again during the second intervention phase when the intervention system was reintroduced. Although this study involved only one child, the results are important in that they demonstrated that a child with a disability can be taught a social strategy to increase social interactions (Hwang & Hughes, 1995).

Spohn, Timko, and Sainato (1999) also taught social strategies to children with disabilities. They examined the effects of an interactive game on the verbal social interaction of preschool children with disabilities during meal times. Six children (four

with disabilities and two without disabilities) enrolled in an integrated preschool setting participated in the study. Three of the children with disabilities were selected as target children for data collection.

A single-subject, reversal design was implemented to determine the effectiveness of the placemat game as a social intervention. During the baseline phase, yellow placemats were placed on the table and the teacher prompted the children to remember to talk with their friends. During the second phase of the study, the placemat game was introduced to the children as the teacher acted as the facilitator. The game consisted of the six children having a collage placemat with four pictures at their place at the table. The children took turns interacting. They could say something about their placemat or they could choose an alternative comment or question to begin the interaction. A minimum of a three-step interaction was required (e. g., child one asks a question, child two answers the question, child one comments on the answer given by child two), but longer interactions were permitted (e. g., continued commenting and questioning). If a child did not initiate or respond, they were prompted by the teacher. After a three-step interaction by a child, other children in the group could join the conversation. After one interaction was completed, the next child took his/her turn and began the next interaction. The teacher provided facilitation as necessary.

The third phase of the study consisted of the placemat game without teacher facilitation and the fourth phase of the study consisted of only the presence of the placemats with one prompt from the teacher to remember to play the placemat game. Data also were collected during lunch to determine the generalization of the skills learned during the breakfast intervention.

Data collection included a 10-second interval recording system to measure verbal interactions and responses of the three children with disabilities. Behaviors recorded included verbal initiations, responses, teacher prompts, or inappropriate behavior. Initiations of conversation were recorded as discussion related to the placemat topics, discussion related to mealtime, or other topics of discussion. Observations were conducted for 30-minutes during breakfast and data were reported and charted as rate of verbal interactions per minute.

The results of the study indicate that the interactions per minute for all three of the target children increased as a result of the placemat game across all phases and over time the number of teacher prompts decreased. The data show that all three children with disabilities had an interaction rate of one to four interactions per minute during the baseline phase which increased to two to six interactions per minute during the intervention phase and decreased again at the second baseline phase. When the game was reintroduced during the second baseline, the three children with disabilities increased their interactions per minute to between four and twelve and maintained that level of interaction per minute when teacher facilitation was removed. In the final phase during which the children had the placements for mealtime, but the game was no longer facilitated these levels of interaction were maintained. Spohn, Timko, and Sainato (1999) concluded that the use of placemats in a structured game format may be an effective strategy for increasing the verbal interaction skills of students with disabilities in a natural setting. They maintained that communication and interaction skills can be taught in a relaxed, fun, and child-centered activity in which familiar peers participate.

Garfinkle and Schwartz (2002) conducted a study using peer imitation training to increase the social interaction skills of children with disabilities. They used a multiple baseline design across four participants in three classrooms to demonstrate the effectiveness of peer-imitation training. Four children with autism or developmental delays participated as target children in the study. The peer-imitation intervention was conducted during a small group activity that included the child with a disability and other typically developing children. The peer-imitation intervention involved four steps that were continued until each child in the small group (including the child with a disability) had the opportunity to be the leader twice. The four steps were: (a) teacher provides instructions to the small group, (b) leader selection, (c) prompts to promote imitation, and (d) praise of imitative acts. The teacher told the students to take turns being the leader of the group, and reminded them of activities they could do with the materials. The children were told that when they were the leader they could choose activities, but when they were not the leader they must do what the leader was doing. The leader was a volunteer or selected by the teacher. During the activity time, the teacher also provided prompts for the children to follow.

Data were collected during the small group activities to assess the implementation and effectiveness of the intervention and during free play (generalization) to assess changes in peer imitation behaviors, non-imitative social behavior, and nonsocial engagement. The data collected during small groups included non-imitative verbal and nonverbal social initiations; non-imitative verbal and nonverbal positive responses; non-imitative verbal and nonverbal negative responses; no responses; independent peer imitations; or prompted peer imitations. Data collected during free play included the

categories coded during small groups as well as nonsocial engagement, proximity, and prompting.

The data reported included percent of prompted imitations during small group training, percent of imitations of the child with the disability, and percent of social interaction initiated by the children with and without disabilities. Other data were the mean percent for engagement as well as proximity and number of imitations of the child with the disability by the typical children. The data were graphed according to the phases of the multiple baseline design.

Garfinkle and Schwartz (2002) reported that the children with disabilities increased their peer imitation behaviors in small group and free play settings from baseline through follow-up. They also exhibited an increase in their social behavior (proximity to peers and number of interactions). Results further indicated decreasing levels of prompting by the teachers as well as a higher mean number of social interactions for the children with disabilities in the intervention phase than in the baseline phase.

Garfinkle and Schwartz (2002) maintained that the inclusion of planned, structured interventions leads to an increase in the social interactions of children with disabilities in inclusive classrooms. They stress the importance of measuring the effects of the interventions in order to continue planning and monitoring the progress of the children. They also believe that interventions should be easy to implement so that teachers will be more likely to use the intervention over time with children.

Craig-Unkefer & Kaiser (2002) conducted a study to examine the benefits of a three-part intervention on the amount and type of verbal engagement between peers with language delays. They were concerned with the diversity and complexity of the

childrens' language as well as the frequency and complexity of the childrens' play. Six, three-year-old preschoolers considered at-risk for developmental delay (e. g., communication delay and behavior problems) participated in the study. Each of the children were enrolled in different classes in the same day care center.

The three-part intervention involved an advanced play organizer, the play session, and the review session. The six children with disabilities participated as a member of one of three dyads during the intervention. The intervention sessions were conducted for 20-minutes, four times per week. During the advance play organizer, the children developed a play plan based on a specific theme. This included labeling the toys that would be used and discussing how to use them appropriately. The interventionist modeled some of the play options to the children. The following play session lasted for 10-minutes in which the interventionist did not directly interact with the children, but did provide verbal reinforcement and comments to sustain the play. The review session occurred immediately after the play session. In the review session, the interventionist sat with the children and asked specific questions about the interactions that occurred during the play session.

A multiple baseline design was used in the study. All baseline and intervention sessions were videotaped were transcribed using the Systematic Analysis of Language Transcripts protocol (SALT) (Miller & Chapman, 1985) and the play sessions were coded using the Peer Language and Behavior Code (PLBC) (Craig-Unkefer, Williams, & Kaiser, 2002). The PLBC measured child communication and interventionist behaviors. The child social-communicative behaviors that were recorded included descriptive and request utterances. Descriptive utterances included: (a) peer-directed comments, (b) play

organizer statements, and (c) acknowledgment responses. Request utterances included: (a) information requests, (b) yes--no questions, (c) action and stop-action requests, and (d) clarification requests. The play of the children was coded separately using the Peer Play Code (Craig-Unkefer, 1998) and applied only to the last three baselines and the last three intervention sessions. Six categories of child play (e. g., aggression, solitary, onlooker, parallel play, associative play, and cooperative play) were measured by the Peer Play Code.

The results of the study indicated that all but one child increased in the use of descriptive utterances and all children produced more descriptive utterances than requests. Five of the six children also increased their average use of requests during the intervention. In relation to linguistic complexity, the mean length utterance (MLU) for all six children increased during the intervention more than one standard deviation and all six children also increased their use of different words. All of the dyads increased by 20% in the use of more interactive and peer-directed play from baseline to intervention.

The intervention also increased the amount of speech during play, specifically, in the areas of requests and descriptive talk. In addition, the language of the children became more complex as measured by MLU, total words, and number of different words used. Craig-Unkefer, Williams, and Kaiser (2002) maintained that through the use of the three-part intervention it was impossible to determine which aspect of the intervention made the largest difference in the increases observed in the dyads. They conceded that other factors may have contributed to the skill increases, including the preschool curriculum, and maturity as well as the prompting and adult interaction of the study. However, Craig-Unkefer, Williams, and Kaiser emphasize that social competence is linked to both

communication and play skills and that early intervention strategies for children with social communication delays are critical to developing social competence.

*Interventions for Children With and Without Disabilities*

Social skills training for both children with disabilities and typical children has proven to be successful in increasing social interactions in integrated preschool environments. Haring and Lovinger (1989) conducted two studies that examined the effects of play initiation training on social interactions between typical students and a student with autism. Two treatment conditions were compared in this study. The conditions included awareness activities, rewards for the typical children, and the teaching of initiations and play behaviors to the child with autism.

The first study was conducted in an integrated preschool classroom and the participants included one preschool-aged male diagnosed with autism and developmental delays. Of the 19 students without disabilities in the target child's inclusion class, five actively participated in the training and intervention. The remaining children were present and available as playmates during the generalization phase of the study. The intervention activities included disability awareness training for the typical children and rewards (e. g., stickers) for initiating interactions with the child with disabilities. The child with disabilities was taught play sequences and social initiation strategies to interact with the typical children.

Haring and Lovinger (1989) used a multiple baseline design across three play sequences (settings). An ABAC design was implemented during the generalization phase to compare baseline to awareness training and rewards for the typical children (B) and to compare baseline to play initiation training (C). Data were collected three times per week



in the generalization setting and the measures included initiations (e. g., initiation or no initiation) of the child with disabilities toward the typical children in the play setting and the responsivity (e. g., negative response, no response, average positive response, overly friendly, and reinforcing response) of the children without disabilities toward the child with disabilities.

The data were reported as percent of initiations for the child with disabilities and a mean for the level of responsivity of the children without disabilities. The results indicated that the child with autism increased his percentage of correct play responses from the baseline condition to the intervention condition (play initiation training) across the three activities. Due to the nature of the intervention, Haring and Lovinger (1989) state that the benefit of the results would be greater if the child had generalized the play initiation training to all play situations. The results of the ABAC design showed that there was not a significant change between the first baseline and the awareness/reward intervention for the typical students. The measure of the typical students was the frequency of initiation by the child with disabilities or the responsivity of the children without disabilities. However, the results do indicate a change between the second baseline and the play initiation intervention for the frequency of initiations by the child with a disability. The data for responsivity of the children without disabilities appear to be continuous from the first baseline to the second intervention and do not demonstrate a significant change.

Haring and Lovinger (1989) discussed that, although the frequency of initiations by the child with the disability increased over the duration of the study, the frequency of initiations did not change during the awareness training plus rewards for the children

without disabilities. Overall, the authors concluded that the social initiation training, the peer training, and the play initiation training were successful in increasing the social initiations of the child with disabilities both in the training setting and in the generalization setting.

A second study was conducted to answer questions raised by Haring and Lovinger (1989) in the first study. Haring and Lovinger were concerned about controlling the effects of the initiation training on the play initiations in the probe setting. They also were concerned that the awareness training plus peer reward for initiating interactions intervention did not affect the typical peers' responsivity. The children in the replication study included two female, preschool-aged children with disabilities. Both of the children were mainstreamed for one-hour daily into a general education kindergarten classroom with 25 typical children. Five children without disabilities from the kindergarten class also participated in the study.

Generalization probes were conducted during structured play. In the structured play session, the classroom was set up in stations and the children were free to choose any station. Approximately five or six children without disabilities were present at each of the stations. In contrast to the first study, the typical peers did not play in the same setting with the target children during generalization data recording. No prompts or rewards were given during this time.

Play initiation training was similar to that used in the first study, including the same instructional procedures and prompting. However, in this study the child with the disability was taught to initiate interactions by observing the toys her partner was playing

with and then handing the partner another toy that was the same. Also, the partner was prompted to request an alternative item during every other training trial.

A multiple baseline design with concurrent generalization probes was used for this study. The awareness training with rewards variable was not implemented in this study. Data recorded were similar to that in the first study and Haring and Lovinger (1989) also recorded whether the student had used the initiation strategy targeted in the intervention. The duration of the initiation was recorded in addition to the frequency. Finally, the generalized responses of the children with disabilities occurred with children that did not participate in the training sessions, confirming that the children did generalize the training. The results indicate that the percent of correct responses for both of the children with disabilities increased from the baseline to the intervention condition and the frequency and duration also increased from the baseline to the intervention phase. The third aspect of the study (the responsivity of the peers) showed an increase from baseline to intervention for one of the children with disabilities. The level of data increased for the second child, but the change was not significant.

Haring and Lovinger concluded that interventions for children with disabilities are important aspects to increasing social interactions for the child. The replication of the first study provided important information concerning the effectiveness of the play initiation training as an intervention to increase the correct responses of the target child, the frequency of the initiations, the duration of the initiations, and the responsiveness of the peers. Haring and Lovinger (1989) concluded that the awareness training and rewards for the peers was not as important as the social initiation training for the target children in increasing the social interactions between the children with and without disabilities.

Further research on strategies to increase social interactions was conducted by Odom et al. (1999). The study focused on the comparison of four different intervention approaches to promote peer-related social competence. The purpose of the study was to determine the different treatment effects of four social skills interventions for children with disabilities. Odom et al. (1999) wanted to determine the effects of the interventions immediately following the intervention, the maintenance of intervention effects, and whether the use of a performance-based approach to assessing social competence (PASC) would reveal different effects for specific interventions. The children with disabilities participated in one of five conditions including environmental arrangements, a child specific approach, a peer-mediated approach, a comprehensive approach, and a control group (no intervention).

Environmental arrangements is an approach during which teachers select children with and without disabilities to engage in a play activity, assign roles, and provide prompting. The child approach introduces social skills to children with disabilities in small groups through practice, prompting, and reinforcement. Peer mediated intervention teaches socially competent peers methods of engaging children with disabilities in social interactions. The final intervention strategy used in this study was a comprehensive strategy, which included components of each of the other interventions. A control group that received no intervention also was incorporated into the research design (Odom et al, 1999).

Preschool children with disabilities in two states participated in this study. Ninety-eight students began the study with the pretest assessment, 92 children participated through posttest assessments, and 83 children participated in follow-up assessments. The

children exhibited mild-to-moderate developmental delays and were diagnosed with mental retardation, behavioral disorders, communication disorders, health impairments, and hearing impairments. Twenty segregated classrooms and two integrated special education classes were the settings for this study.

Odom et al. (1999) used a repeated measures ANOVA to determine the effects of the four interventions. Data were collected using an event-recording system and included social initiation, social interactions, and the duration of social interactions. Teacher prompts of the social interactions also were recorded. The results of the study indicate that the environmental arrangements, child-specific, and the peer-mediated conditions created the largest increases in social interaction with the peer-mediated condition creating the largest effect of the three. The results of the assessment for maintenance and generalization over the year-long study indicated that the peer-mediated intervention generated the largest effect size, but that the child-specific and the comprehensive approaches positively affected the quality of the interactions of the children (Odom et al., 1999).

Odom et al. (1999) concluded that it is important to consider the effectiveness of these various interventions when developing and evaluating a social skills training program to increase the number and quality of interactions between children with and without disabilities. They also maintain that intervention strategies designed to teach typical peers to engage in social interactions and play activities with children with disabilities may have substantial effects on the social skills of the children with disabilities.

A specific program designed to teach social skills also can be an effective strategy to

increase the social interactions of children with and without disabilities. Hundert and Houghton (1992) conducted a study using the Classwide Social Skills Program (CSSP). The study was conducted in four integrated preschool classes and included 14 children with disabilities and five children without disabilities.

Each day the children participated in a 20-minute training session in classroom centers and a 20-minute generalization session on the playground. The children were trained to use specific social skills including; (a) giving play invitations, (b) sharing, (c) persisting at play, (d) complimenting, and (e) helping. The social skills training that occurred consisted of 10-minutes of specific social skills instruction to the whole preschool class for the first five sessions of the intervention phase. The skill was taught using puppet modeling, child-adult practice, and child-child practice. After the first five sessions, no new social skills were introduced, but the children were reminded of the social skills they had learned. The following phases of the study consisted of a fading procedure and a one-month, three-month, and six-month follow up. During the intervention and follow up, five randomly selected children without disabilities also were observed to collect information concerning the levels of the social interactions of the children without disabilities to use as a comparison measure.

A multiple-baseline across groups of children with disabilities was used to measure changes in the social interactions. During baseline, the behaviors of the children with disabilities and their teachers were recorded with no changes in classroom procedures. During the intervention phase, the class was provided with social skills instruction and data were recorded during daily free-play sessions. The children were permitted to play with any of the toys or materials and the teacher praised positive social interactions

among all of the children. The teacher also provided reinforcement with stamps for the children with disabilities on a time-interval schedule. The final phase involved fading the reinforcement contingency (stamps) to more natural conditions for social interaction. A follow-up phase was implemented to evaluate the maintenance of the training at one, three, and six months after fading the intervention.

Data were collected on the positive play of the children with disabilities and the teacher reinforcement directed toward the children with disabilities during the session. The data were reported as means per session for positive play and teacher reinforcement. Hundert and Houghton (1992) reported that all of the groups increased their positive play after the introduction of the social skills program. The levels of teacher reinforcement toward the children with disabilities also increased after the introduction of the social skills program. During the follow-up phases, the positive play mean for the comparison children remained similar to that of the intervention phase, however, the mean for positive play of the children with disabilities significantly decreased over the three-month follow-up session. These data indicate that the children with disabilities may need continuous training or additional follow-up training opportunities to maintain their gains in positive social interactions over time.

Research concerning the increase of social skills and social interactions also includes other types of effective intervention strategies. In a study using sociodramatic scripts as a social skills strategy, Goldstein and Cisar (1992) worked with nine children (six without disabilities and three with disabilities) in an inclusive preschool program. The nine children were divided into three triads (two children without disabilities and one child

with a disability). Each triad was taught one of three sociodramatic scripts at a time. Each script had three parts, one for each child in the triad.

Data were collected during the sociodramatic script training sessions and during free-play sessions. During the training sessions, target behavior was coded as independent or prompted. During the free-play sessions, social interactions were coded as targeted social behaviors (specific to the sociodramatic script), related social behavior (related to the topic or theme of the script), unrelated social behavior, and non-social utterances. The teacher behavior was coded as general prompts, specific prompts, physical prompts, and praise.

A multiple-probe design was implemented to assess the effectiveness of the sociodramatic script training intervention. Goldstein and Cisar (1992) reported data as the percentage of behaviors per triad and percentage of behaviors per child with disability. The data indicated that the triads learned each successive script more quickly than the previous script during the training phase, all three triads needed 10-15 days of training to reach the 80% mastery level for the first script and only 5-6 days of training to reach mastery by the third script training. The social interactions and social behaviors of the three children with disabilities increased from the baseline phase through the follow-up phase. The results for the children without disabilities indicated that all of the peers had higher rates of social behavior at baseline than did the children with disabilities.

Goldstein and Cisar (1992) concluded that the sociodramatic scripts were an effective method to increase appropriate social interactions between children with and without disabilities in an inclusive preschool setting. The target behaviors of the children with and



without disabilities increased following the script training and the prompting by teaching decreased from the baseline phase through the follow up phase of the study.

A social skills strategy for increasing social interactions between children with and without disabilities was implemented by Kamps et al., (1992). They conducted a social skill interaction study that included three male students with autism who were high functioning in the areas of academic performance and language skills, but lacked social skills. The classroom also included 11 children without disabilities, two additional children with disabilities, a teacher, and one support staff.

Kamps et al. implemented a multiple baseline design across the children to evaluate the effectiveness of the social skills training. During the baseline phase, one of the children with disabilities and three children without disabilities participated in a 20-minute play session, four times per week in which they were provided with activities (e. g., art projects, dressing up, making puppets). The rest of the children in the class also participated in separate playgroups during this time. No prompts were given, other than telling the children to be polite to friends and play during the activity.

During the intervention phase, social skills training was conducted for individual groups during the first 10-minutes of the playgroups. Specific social skills included initiating, responding, maintaining interactions, conversations, greeting, topics, giving and accepting compliments, taking turns and sharing, helping others and asking for help, and including others in activities. Social skills training was continued for two-to-three weeks per skill.

Following the social skills training, an additional condition was implemented consisting of 20-minutes of free play and feedback through teacher monitoring. A final

follow-up phase was implemented one month after the feedback condition in which free-play groups, that included social skill reminders, were conducted three times per week.

Data were collected on the frequency, time engaged, and duration of social interactions between the children with and without disabilities. A social-skill rating scale was used that rated 21 behaviors (e. g., social skills behaviors and general appropriate behaviors) as never or seldom occurring, sometimes occurring, or occurring very often. The data indicated improved social performance for the children with and without disabilities. Positive changes for social interactions and social skill behaviors also were reported. Data were reported as frequency of social interactions during five-minute samples and duration (seconds) of social interactions during the five-minute samples. The frequency of the interactions (0-2 to 4-9 for child one; 0-4 to 7-8 for child two; 0-5 to 3-12 for child three) and the duration of the interactions (0-40 to 190-240 for child one; 0-60 to 100-180 for child two; 0-50 to 130-280 for child three) increased from baseline through the follow-up phase for all children with and without disabilities. The percentage of social skills engaged in by the target children with disabilities also increased from an average of 18-36% during baseline, to 54-100% during the feedback phase, and 92-97% during the follow up phase.

Kamps et al., (1992) concluded that social skills training that occurs simultaneously for children with and without disabilities is a successful procedure to increase social interactions and the use of social skills by children with disabilities. They also maintained that there was a higher success rate when the groups had the opportunity to focus on fewer skills with more practice opportunities.

## Summary

Social skills are an important aspect of education for all young children with and without disabilities. Children with disabilities develop at different rates than their typical peers and therefore may need more specific instruction. Skills that typical children learn naturally may need to be directly taught to some children with disabilities in the early childhood years. It appears that inclusive settings are ideal settings in which to teach social skills and social interaction strategies (Lee & Odom, 1996; Hanline, 1993) as these settings provide a forum through which children with disabilities can learn incidentally from their typically developing peers as well as from teacher-led direct instruction.

Children with disabilities often need specific instruction in addition to being included in programs with children without disabilities (Kamps et al., 1992). Social skills instruction that focuses on teaching specific social skills (e. g., sharing, joining groups, initiating interactions, and appropriate responses) can be beneficial for increasing the social opportunities of children with disabilities (Hwang & Hughes, 1995; Garfinkle & Schwartz, 2000). Teaching additional social strategies such as social interaction, turn taking, and maintaining interactions (Spohn, Timko & Sainato, 1999) to children with disabilities also has proven to be effective.

Conversely, children without disabilities may need instruction on how to interact with children with disabilities. This includes awareness training and support for initiating and maintaining interactions (Goldstein, English, Schafer & Kaczmarek, 1997). Teaching typically developing children strategies to attend to, comment, and acknowledge the behavior and social interactions of children with disabilities can result in a positive

impact on the interactions between the children with and without disabilities over time (Goldstein, Kaczmarek, Pennington & Schafer, 1992).

Based on this review of literature, this dissertation compared two different strategies to increase the social interactions of young children with and without disabilities in an inclusive setting. This study compared the use of two social interaction strategies to determine if a combined strategy for teaching both children with and without disabilities together is more or less effective than teaching a strategy only to children without disabilities for increasing the social interactions between children with and without disabilities in an inclusive setting.

## CHAPTER 3

### METHOD

#### Overview

Typically, social interaction research in early childhood special education focuses on social skill instruction for children with disabilities (Hwang & Hughes, 1995) or interaction strategy training for children without disabilities (Goldstein, et al., 1997; Goldstein, et al., 1995). Researchers agree that social interaction and play is important to the development of children (Odom et al., 1999; Leiber, et al., 1993; Hanline, 1993). Finding an effective strategy or combination of strategies to train typical children to appropriately interact with children with disabilities and to increase the appropriate social skills of children with and without disabilities in various situations are important goals in early childhood education.

This study compared an interaction strategy (single intervention group) taught to the typical children and the interaction strategy paired with social skills training (combined intervention group) taught to the typical children and the children with disabilities in an inclusive preschool setting. The intervention was compared to determine the effects on the levels of social interaction of the children. Both interventions were designed to increase social interactions between children with and without disabilities in play situations.

The level of social interaction of twelve triads of children were compared in this study. Each triad was comprised of one child with a disability and two children without disabilities from the same classroom and of approximately the same age. The social interactions of the children were assessed pre-intervention and post-intervention and the two intervention groups compared.

The interaction strategy that was taught to the children without disabilities was the Stay, Play and Talk Strategy (Goldstein, et al., 1995) and the social skills training used with the children with and without disabilities in the study was *Skillstreaming in Early Childhood* (McGinnis & Goldstein, 2003). The children participated in either the Stay-Play-Talk strategy training or the Stay-Play-Talk strategy training combined with the *Skillstreaming in Early Childhood* social skills training based on their assigned intervention group (see Appendix A). All training occurred prior to the play session.

Each triad participated in 15-minute play sessions during which they were observed and videotaped for data collection purposes. The play session was conducted in an empty preschool classroom and the children did not receive any intervention (e. g., instruction or prompting) during the play session. The children were redirected for inappropriate or safety-related behavior during the play session. Data were collected using the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003), an interaction frequency count, and the Social Interaction Observation System (Kreimeyer et al., 1991).

## Research Questions

Data were collected to evaluate the effectiveness of the two interventions that were used in this study. The following questions were asked.

Research Question 1: Do the children with disabilities in the combined intervention group have more effective and less ineffective social behaviors than the children with disabilities in the single intervention group as measured by the Social Interaction Observation System (Kreimeyer, et al., 1991) across phases?

It was predicted that the children with disabilities in the combined intervention group would have more effective and less ineffective social behaviors than the children with disabilities in the single intervention group across phases.

Research Question 2: Will the combined intervention (e. g., interaction strategy training and social skills training) increase the frequency of interactions between the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the social interaction frequency count?

It was predicted that the use of the combined intervention would increase the frequency of the interactions of the children with and without disabilities more than the use of the single intervention across phases.

Research Question 3: Will the combined intervention (e. g., interaction strategy training and social skills training) increase the use of social skills behaviors of the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the Teacher/Staff Skillstreaming Checklist?

It was predicted that the teachers' perceptions of the children with and without disabilities in the combined intervention group would increase more than the teachers' perceptions of the children in the single intervention group across phases.

### Participants

The children selected to participate in this study were students attending an inclusive preschool program at the University of Nevada, Las Vegas (UNLV). The preschool is a joint partnership between UNLV and the Clark County School District (CCSD). Children who attend the preschool include children of faculty and staff, children of UNLV students, and children from the community. Children with disabilities from the Clark County School District participate in the preschool as an Early Childhood Special Education site. The children who participated in this study were selected from the three classrooms with the oldest children in the program (e. g., Rainbows, Butterflies, and Ladybugs). The age range of the children in the classrooms is from 36-months to 72-months. All of the children participating in this study were 36-months to 72-months old. Only children whose parent(s) signed an informed consent form participated in this study (see Appendix B).

#### *Children with Disabilities*

Criteria for participation of the children with disabilities included qualification for early childhood special education and/or related services in the State of Nevada and a current Individualized Education Program (IEP). Qualification for early childhood special education in the State of Nevada requires a child to be evaluated and identified as having one of fourteen disabilities (e.g., developmental delay, autism, deaf-blindness, deafness,



hearing impairment, mental retardation, multiple impairments, orthopedic impairments, other health impairments, traumatic brain injury, serious emotional disturbance, specific learning disability, speech and language disorder, or visual impairment). To qualify for services, a child must demonstrate a disability-related need for special education and/or related services. Demographic information was provided for each child with disabilities who participated in the study (see Table 1).

#### *Children without Disabilities*

The children (age 36-72-months) without disabilities who participated in this study were typical children who did not have an IEP and did not qualify for special education services in the State of Nevada. Only children who attended the same classes and had a similar schedule as the participating children with disabilities were considered for participation in this study. Demographic information was provided for each child without disabilities who participated in this study (see Table 2).

#### *Teachers*

Six female preschool teachers participated in this study. All teachers signed an informed consent form prior to participation in this study (see Appendix C). Demographic information for the teachers is provided in Table 3.

Table 1

*Demographics of Children with Disabilities by Classroom*

Characteristics	Ladybugs	Butterflies	Rainbows
<b>Gender</b>			
Male	4	1	2
Female	2	2	1
Total	6	3	3
<b>Age</b>			
Mean	44 months	44.3 months	53 months
Range	37-51 months	43-47 months	48-56 months
<b>Ethnicity</b>			
Caucasian	5	3	3
Asian American	1	0	0
Total	6	3	3
<b>Disabilities</b>			
Developmental Delay	3	2	2
Mental Retardation	1	0	0
Speech only services	0	0	1

Orthopedic Impairment	1	0	0
Hearing Impairment	0	1	0
Autism	1	0	0
Total	6	3	3

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Table 2

*Demographics of Children without Disabilities by Classroom*

Characteristics	Ladybugs	Butterflies	Rainbows
<b>Gender</b>			
Male	5	3	3
Female	7	5	1
Total	12	8	4
<b>Age</b>			
Mean	42.08 months	49 months	55.25 months
Range	37-49 months	44-56 months	49-59 months
<b>Ethnicity</b>			
Caucasian	12	7	4
African American	0	1	0
Total	12	8	4

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Table 3

*Demographics of the Preschool Teachers*

Characteristic	Ladybugs	Butterflies	Rainbows
Gender	Female	Female	Female
Age	23	46	50
Ethnicity	Caucasian	Caucasian	Caucasian
Current Degree	Bachelor of Science	Bachelor of Science	Master of Education
Degree Program	Early Childhood	Early Childhood	Early Childhood Special Education
Years Teaching	1	21	27

*Trainer*

One individual was responsible for providing the interaction strategy training for the typical children in the single intervention group and the combined intervention group comprised of the typical children and the children with disabilities. The trainer holds a Master's Degree in Special Education and is enrolled in a doctoral degree program in Special Education at the University of Nevada Las Vegas. The trainer is licensed in special education and has taught for 10 years.

### *Interrater Observer*

One observer assisted in the checking of data for scoring reliability. The interrater observer was a doctoral student who observed and coded 25% of the videotaped play sessions using the Social Interaction Observation System (Kreimeyer et al., 1991) and rated 25% of the videotaped play sessions using the frequency interaction count (Goldstein, et al, 1995). The interrater observer was trained in the use of all instruments used in this study.

### Setting

This study was conducted at the University of Nevada, Las Vegas Consolidated Students University of Nevada (UNLV/CSUN) Preschool. The preschool is located on the UNLV campus in the Carlson Education Building. The preschool provides services for children from the ages of 12-months to 72-months and consists of six classrooms. The classrooms are separated by approximate ages and learning levels. The six classrooms are the: Grasshoppers (12-months to approximately 18-months), Stars (approximately 18-months to 24-months), Hearts (approximately 24-months to 36-months), Ladybugs (approximately 36-months to 44-months), Butterflies (approximately 40 months to 54-months), and Rainbows (approximately 54-months to 72-months). The preschool is accredited by the National Association of Education for Young Children (NAEYC). The preschool and UNLV campus is located in a neighborhood of Las Vegas in which there is a diverse student and family population. The preschool enrolls children from a wide range of racial, language, and economic groups.

Children with disabilities attend the preschool through an interagency agreement with the CCSD. Through this agreement, the preschool accepts children with disabilities, tuition free, in exchange for staff support and supplies. Each semester approximately 10%-15% of the children enrolled in the preschool have disabilities.

### *Classrooms*

This study was conducted in three preschool classrooms. The Rainbow classroom is for children approximately 54-months to 72-months and the Butterflies classroom is for children approximately 40-months-54-months. The Ladybugs classroom is for children approximately 36-months to 44-months. Each classroom is taught by one preschool teacher. The ratio of students to teachers and assistants is approximately 3:1 in all classrooms. Two CCSD itinerant special education teachers work with all of the children in the preschool with IEPs. Children who are qualified through special education also receive related services in the classroom setting.

### Instrumentation

A variety of data collection instruments were used in this study to rate the social skills of the children. The Teacher/Staff Skillstreaming Checklist (see Appendix D) is part of the *Skillstreaming in Early Childhood* Program (McGinnis & Goldstein, 2003) and was used as a pre- and post- measure of all children's social skills as perceived by their teachers. The Social Interaction Observation System (SIOS) (Kreimeyer, et al., 1991)(see Appendix E) and the social interaction frequency count (see Appendix F) were used to evaluate the videotaped play sessions.

*Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003)*

Permission was granted from the authors of the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003) to use the checklist in the study (see Appendix G). The Teacher/Staff Skillstreaming Checklist is a behavior rating scale that uses a 5-point Likert-scale to rate the frequency (e. g., 1-almost never, 2-seldom, 3-sometimes, 4-often, 5-almost always) with which a child uses each of the 40 skills included on the checklist. The 40 questions included in this assessment focus on social skills that may be exhibited by children in a preschool or kindergarten setting. The teachers rated the children on the four skills that were taught in this study (e. g., joining in, waiting your turn, sharing, and asking someone to play). The teachers rated each child (with and without disabilities) from almost never performing the skill (ranking of 1) to almost always performing the skill (ranking of 5) prior to the intervention phase, at the end of the intervention phase, and again at the end of the maintenance phase. The rankings of the teachers on the pretest, posttest, and maintenance posttest Teacher/Staff Skillstreaming Checklist were compared on the four identified items.

*Social Interaction Observation System (Kreimeyer et al., 1991)*

The authors of the Social Interaction Observation System (SIOS) (Kreimeyer et al., 1991) granted permission to use their observation system in this study (see Appendix H). The SIOS (see Appendix E) is designed to discriminate 15 social behaviors that may occur during social interactions (e. g., engages in positive interaction with peers, directs negative behavior to peers, engages in non-play behavior, engages in parallel play, solitary play, associative/cooperative play, engages in positive linguistic interaction, initiates interaction, positively or negatively responds to peer initiation, peer responds

negatively to child's initiation, peer makes no response to child's initiation). The SIOS was used to assess the videotaped observations of the children during each 15-minute play session to ascertain the number of effective and ineffective interactions and the types of play interactions within the triads of children. The interrater observer rescored 25% of the videotapes to ensure reliability.

*Social Interaction Frequency Count (Goldstein, English, Shafer, & Kaczmarek, 1995)*

A frequency count of interactions also was used to collect data during the videotaped play sessions (see Appendix F). The frequency count system was used to score each interaction as a positive or negative interaction, whether the child being observed initiated or responded to the interaction, and whether the interaction was with a child with a disability or with a child without a disability. This information was used to determine if the number and types of interactions within a triad changed as a result of the interventions used in the study. The interrater observer rescored 25% of the videotapes to ensure reliability.

## Materials

*Social Skills Training*

The social skills training used in this study is the *Skillstreaming in Early Childhood* Program (McGinnis & Goldstein, 2003). The program is designed to teach prosocial skills to young children. The program includes 40 prosocial skills that are taught to young children through a program of planned and systematic instruction.

Four skills from this program were taught to the children in the combined intervention group, four times per week, for 20-minutes per social skills training session.



The skill was taught each week following a predetermined lesson format (see Appendix I). The children were taught a specific sequence of steps for each skill taught. For example, the steps for the social skill of sharing are: (a) make a sharing plan, (b) ask friends to agree, and (c) do it (see Appendix J). Toys and materials (e.g., blocks, toy cars, phones, dishes, clothing, dolls, hats, plastic food) that typically are available in the preschool classroom were available for use during the modeling and role play activities included in the lessons.

### *Interaction Strategy Training*

The interaction strategy training was provided to the children without disabilities in the combined intervention group and to the children without disabilities in the single intervention group. The interaction strategy training was the Stay-Play-Talk strategy (Goldstein et al., 1995). This strategy was developed for the purpose of increasing social interactions between children with and without disabilities in an inclusive classroom setting. It is a strategy that has three steps so that it is easy for young children to remember and to implement with their peers with disabilities. The materials used for the demonstration and practice of the strategy were the same as the materials available during the play sessions (e.g., blocks, toy cars, phones, dishes, clothing, dolls, hats, plastic food).

### Training

The children with and without disabilities who participated in this study received training in one of two intervention groups. The children were assigned to either the single intervention group (interaction strategy training) or the combined intervention group (interaction strategy training and social skills training). All intervention training took

place at the preschool in an extra classroom. All training was provided by a special education teacher who does not usually work with the children in the classroom. A teacher or classroom assistant was always present during training sessions and play sessions (see Appendix K).

*Interaction Strategy Training.*

The children without disabilities in the single intervention group and the combined intervention group were trained to use the interaction strategy. The interaction strategy training used in this study is the Stay-Play-Talk strategy (Goldstein, et al., 1995). The training of the children without disabilities occurred in a room that was separate from the classroom (e. g., empty classroom).

The interaction strategy training occurred over four sessions in one week. On the first and second day the children participated in 15-minute sensitization sessions. During these sessions, the typical peers were sensitized to the communicative attempts (e. g., verbal approximations, pictures, signs, non-verbal behavior) of children with disabilities (Goldstein et al., 1995). These sensitization activities included discussion and role play activities. The children participated in discussions concerning the different ways in which children with disabilities may communicate (e. g., verbal approximations, pictures, signs, non-verbal behavior). The typical children also role played several examples of how children with disabilities may communicate (e. g., one child pretended to be the child with the disability and another child showed what he/she would do in the situation).

Opportunities were provided for the children to ask questions and discuss the role play experiences. The examples used in this training were designed to help the typical peers recognize and interpret the communicative intent of the children with disabilities

with whom they interact in their classrooms. The goal was that the typical peers learned a strategy to use when responding and interacting with the children with disabilities in their classroom (Goldstein et al., 1995).

On the third and fourth days the typical children participated in the interaction strategy training sessions. These 15-minute sessions were conducted on two consecutive days. During the training sessions, the Stay-Play-Talk strategy (Goldstein et al., 1995) was taught to the children without disabilities. In the training they learned the steps involved in the strategy and how to implement the strategy.

The third day involved the Stay and Play portions of the strategy. The children were taught to Stay, or to stick close to the child with the disability. The children were provided with specific strategies to use (e. g., saying hello, asking the child to play, tapping the child on the arm, or using the child's name). The children were taught that Play means to stay close, join in the activity, bring over a toy, or invite the child to join another activity.

On the fourth day of training, the typical children were taught the Talk component of the interaction strategy and to use it in conjunction with the Stay and Play portions of the strategy. The Talk portion of the strategy requires additional communication from the child without disabilities (e. g., talking about toys and activities, responding to the communicative attempts of the child with the disability). The typical peers practiced all three steps in the training situation and received verbal reinforcement for mastery of the steps.

Mastery of the three steps of the strategy was met when the children could name and model each of the three steps in three out of three demonstrations. Once mastery was

demonstrated, the children returned to their classroom and implemented the strategy with the children with disabilities in their triads during the play sessions.

The typical children who received interaction strategy training participated in a reminder session for five minutes, four times per week for the remainder of the intervention portion of the study. The reminder session included a brief discussion of the Stay-Play-Talk steps and an example of how and when to use the strategy in the classroom. The children without disabilities who participated in the interaction strategy training were gathered together and asked: (a) What are the three steps to remember about being friends?, (b) What do we do when we Stay with our friends?, (c) What do we do when we Play with our friends?, and (d) What do we do when we Talk with our friends? The five-minute reminder session occurred prior to each play session. This procedure was conducted separately for each participating triad prior to the play sessions.

### *Social Skills Training*

The children with and without disabilities who participated in the combined intervention group received social skills instruction during four, 20-minute social skills training sessions per week (see Appendix I). The social skills instruction was based on the *Skillstreaming in Early Childhood Program* (McGinnis & Goldstein, 2003). In this program, the social skills lessons included four parts: (a) instruction/modeling, (b) role playing, (c) performance feedback, and (d) transfer training. The four social skills that were taught during this study were: joining in, waiting your turn, sharing, and asking someone to play.

The social skills lessons began with basic instruction on the specific social skill to be taught for the week. The skill was defined and each step of the skill was discussed with

the triad of children with and without disabilities. Next, the skill was modeled for the children, using all of the skill steps in the correct order. Modeling was done in two different situations that were familiar to the children (e. g., playground situations, classroom situations, free play situations). A discussion of other situations in which to use the social skills followed the modeled examples.

The subsequent three social skills training lessons for the week began with a review of the need for the social skill and of the steps for using the social skill. An appropriate use of the social skill being taught was modeled for the children. The children then participated in three separate role play activities in which they had the opportunity to demonstrate the social skill in a specific situation. Each child in the group had the opportunity to participate in a role play during the session.

During each role play the children described a situation in which the social skill could be used or were told a specific situation in which the social skill could be used. The children role played the indicated situation using the appropriate steps of the social skill, discussed the situation, and explained their actions and thoughts while implementing the social skill steps in the role play (see Appendix I).

#### *Interrater Observer*

The observer in this study was a doctoral student in special education. The observer was trained in the use of the SIOS (Kreimeyer, et al., 1991) and the interaction frequency count (Goldstein et al., 1995).

*Session one.* The observer read the instructions for use of the SIOS (Kreimeyer et. al., 1991) and asked questions related to its use during this study. Each of the 15 observable behaviors were defined for the observer. The observer practiced using the SIOS

(Kreimeyer et al., 1991) by observing and coding video segments. Questions were answered regarding procedures after each segment. The observer and the trainer independently used the SIOS with a practice videotape of children playing. After viewing the tapes, the observer and the trainer compared their observations and any disagreements were discussed until resolved. The observer continued to practice using the videotapes until 100% agreement with the trainer was achieved.

*Session two.* The procedure for the use of the interaction frequency count was explained to the observer. The observer had the opportunity to ask any questions related to its use. Positive behaviors, negative behaviors, initiations, and responses were defined. A videotape containing positive and negative examples of children interacting during a play session was used in the training. The observer practiced using the interaction frequency count by observing and coding sample segments. Any questions were answered regarding procedures after each segment. The observer and the trainer independently used the interaction frequency count with another practice videotape of children interacting in play. After viewing the tapes, the observer and the trainer compared their observations, any disagreements were discussed until resolved. The observer continued to practice using the sample videotapes until 100% agreement with the trainer was achieved.

### Play Sessions

The play sessions were a 15-minute period for the children with and without disabilities to play. The play sessions were conducted four times a week. Each triad had an individual play session in an empty classroom. The children in the triad were the only

children in the classroom during the play session. At the beginning of the play session, the children in the triad were called together by the trainer and told that it was time for their play session (e. g., It is time for today's play session, today we will play with the blocks, remember to stay in your play area). At the end of the play session the children returned to their regular classroom.

The trainer did not interact with the children during the play session except to remind the children to stay in the area and to redirect inappropriate behavior (e. g. hitting, throwing toys). The play materials were rotated throughout the week for each play session. During each week the play materials for session one was blocks, for session two was housekeeping (e.g., kitchen, dishes, play food), for session three was dramatic play, and for session four was transportation toys. The play sessions were held four times a week during the baseline phase, the intervention phase, and the maintenance phase. Each play session was videotaped for data analysis.

### Design and Procedures

This study was conducted over eight weeks and consisted of four phases. Due to enrollment and availability of the children the process was conducted during the summer semester for six groups and during the fall semester for six different groups. The phases included baseline and pretesting, intervention, maintenance and posttesting.

#### *Intervention Schedule*

Prior to the beginning of the study, informed consent forms from teachers and parents were obtained, children were assigned to triads, and the interrater observer was trained. During the first week of the study, baseline data were collected on each triad during four

15-minute play sessions. Pretesting using the Teacher/Staff Skillstreaming Checklist also was conducted. There were no interventions during the baseline condition.

During the second week of the study the children without disabilities in the single intervention group and the combined intervention group received interaction strategy training. During the following four weeks (e. g., weeks three through six), the single intervention group received the five-minute reminder session four times per week and participated in four, 15-minute videotaped play sessions per week in each triad. The combined intervention group received the five-minute reminder session four times per week, training on one social skill per week, and also participated in four, 15-minute videotaped play sessions per week.

Following the intervention, the teachers completed the intervention posttest using the Teacher/Staff Skillstreaming Checklist. During weeks seven and eight of this study, the children participated in a maintenance condition that was the same as the baseline condition in week one. All children in both intervention groups participated in four 15-minute play sessions each week for two weeks with no intervention. Following the maintenance condition, the teachers completed the maintenance posttest using the Teacher/Staff Skillstreaming Checklist (see Appendix K).

#### *Pre-phase*

*Consent.* Parental consent for their children to participate in this study was requested for all children in the three identified preschool classrooms (e. g., Ladybugs, Butterflies, and Rainbows). Only children with a signed parental consent form were eligible for participation in the study (see Appendix B). The classroom teachers also signed informed consent forms to participate in the study (see Appendix C).



*Training.* The interrater observer was trained during the pre-phase of the study. The observer was trained in use of the SIOS and on the use of the interaction frequency count.

*Triad assignment.* The children who returned parental informed consent forms were assigned to twelve triads of children. A triad consisted of one student with a disability and two children without disabilities. The children were matched by gender and age.

The children in the triad were the same age within nine months of each other and at least two of the children were of the same gender including the child with the disability and one of the typical children. Each triad was randomly assigned to one of two intervention groups (see Appendix A). This resulted in six triads being assigned to each intervention group (e. g., combined intervention group, single intervention group).

#### *Phase One*

*Pre-testing.* Following the return of the informed consent forms, the classroom teachers completed the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003) for the twelve children with disabilities and the 24 children without disabilities who participated in this study. The children were assessed on the four items that were related to the social skills lessons taught in this study (e. g., joining in, waiting your turn, sharing, asking someone to play).

Table 4

*Triads of Children*

Triad	Class	Children	Age (months)	Gender	Disability
1	Rainbows	Anna	55	F	S
		Jason, Mike	59, 55	M, F	
2	Rainbows	Justin	56	M	DD
		Debi, Ron	56, 56	F, M	
3	Rainbows	David	48	M	DD
		Jackson, Judy	49, 58	M, F	
4	Butterflies	Emma	43	F	HI
		Kristen, Sarah	47, 50	F, F	
5	Butterflies	Chris	47	M	DD
		Joe, Ben	44, 44	M, M	
6	Butterflies	Katie	43	F	DD
		Laurie, Amy	43, 52	F, F	
7	Ladybugs	Sam	47	M	DD
		Caitlyn, Cathi	38, 37	F, F	
8	Ladybugs	Kyle	43	M	DD
		Max, Keri	44, 44	M, F	
9	Ladybugs	Lucie	48	F	DD
		Jenny, Cathy	49, 41	F, F	

10	Ladybugs	Tom	40	M	OI
		Lucas, Baron	41, 41	M, M	
11	Ladybugs	Kate	37	F	MR
		Elly, Rebecca	45, 44	F, F	
12	Ladybugs	Ryan	45	M	A
		Sam, Craig	38, 43	M, M	

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Key: M=male student, F=female student, DD=Developmental Delay, MR=Mental Retardation, S=Speech, HI=Hearing Impairment, A=Autism, OI=Orthopedic Impairment

*Baseline data.* Baseline data were collected for the four play sessions during the first week of the study prior to instituting the intervention in the study. Collection of baseline data was conducted through videotaped observation of the triad play sessions. The triads of children were videotaped and observed during a 15-minute play session. The play session occurred in an unoccupied classroom so that the children in the triad were the only children in the videotaped play session.

The behaviors of the children with and without disabilities were recorded on the Social Interaction Observation System for quantitative analysis. A frequency count of interactions also was collected and used to evaluate each of the children with and without disabilities for quantitative analysis.

#### *Phase Two*

Phase two consisted of five weeks. During the first week of this phase, children without disabilities in the single intervention group and the combined intervention group

participated in four days of interaction strategy training. Interaction strategy training was conducted in an empty classroom.

During the following four weeks of phase two, the children with and without disabilities in the combined intervention group were taught one social skills lesson each week. Each social skills lesson was presented over four sessions. During these four weeks, the typical children in the single intervention group and the combined intervention group received a five-minute daily strategy reminder prior to the play group. Then the children with and without disabilities in the single intervention group and the combined intervention group had the opportunity to implement their skills during four, 15-minute play sessions per week. Each play session was videotaped and data were recorded and analyzed according to the SIOS and the frequency interaction count.

### *Phase Three*

On the first day of phase three, the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003) was completed by the teachers as post-intervention/pre-maintenance data for the participating children with and without disabilities. The same items on the Teacher/Staff Skillstreaming Checklist were completed as during the pre-intervention phase.

Phase three consisted of two weeks of maintenance observation and data collection. Each triad of children was observed and videotaped for four 15-minute play sessions per week. The children did not receive social interaction strategy training, reminder sessions, or social skills training during these two weeks. The children also did not receive prompting to use the Stay-Play-Talk strategy or any of the social skills they had learned. Data were analyzed using the SIOS and the interaction frequency count.

#### *Phase Four*

Following maintenance, the teachers again completed the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003) for the participating children with and without disabilities. The same items on the Teacher/Staff Skillstreaming Checklist were completed as during the pre-intervention measure.

#### Data Collection

Interrater reliability was calculated by comparing the ratings on the SIOS and the frequency interaction count of the observer and the trainer on 25% of the videotaped play sessions. Interrater reliability on the Social Interaction Observation System was determined by  $[\text{agreements}/(\text{agreements} + \text{disagreements})] \times 100 = \text{percent of agreement}$ . Interrater reliability on the interaction frequency count was determined through a correlation analysis.

#### Treatment of the Data

Data from the Interaction frequency count (Goldstein, et al., 1995) and the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003) were analyzed to answer the following questions.

Research Question 1: Do the children with disabilities in the combined intervention group have more effective and less ineffective social behaviors than the children with disabilities in the single intervention group as measured by the Social interaction Observation System (Kreimeyer, et al., 1991) across phases?

**Analysis:** In order to determine significant differences in the effective and ineffective social behaviors between the two groups Doubly multivariate ANOVA was used to compare the groups. An alpha level of .05 was set.

**Research Question 2:** Will the combined intervention (e. g., interaction strategy training and social skills training) increase the frequency of interactions between the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the social interaction frequency count?

**Analysis:** In order to determine significant differences in the frequency of social interactions Doubly Multivariate ANOVA was used to compare the groups. An alpha level of .05 was set.

**Research Question 3:** Will the combined intervention (e. g., interaction strategy training and social skills training) increase the use of social skills behaviors of the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the Teacher/Staff Skillstreaming Checklist?

**Analysis:** In order to determine significant differences in the teachers' perceptions of level of social skills behaviors of the children Doubly Multivariate ANOVA was used to compare the groups. An alpha level of .05 was set.

## CHAPTER 4

### RESULTS

The purpose of this study was to compare the effects of a single social interaction strategy intervention and a combination of a social interaction strategy and social skills training intervention on the social behaviors of children with and without disabilities in an inclusive preschool setting. Data collection was conducted with triads of children (one child with a disability and two children without disabilities) in an inclusive preschool classroom. Thirty-six children (12 with disabilities and 24 without disabilities) participated in the study (See Table 1 and Table 2).

The social interactions of the children were videotaped while in the play sessions during baseline, intervention, and maintenance phases. All of the children without disabilities participating in the single intervention (social interaction strategy) condition and the combined intervention (social interaction strategy plus social skills training) received one week of social interaction strategy training following baseline and a reminder to use the social interaction strategy prior to each play session for the next four weeks. The children with and without disabilities participating in the combined intervention condition participated in four weeks of social skills training in addition to the social interaction strategy. Each triad participated in a total of seven weeks of videotaped data collection. The baseline data were collected for one week, the intervention data were collected for four weeks, and the maintenance data were collected for two weeks.

The videotaped social interactions of the children were coded and recorded using the Social Interaction Observation System (SIOS) (Kreimeyer et al., 1991) that focuses on the presence or absence of 15 specific interaction behaviors (e. g., positive interaction, negative behaviors, non-play behavior, solitary play, parallel play, associative/cooperative play, positive linguistic interaction, child responds positively to peer, child responds negatively to peer, child makes no response to peer, child initiates interaction, peer responds positively, peer responds negatively, peer makes no response). The social interactions of the children also were coded using a frequency interaction count that measured initiations and responses, as well as positive and negative social interactions targeted to children with disabilities or children without disabilities. The children with and without disabilities also were rated by their teachers on their social skills behavior for the four social skills trained in the study (e. g., joining in, waiting your turn, sharing, and asking someone to play) using the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003).

#### Interrater Reliability

The videotapes of the social interactions of the children with and without disabilities were observed and coded by two observers. In order to ensure that the observations were scored correctly, reliability checks were conducted on the social interaction frequency count and on the SIOS scores. Both of the interrater observers were doctoral candidates, observer A was the researcher/trainer for this study. Observer B was recruited for the purpose of interrater observation on the Social Interaction Observation System and the social interaction frequency count and was trained on the use of the measures for both



observation systems. Observer B rated 25% of the videotaped play sessions for the SIOS and for the social interaction frequency count.

Observer A scored all of the videotaped observation sessions and Observer B independently rescored 25% of observation sessions using both the social interaction frequency count and the SIOS. The scores were compared and an interrater reliability score was computed. Interrater reliability on the SIOS was computed by  $[\text{agreement} / (\text{agreement} + \text{disagreements})] \times 100 = \text{percent of agreement}$ . Interrater agreement for the SIOS was 99.8%. Reliability scores for the SIOS are presented in Table 5.

Interrater reliability on the social interaction frequency count was computed by using a correlation analysis. Interrater agreement for the social interaction frequency count was 99.5%. Reliability scores for the social interaction frequency count are presented in Table 6.

Table 5

*Interrater Reliability for SIOS*

Source	Observer B	Percent of Agreement
SIOS	3772/3780*	99.8%

Note. \*agreement/agreement + disagreement

Table 6

*Interrater Reliability for the Interaction Frequency Count*

Behavior	Correlation percentages
Positive initiation to a peer	99.3
Positive initiation to a target child	99.3
Positive response to a peer	98.6
Positive response to a target child	99.6
Negative initiation to a peer	99.3
Negative initiation to a target child	100
Negative response to a peer	100
Negative response to a target child	100
Total	99.5

Social Interaction Observation System

The Social Interaction Observation System (SIOS) (See Appendix E) is an interval sampling measure that was used to record 15 different social interaction behaviors of the children with and without disabilities. The effective behaviors contained in the SIOS are: (a) child engages in positive interaction with peers, (b) child engages in parallel play, (c) child engages in associative and/or cooperative play, (d) child engages in positive linguistic interaction, (e) peer initiates interaction toward child, (f) child responds positively to peer, (g) child initiates interaction toward peer, and (h) peer responds

positively to child's initiation. Ineffective behaviors on the SIOS are: (a) child directs negative behaviors to the peer, (b) child engages in non-play behavior, (c) child engages in solitary play, (d) child responds negatively to peer, (e) child makes no response to peer, (f) peer responds negatively to child, and (g) peer makes no response.

Observers A and B watched the videotaped play session of the triads of children with and without disabilities during the three phases of the study. The data from the SIOS were analyzed to answer the following two questions.

1. Do the children with disabilities in the combined intervention group have more effective and less ineffective social behaviors than the children with disabilities in the single intervention group as measured by the Social interaction Observation System (Kreimeyer, et al., 1991) across phases?

It was predicted that the children with disabilities in the combined intervention group would have more effective and less ineffective social behaviors than the children with disabilities in the single intervention group across phases.

SIOS data were analyzed using Double Multivariate ANOVA to ascertain if there was a significant interaction effect between the intervention groups. The  $p$  value was set at .05 for this analysis. The results of the Doubly Multivariate ANOVA indicated that there was no significant interaction effect (difference in groups over time) and there was no significant group difference (single versus combined social interaction intervention). Each of the intervention groups performed equally well across phases for effective behaviors [ $F(1, 10) = 2.095, p = .178$ ], and for ineffective behaviors [ $F(1, 10) = 3.337, p = .098$ ]. The results of this analysis indicate that neither the single intervention nor the combined intervention group had significantly more effective or less ineffective

behaviors than the other. A summary of the results is presented in Table 7. See Appendix L (Figures 1 and 2) for graphs of these data.

SIOS data were analyzed using a Doubly Multivariate ANOVA to ascertain if there was a main effect for the intervention (change in groups over time). The  $p$  value was set at .05 for this analysis. Results of the Doubly Multivariate ANOVA indicated that although there was no difference in the intervention groups, there was a significant main effect for the intervention across phases for effective behaviors [ $F(2, 22) = 12.403, p = .000$ ] and for ineffective behaviors [ $F(2, 29) = 5.731, p = .003$ ]. A summary of the results is presented in Table 7. The results of this analysis indicate that the children with disabilities in both intervention groups increased their effective behaviors and decreased their ineffective behaviors during the seven weeks of the study. See Appendix L (Figures 1 and 2) for graphs of these data.

Table 7

*Summary of ANOVAs for the SIOS*

Dependent Variable	Source	<i>F</i>	<i>p</i>
Effective behaviors	Week	12.403	.000*
	Group	2.095	.178
	Week*Group	1.069	.367
Ineffective behaviors	Week	5.731	.003*
	Group	3.337	.098
	Week*Group	2.133	.117

Note.  $p < .05$

The effective and ineffective behaviors also were analyzed individually using a Doubly Multivariate ANOVA. The SIOS effective behaviors included: (a) positive interactions, (b) parallel play, (c) associative and/or cooperative play, (d) positive linguistic, (e) peer initiates interaction, (f) child responds positively, (g) child initiates interaction, (h) peer responds positively. The following effective behaviors were significant for main effect (changes in groups over time), positive interaction [F (2, 22) = 8.666,  $p = .001$ ], associative and/or cooperative play [F (2, 24) = 8.510,  $p = .001$ ], positive linguistic interaction [F (2, 23) = 6.206,  $p = .005$ ], peer initiates interaction [F (2, 28) = 15.263,  $p = .000$ ], and child responds positively [F (3, 30) = 12.780,  $p = .000$ ]. Parallel play, child initiates interaction, and peer responds positively

were not significant for main effect. A summary of the results is presented in Table 8. These results indicate that the children with disabilities in both intervention groups had increasing occurrences of the significant effective behaviors across the seven weeks of the study. See Appendix L (Figures 3 through 10) for a visual summary of changes across phases.

The SIOS ineffective behaviors included: (a) negative behaviors, (b) nonplay behaviors, (c) solitary play, (d) child responds negatively, (e) child makes no response, (f) peer response negatively, (g) peer makes no response. The following ineffective behaviors were significant for main effect (changes in groups over time), non-play behavior [ $F(1, 12) = 4.405, p = .050$ ], and solitary play [ $F(1, 19) = 6.576, p = .006$ ]. The SIOS negative behaviors that were not significant for main effect were child responds negatively, child makes no response, peer responds negatively, and peer makes not response. A summary of the results is presented in Table 8. These results indicate that the children with disabilities in both intervention groups decreased their ineffective behaviors in only the areas of non-play behavior and solitary play. This may be because the levels of ineffective behavior for both intervention groups was low during baseline and maintained low throughout the study. See Appendix L (Figures 11 through 17) for a visual summary of changes across phases.

Table 8

*Summary of ANOVAs for the SIOS-Individual Effective and Ineffective Behaviors*

	Dependent Variable	Source	F	p
1.	Positive interactions	Week	8.66	.001*
		Group	1.274	.285
		Week*Group	1.621	.327
2.	Negative behaviors	Week	1.141	.340
		Group	.587	.461
		Week*Group	.967	.399
3.	Non-play behaviors	Week	4.405	.050*
		Group	.878	.371
		Week*Group	.491	.537
4.	Solitary play	Week	6.576	.006*
		Group	4.539	.059
		Week*Group	5.803	.010*
5.	Parallel play	Week	1.637	.210
		Group	.024	.879
		Week*Group	1.183	.331
6.	Associative/Cooperative play	Week	8.510	.001*
		Group	1.707	.221
		Week*Group	1.228	.316

Table continues

7.	Positive linguistic	Week	6.206	.005*
		Group	1.584	.237
		Week*Group	1.087	.362
8.	Peer initiates interaction	Week	15.263	.000*
		Group	.799	.392
		Week*Group	.441	.715
9.	Child responds positively	Week	12.780	.000*
		Group	1.575	.238
		Week*Group	.636	.602
10.	Child responds negatively	Week	1.704	.200
		Group	.461	.513
		Week*Group	.831	.466
11.	Child makes no response	Week	.355	.664
		Group	2.727	.130
		Week*Group	.807	.440
12.	Child initiates interaction	Week	1.159	.340
		Group	1.939	.194
		Week*Group	1.020	.393
13.	Peer responds positively	Week	1.877	.180
		Group	2.267	.163
		Week*Group	1.386	.273

Table continues



14.	Peer responds negatively	Week	1.255	.302
		Group	1.820	.207
		Week*Group	1.562	.239
15.	Peer makes no response	Week	1.561	.241
		Group	.576	.465
		Week*Group	.561	.503

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Note. \* $p < .05$

### Social Interaction Frequency Count

The social interaction frequency count (See Appendix F) is an interval recording system used to record eight different social interaction behaviors of the children with and without disabilities (e. g., positive initiation to a target child, positive initiation to a peer, positive response to a target child, positive response to a peer, negative initiation to a target child, negative initiation to a peer, negative response to a target child and negative response to a peer. Observer A and B watched the videotaped play sessions of the triads of children with and without disabilities during the seven weeks of the three phases (e. g., baseline, intervention, and maintenance) of the study. The data from the social interaction frequency count were analyzed to answer the following questions.

2. Will the combined intervention (e. g., interaction strategy training and social skills training) increase the frequency of interactions between the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the social interaction frequency count?

It was predicted that the use of the combined intervention would increase the frequency of the interactions of the children with and without disabilities more than the use of the single intervention across phases.

Social interaction frequency count data were analyzed using Doubly Multivariate ANOVAs to ascertain if there was a significant interaction effect (difference in groups over time) or group difference (single versus combined intervention group). The  $p$  value was set at .05 for this analysis. The results of the ANOVA indicated that there was no significant interaction effect or group difference. Each of the intervention groups performed equally well across phases for behaviors according to the multivariate test using Wilks Lambda ( $F = .824, p = .798$ ). These results indicate that there were no differences between the intervention groups for frequency of social interaction behaviors.

Social interaction frequency count data were analyzed using Doubly Multivariate ANOVAs to ascertain if there was a main effect (change in groups over time). The  $p$  value was set at .05 for this analysis. Results of the Doubly Multivariate ANOVA indicated that there was a significant main effect according to the multivariate test using Wilks Lambda ( $F = 5.260, p = .000$ ). These results indicate that both groups increased the frequency of their social interactions over the seven weeks of the study.

When the behaviors were analyzed individually, all positive behaviors were found to be significant across phases for main effect. The significant main effect for interaction frequency count positive behaviors included positive initiation to a peer [ $F(2, 73) = 26.228, p = .000$ ], positive initiation to a target child [ $F(2, 90) = 10.528, p = .000$ ], positive response to a peer [ $F(2, 93) = 39.023, p = .000$ ], and positive response to a target child [ $F(2, 69) = 10.792, p = .000$ ]. There was no significant main effect for

the interaction frequency count negative behaviors: negative initiation to a peer [ $F(1, 51) = 1.892, p = .169$ ], negative initiation to target child [ $F(1, 42) = .626, p = .467$ ], negative response to a peer [ $F(2, 71) = .923, p = .406$ ], and negative response to a target child [ $F(1, 43) = 1.552, p = .224$ ]. A summary of the results is presented in Table 9. These results indicate that the children with and without disabilities in both the single and combined intervention groups increased the frequency of positive interaction behaviors during the seven weeks of the study. The negative behaviors did not decrease across time due to the low occurrence of negative behaviors during baseline that was maintained throughout the seven weeks of the study. See Appendix M (Figures 1 through 8) for a visual summary of changes across phases.

Table 9

## Summary of ANOVAs for Social Interaction Frequency Count

Dependent variable	Source	<i>F</i>	<i>p</i>
Positive initiation to a peer	Week	26.228	.000*
	Group	.004	.950
	Week*Group	1.208	.307
Positive initiation to a target child	Week	10.528	.000*
	Group	.099	.755
	Week*Group	.568	.617
Positive response to a peer	Week	39.023	.000*
	Group	.072	.790
	Week*Group	2.152	.104
Positive response to a target child	Week	10.792	.000*
	Group	.560	.460
	Week*Group	.859	.430
Negative initiation to a peer	Week	1.892	.169
	Group	.542	.467
	Week*Group	.935	.376
Negative initiation to a target child	Week	.626	.467
	Group	1.179	.285
	Week*Group	.805	.401
Negative response to a peer	Week	.923	.406
	Group	1.766	.193

	Week*Group	.633	.541
Negative response to a target child	Week	1.552	.224
	Group	1.494	.230
	Week*Group	1.063	.327

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Note. \* $p < .05$

### Teacher/Staff Skillstreaming Checklist

The Teacher/Staff Skillstreaming Checklist (See Appendix D) is a behavior rating scale that uses a 5-point Likert-scale to rate the frequency (e. g., 1-almost never, 2-seldom, 3-sometimes, 4-often, 5-almost always) with which a child uses each of the 40 skills included on the checklist. The 40 skill-related questions included in this assessment focus on social skills that may be exhibited by children in a preschool or kindergarten setting. The teachers rated the children on the four specific skills that were taught in this study (e. g., joining in, waiting your turn, sharing, and asking someone to play). The teachers rated each child (with and without disabilities) from almost never performing the skill (ranking of 1) to almost always performing the skill (ranking of 5) prior to the intervention phase, at the end of the intervention phase, and again at the end of the maintenance phase. The data from the Teacher/Staff Skillstreaming Checklist were analyzed to answer the following questions.

3. Will the combined intervention (e. g., interaction strategy training and social skills training) increase the use of social skills behaviors of the children with and without disabilities more than the use of the single intervention (e. g., interaction strategy training) across phases as measured by the Teacher/Staff Skillstreaming Checklist?

It was predicted that the teachers' perceptions of the children with and without disabilities in the combined intervention group would increase more than the teachers' perceptions of the children in the single intervention group across phases.

Teacher/staff skillstreaming checklist data were analyzed using Doubly Multivariate ANOVAs to ascertain if there was a significant interaction effect (difference in groups over time) or group difference (single versus combined intervention group). The  $p$  value was set at .05 for this analysis. The results of the Doubly Multivariate ANOVA indicated that there was not a significant interaction effect or group difference. Each of the intervention groups performed equally well across phases according to the multivariate test using Wilks Lambda ( $F = .675, p = .713$ ) (See Table 10). These results indicate that the teachers did not perceive any difference between the children in the single and the combined intervention groups.

Teacher/staff skillstreaming checklist data were analyzed using Doubly Multivariate ANOVAs to ascertain if there was a significant main effect (changes in groups over time). The  $p$  value was set at .05 for this analysis. Results of the Doubly Multivariate ANOVAs indicated that there was a significant main effect for the intervention across phases according to the multivariate test using Wilks Lambda ( $F = 3.328, p = .002$ ). All four of the questions were significant for main effect across phases, question one (joining in) [ $F(1, 54) = 8.975, p = .001$ ], question two (waiting your turn) [ $F(1, 54) = 8.072, p = .002$ ], question three (sharing) [ $F(1, 56) = 6.356, p = .005$ ], question four (asking someone to play) [ $F(1, 52) = 7.556, p = .003$ ] (See Table 10). These results indicate that the teachers perceived that the children with and without disabilities in the single and combined intervention groups improved on the social skills that were part of this study

(e. g., joining in, waiting your turn, sharing, and asking someone to play) See Appendix N (Figures 1 through 4) for a visual summary of changes across phases.

Table 10

*Summary of ANOVAs for Teacher/Staff Skillstreaming Checklist*

Dependent variable	Source	<i>F</i>	<i>p</i>
Joining in	Phase	8.975	.001*
	Group	.385	.270
	Phase*Group	1.472	.238
Waiting your turn	Phase	8.072	.002*
	Group	.385	.539
	Phase*Group	.781	.438
Sharing	Phase	6.356	.005*
	Group	.624	.435
	Phase*Group	.263	.730
Asking someone to play	Phase	7.556	.003*
	Group	.547	.465
	Phase*Group	1.889	.169

Note. \* $p < .05$

## CHAPTER 5

### DISCUSSION

The focus on teaching children with and without disabilities interaction and social skills is an important component of any inclusive early childhood education program. Early childhood professionals have found that specific training for children with and without disabilities is necessary before children engage in meaningful interactions in integrated settings (Haring & Lovinger, 1989; Hundert & Houghton, 1992; Hwang & Hughes, 1995; Goldstein, English, Shafer, & Kaczmarek, 1997; Kamps et al., 1998; Odom, et al., 1999).

This type of training is necessary because children with disabilities tend to be weak in social skills and are not well accepted by children without disabilities (Gresham, 1982, Goldstein et al., 1997, Odom et al., 1999). Preschoolers with disabilities tend to engage in fewer social interactions and less mature social behaviors than children without disabilities of the same age (Odom et al.). Another reason for this type of training is that typical children choose other typical children for communication opportunities, play activities, and classroom socialization more often than they choose children with disabilities (Hanline, 1993). Simple contact or exposure does not result in more positive attitudes or more social acceptance of the children with disabilities from their typical peers (Roberts et al, 1991).



The purpose of this study was to investigate the effectiveness of social interaction strategies on the frequency and type of social interaction between children with and without disabilities in an inclusive setting. The study compared a single social interaction intervention with a combined social interaction intervention provided to children with and without disabilities in the inclusive preschool. The premise of the study was that all children in an inclusive setting should participate in an intervention to increase the frequency of social interactions between the children with and without disabilities to expand the inclusive experience of all the children. It was believed that the children who participated in the combined intervention group, (e. g., the children learned a social interaction strategy and four specific social skills) would have increased social interactions when compared to the single intervention group (e. g., the children learned only the social interaction strategy).

This study involved 36 children from three classrooms in an inclusive preschool on a university campus. Twelve triads of children (one child with a disability and two typical children) participated in the study. The typical children in the six triads in the single intervention group participated in interaction strategy training for one week and participated in reminder sessions prior to play sessions during the following four-week intervention. Of the six triads in the combined intervention group, the typical children participated in interaction strategy training for one week and participated in reminder sessions prior to play sessions during the following four-week intervention. All of the children with and without disabilities in the combined intervention group participated in social skills training (one skill per week) prior to play sessions during the four-week intervention. Both the single and combined intervention groups participated in four play

sessions during one week prior to intervention for baseline data, 16 play sessions during four weeks of intervention, and eight play sessions during two weeks following intervention for maintenance data. The play sessions, during which data were collected, were conducted four times weekly for 15-minutes per session.

This study used strategies that have been introduced in previous research (Goldstein, English, Shafer & Kaczmarek, 1997; McGinnis & Goldstein, 2003) and have been used to teach social interaction and social skills to children with or without disabilities. This study expands the previous research by comparing and combining two different strategies for increasing social interactions between children with and without disabilities and using the strategies exclusively in inclusive settings.

#### Effective and Ineffective Social Behaviors of Children with Disabilities as a Result of Single or Combined Social Interaction Interventions

The social interaction observation scale (SIOS) (Kreimeyer et al., 1991) was used to measure eight effective and seven ineffective social interaction behaviors as occurring or not occurring each minute during an observation period. The effective behaviors included: (a) positive interactions, (b) parallel play, (c) associative and/or cooperative play, (d) positive linguistic, (e) peer initiates interaction, (f) child responds positively, (g) child initiates interaction, and (h) peer responds positively. The ineffective behaviors included: (a) negative behaviors, (b) nonplay behaviors, (c) solitary play, (d) child responds negatively, (e) child makes no response, (f) peer response negatively, and (g) peer makes no response.

Question one dealt with the social interaction behaviors of the children with disabilities as measured by the SIOS concerning the interaction effect of the intervention (differences in groups over time), group differences (single versus combined intervention), and main effect (changes over time). It was predicted that the children with disabilities in the combined intervention group would have more effective and less ineffective social behaviors than the children with disabilities in the single intervention group across the phases.

The data from the single and combined intervention groups indicated no significant interaction effect or group differences, meaning that the two intervention groups were not significantly different or that the social behaviors of the children with disabilities in the single intervention group were similar to the social behaviors of the children with disabilities in the combined intervention group. Although not significantly different, graphs of the weekly data indicate that the children with disabilities in the single intervention group had both a larger increase in effective behaviors and a larger decrease in ineffective behaviors than the children with disabilities in the combined intervention group. See Appendix L (Figures 1 and 2). This may be due to the fact that the children in the single intervention group began baseline with a lower level of effective behaviors and a higher level of ineffective behaviors than the children in the combined intervention group, leaving more room for improvement of their skills. The lack of significance for the interaction effect may also be due to the low numbers of children (e. g. six) with disabilities in each intervention group.

The data indicated a significant main effect, both intervention groups changed over time. The main effect was significant for both the effective behaviors and the ineffective

behaviors, meaning that the children with disabilities increased their level of effective behaviors and decreased their level of ineffective behaviors across the seven weeks of the study (e. g., week one is the baseline phase, weeks two through five are the intervention phase, and weeks six and seven are the maintenance phase). This positive change in effective and ineffective behaviors across the seven weeks of the study indicates that both interventions were effective in changing the behavior of the children with disabilities in both intervention groups.

When the eight effective behaviors from the SIOS were analyzed individually, five behaviors were significant for main effect: (a) positive interactions, (b) associative and/or cooperative play, (c) positive linguistic, (d) peer initiates interaction and (e) child responds positively, meaning that the children with disabilities in both the single and the combined intervention groups increased in the occurrence of these behaviors during the observation sessions. However, these behaviors were not significant for group difference or interaction effect, indicating that the children with disabilities in both intervention groups had similar increases in effective behaviors. The effective SIOS behaviors of parallel play, child initiates interaction, and peer responds positively were not significant for main effect or for interaction effect.

In the area of parallel play, all children in the study across all phases tended to engage in some parallel play without much change in behavior across the weeks. The SIOS behaviors of child initiates interaction and peer responds positively may not be significant because of the low levels of these behaviors throughout the study. The children with disabilities tended not to initiate interactions often, and therefore, the peers had less opportunity to respond positively. See Appendix L (Figures 3 through 10) for a graph of

each behavior.

When the seven SIOS ineffective behaviors were analyzed individually, non-play behaviors and solitary play were significant for main effect, but not for interaction effect meaning that the children with disabilities in both the single and combined intervention groups decreased in the occurrence of non-play and solitary play behaviors across the seven weeks of the study. However, there was not a difference in behavior between the intervention groups. This may be because the non-play behaviors in baseline were higher for both groups and quickly decreased to very few occurrences for the remainder of the study. The behavior of solitary play was the only behavior with a significant main effect and a significant interaction effect, indicating that there was a difference between intervention groups and across phases. The children with disabilities in the single intervention group had a much higher level of solitary play behaviors during baseline and the first few weeks of intervention and the children with disabilities in the combined intervention group had almost no occurrences of solitary play behaviors throughout the seven weeks of the study. The reason for this difference in behaviors may be due to the severity of the disabilities or the individual personalities of the children with disabilities randomly assigned to each of the intervention groups.

The SIOS ineffective behaviors of negative behaviors, child responds negatively, child makes no response, peer responds negatively, and peer makes no response were not significant for either the interaction effect or the main effect, meaning that there were little changes in the occurrence of the behaviors across the seven weeks of the study and that there were no differences in the behaviors between the single and combined intervention groups. This lack of significance for many of the ineffective behaviors may

be due to the low occurrence of these behaviors throughout the seven weeks of the study. See Appendix L (Figures 11 through 17) for a graph of each behavior.

#### Frequency of Social Interactions of Children with and without Disabilities as a Result of Single or Combined Social Interaction Interventions

The social interaction frequency count was used to assess the number and types of interactions that occurred between the children with and without disabilities in the single and combined intervention groups. The behaviors that were analyzed using the social interaction frequency count included the positive initiations to a child with a disability by a peer, positive initiations to a typical peer by a child with a disability, positive responses to a child with a disability by a typical peer, positive responses to a typical peer by a child with a disability, negative initiations to a child with a disability by a typical peer, negative initiations to a typical peer by a child with a disability, negative responses to a child with a disability by a typical peer, and the negative responses to a typical peer by a child with a disability.

Question two dealt with the frequency of social interaction behaviors of the children with and without disabilities as measured by the Social Interaction Frequency Count focusing on the interaction effect of the intervention (difference in groups over time), the group differences (single versus combined intervention), and the main effect (changes over time). It was predicted that the use of the combined intervention would increase the frequency of interactions of the children with and without disabilities more than the use of the single intervention across the phases.

Data from the single and combined intervention groups indicated that there were no group differences and no significant interaction effect. The overall differences between the groups were not significantly different, meaning that the single and combined intervention groups had similar behaviors across the seven weeks of the study. Also, when the eight behaviors were analyzed individually there were not any significant differences between the intervention groups, meaning that both the single and combined intervention groups had similar individual behaviors during the seven weeks of the study. This may be due to the fact that both intervention groups received adequate interventions and that one intervention was not found to be more effective than the other. It may also be that both intervention groups participated in the social interaction strategy training and only one intervention group participated in social skills training, meaning that the social interaction strategy was the most effective method of increasing the positive social interactions of the children with and without disabilities and that the social skills training did little to increase the interactions further.

The data analysis did indicate a significant main effect, the behaviors of the children with and without disabilities significantly changed over time, meaning that both intervention groups similarly changed their behaviors during the seven weeks of the study. When the eight behaviors were analyzed individually, the data showed that each of the four positive behaviors (e. g., positive initiation to a peer, positive initiation to a target child, positive response to a peer, and positive response to a target child) indicated a significant main effect for changes across the seven weeks of the study. The children increased their occurrence of positive behaviors during the observation sessions. The four negative behaviors (e. g., negative initiation to a peer, negative initiation to a target child,

negative response to a peer, and negative response to a target child) were not significant for main effect meaning that the children in both intervention groups had little or no change in the occurrence of their negative behaviors during the observation sessions. One reason that the negative behaviors were not significant may be that the frequency of negative behaviors started low in the baseline phase and continued to be low throughout the seven weeks of the study. See Appendix M (Figures 1 through 8) for graphs of each of the eight frequency behaviors.

### Preschool Teachers' Perceptions of the Social Skills of the Children with and without Disabilities

The three participating preschool teachers completed the Teacher/Staff Skillstreaming Checklist (McGinnis & Goldstein, 2003) on each of the 36 participating students prior to baseline, following intervention, and following maintenance. The teachers were unaware of the purpose of the study and the specific research questions as well as the assignment of children to the intervention groups.

Question three dealt with the preschool teachers' perceptions of the social skills abilities of the children with and without disabilities as measured by the Teacher/Staff Skillstreaming Checklist focusing on the interaction effect (differences in groups over time), the group differences (single versus combined social interaction intervention), and the main effect (changes over time) of the intervention. It was predicted that the preschool teachers' would perceive that the children with and without disabilities in the combined intervention group improved their social skills more than the children with and without disabilities in the single intervention group across the phases.



The data from the two intervention groups indicated that the interaction effect was not significant and there were no group differences, meaning that the teachers perceived that the children in the single and combined intervention group behaved similarly on the four social skills that were part of the checklist. The teachers perceived that the children with and without disabilities increased their skills positively in relation to the skills targeted in this study (e. g., joining in, waiting your turn, sharing, and asking someone to play). However, there were no significant differences between the two intervention groups. This indicates that both interventions were successful in increasing the social skills of children with and without disabilities as perceived by their preschool classroom teachers.

It is expected that a child will make progress over time in their use of social skills throughout the school year, especially since getting along and sharing with others is stressed in the curriculum of this particular preschool. However, although the differences are not significant, the graphs of the Teacher/Staff Skillstreaming data indicate that the combined intervention group appears to have made more of an increase than the single intervention group from baseline to the end of the intervention on the social skills of joining in, waiting your turn, and asking someone to play. See Appendix N (Figures 1 through 4). Both groups are similar for the behavior of asking someone to play.

According to the perceptions of the preschool teachers as reported on the Teacher/Staff Skillstreaming Checklist, the children with and without disabilities in both intervention groups made significant increases in their ability to use their social skills (e. g., joining in, waiting your turn, sharing, and asking someone to play) across the three phases of the study (e. g., baseline, intervention, and maintenance). The social skills of the children were rated by the teachers during the baseline phase, at the end of the

intervention phase, and at the end of the maintenance phase. See Appendix N (Figures 1 through 4).

The changes in the perceptions of the teachers of the social skills of the children in the intervention groups over time could be attributed primarily to the two interventions. The children with and without disabilities in both the single and combined intervention groups made significant increases in their social skills according to their teachers over the seven week period in which the study was conducted. Although the teachers were unaware of the intervention group assignment or the research questions in this study, the teachers' perceptions concerning the increases in the childrens' social skills abilities may be attributed, in part, to the teachers' knowledge of the children who were participating in the study. The teachers completed the Teacher/Staff Skillstreaming checklist only on the participating children and may have been more aware of the social behaviors of these children in the classroom environment as a result of the childrens' participation in the study.

### Conclusions

Seven conclusions may be drawn from this study. They are based on the quantitative data that were collected.

1. The children with disabilities in both the single and the combined social interaction intervention groups showed an increase in effective behaviors and a decrease in ineffective behaviors across the seven weeks of the study as measured by the SIOS.

2. The children with disabilities in both the single and combined social interaction intervention groups showed a significant increase in five of the seven individual effective behaviors on the SIOS (e. g., positive interactions, associative and/or cooperative play, positive linguistic, peer initiates interaction, and child responds positively).
3. The children with disabilities in both the single and combined social interaction intervention groups showed a significant decrease in two of the seven ineffective behaviors on the SIOS (e. g., non-play behaviors and solitary play behaviors).
4. The children with and without disabilities in both the single and combined social interaction intervention groups showed a significant increase in all four of the positive behaviors as measured by the social interaction frequency count (e. g., positive initiation to peers, positive initiation to target child, positive response to peers, positive response to target child).
5. The children with and without disabilities in both the single and combined social interaction intervention groups showed no significant change in any of the four negative behaviors as measured by the social interaction frequency count (e. g., negative initiation to peers, negative initiation to target child, negative response to peers, negative response to target child).
6. The preschool teachers perceived that the children with and without disabilities in the single and combined social interaction intervention groups improved on the four targeted social skills (e. g., joining in, waiting your turn, sharing, and asking someone to play) during the three phases of the study

(e. g., baseline, intervention, and maintenance) as measured by the Teacher/Staff Skillstreaming Checklist.

7. The preschool teachers did not perceive any difference between the children in the single social interaction intervention group compared with the children in the combined social interaction intervention group on their ability to engage in specific social skills (e. g., joining in, waiting your turn, sharing, and asking someone to play).

### Recommendations for Further Study

Research indicates that children with and without disabilities in inclusive settings need some sort of training intervention to ensure appropriate social interaction between the groups (Haring & Lovinger, 1989; Goldstein, English, Shafer & Kaczmarek, 1997, Odom et al., 1999). Children with disabilities usually do not interact as successfully as typical children and often need specific instruction for the use of appropriate social interaction skills. Conversely, typical children also need instruction to interact appropriately with the children with disabilities. Research still is needed that focuses on social skills and social interaction instruction for young children in inclusive settings.

Based on the results of this study, the following areas are suggested for further study.

1. A variation of this study should be conducted that includes longer intervention and maintenance periods, as this may produce different results.
2. A variation of this study should be conducted that includes additional participants for a larger sample size that may produce different results.

3. Additional social interaction research should be conducted to increase the social interaction of young children with disabilities that relates to educational settings alternative to the inclusive preschool setting, such as self-contained settings, community settings, reverse-mainstreaming settings (e. g., more children with disabilities than typical children).
4. A variation of this study should be implemented that includes more teaching and implementation for each of the social skills that were taught during the intervention phase.
5. A study involving the typical teacher of the students to train the to social skills instruction and social interaction strategy should be conducted and may produce different results.
6. A study implementing the use of the social skills program and social interaction strategy with data collection in the natural environment (not in a separate classroom) of the inclusive preschool classroom with additional children available for interaction should be conducted.

### Summary

This study supports previous research that some form of intervention is necessary to help children with and without disabilities to interact appropriately in inclusive environments (Lee & Odom, 1996; Hanline, 1993; Jenkins, Spletz, & Odom, 1985).

Previous research also has investigated a variety of appropriate social interaction strategies and social skills training programs for children with and without disabilities in inclusive settings. As the inclusive educational setting becomes the preferred educational

context for young children with disabilities, the need for appropriate and effective social interaction/social skill programs increases.

Research has documented many different interventions for social interaction training, these include programs for children with disabilities, programs for children without disabilities, and a programs that work with both children with disabilities and their typical peers. This study contributes to the literature in that two different types of intervention were compared. One intervention was for the typical children to implement in an inclusive setting to increase interactions with the children with disabilities. The other intervention combined the first intervention with a social skills program in which the typical children and the children with disabilities participated.

The results of this study appear to indicate that the children with and without disabilities in both social interaction intervention groups increased their social interactions and improved their social behaviors. The children with disabilities in the single and combined intervention groups increased their level of effective social behaviors and decreased their levels of ineffective social behaviors. The children with and without disabilities in the single and combined intervention groups engaged in more positive social interactions across the seven weeks of the study, and the initial low level of negative behaviors remained low throughout the duration the study.

The perceptions of the teachers concerning the social skills (e. g., joining in, waiting your turn, sharing, and asking someone to play) of the children with and without disabilities in both intervention groups also increased across the three phases (e. g. baseline, intervention, and maintenance). However, according to the Social Interaction Observation System, the social interaction frequency count, and the Teacher/Staff

Skillstreaming Checklist, there were not any significant differences between the two intervention groups for the social interactions and the social skills of the children with and without disabilities.

The results of this study indicate that the typical children in an inclusive environment can make a large impact on the social interaction of the children with disabilities. The social interaction strategy that was taught to the typical children in the single and combined intervention groups seems to have been an effective strategy for increasing the social interactions within the triads of children (e. g., one child with a disability and two typical children). The combined intervention group participated in a social skills training program with the social interaction strategy. Although the children were rated by the teachers as improving their social skills, the social behaviors in this intervention group were not higher than the social behaviors of the children in the single intervention group, contrary to what was expected. It appears that the social skills program did not have the expected impact on the social interactions of the children with and without disabilities. The children participating in this study primarily benefited from the social interaction strategy and the diligence of the typical children in creating social interactions within the triads.

As inclusive settings become a more and more accepted educational context for young children with disabilities, the focus on social skills and social interactions must be considered as part of the instructional curriculum. For young children with disabilities to benefit from education in an inclusive environment there must be a level of social interaction with their typical peers because they all learn a variety of skills through interaction and play with each other. This includes appropriate and inappropriate

behavior, social roles, language development, following directions, social cues, etc..

Research to identify effective strategies to teach social interaction skills in the inclusive classroom is central to the mission of inclusion. Inclusion is the interaction of a variety of participants and the ability to interact appropriately is a skill that is essential to success not only in school, but throughout life.



APPENDIX A

GROUPING CHART

	Interaction Strategy Training (IST)	Social Skills Training (SST)
Group 1 (Single)	X	
Group 2 (Combined)	X	X

**APPENDIX B**

**PARENTAL CONSENT FORM**

## Parental Consent Form/Informed Consent

Title of Study: Increasing social interactions between children with and without disabilities in an inclusive setting.

Investigators: Judy Terpstra and Dr. Kyle Higgins

Protocol number:

Dear \_\_\_\_\_

Judy Terpstra, a doctoral student in the Department of Special Education will be conducting a research project at the UNLV/CSUN Preschool located on UNLV's campus.

Your child has been invited to participate in this research study. The purpose of the study is to research the effectiveness of interaction strategy training and social skills training on the social interactions of children with and without disabilities.

If you volunteer your child to participate in this study, he or she will be involved with the interaction strategy training or with interaction strategy training combined with social skills training. The children will receive training in a small group setting in the specific group they will be assigned to. The children will be taken with the trainer/researcher who is a licensed teacher and a preschool employee to the training which will occur in room 109. Room 109 is an empty classroom belonging to the preschool located to the left of the playground door. The children will be videotaped during a 15-minute play session four times per week for the duration of the study. The children's social skills and social interactions will be assessed before, during, and after the study. The teachers will complete a four question checklist on child's ability to perform four specific social skills. It is anticipated that the study will last for eight weeks.

Benefits of participation will be the validation of these training methods as an effective method to increase the social interactions among children. The study involves natural observation using the videos of the children in the preschool setting. Because of this there is minimal risk to the children from participation (physical, psychological, social or legal).

There will be no financial cost to you or your child for participation in this study because all activities and observations will take place during the normal course of the child's day at the UNLV/CSUN preschool. You or your child will not be compensated for your time. The University of Nevada, Las Vegas may not provide compensation or free medical care for an unanticipated injury sustained as a result of participating in this research study.

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

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you or your child to this study. All records will be stored in a locked facility at UNLV for at least three years after the completion of the study. After the storage time the information gathered will be destroyed.

Thank you,

Judy Terpstra

Please check and initial one of the following:

I hereby authorize Judy Terpstra to observe and videotape my child and allow her to access my child's portfolio and other files contained within the preschool for the purpose of conducting research at the UNLV/CSUN Preschool. Further, I understand that my child's first name and information such as age, gender, ethnicity, and other non-identifying information will be provided to the investigator because she has a legitimate need to know for educational and related purposes, such as research.

I do not wish my child to participate in the study described at this time.

By signing this form, I am acknowledging my understanding of this study and I agree to allow my child, \_\_\_\_\_ to participate.

Signature of parent or guardian \_\_\_\_\_ Date \_\_\_\_\_

If you have any questions or concern about this study, you may contact:

Dr. Kyle Higgins or Judy Terpstra in the UNLV Department of Special Education at 895-3205.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 895-2794.

**APPENDIX C**

**TEACHER CONSENT FORM**

## Teacher Consent Form

### Informed Consent

Title of Study: Increasing social interactions between children with and without disabilities in an inclusive setting.

Investigators: Judy Terpstra and Dr. Kyle Higgins

Protocol number:

Dear \_\_\_\_\_

Judy Terpstra, a doctoral student in the Department of Special Education will be conducting a research project at the UNLV/CSUN Preschool located on UNLV's campus.

You have been invited to participate in this research study. The purpose of the study is to research the effectiveness of interaction strategy training and social skills training on the social interactions of children with and without disabilities.

If you volunteer to participate in this study, specific children in your will be involved with the interaction strategy training or with the interaction strategy training combined with social skills training. The children will receive training in a small group setting in the specific group they will be assigned to. The children will be videotaped during a 15-minute play session four times per week for the duration of the study. The children's social skills and social interactions will be assessed before, during, and after the study. You will be asked to complete a four question checklist on each child's ability to perform four specific social skills. It is anticipated that the study will last for eight weeks.

Benefits of participation will be the validation of these training methods as an effective method to increase the social interactions among children. The study involves natural observation using the videos of the children in the preschool setting. Because of this there is minimal risk to the children from participation (physical, psychological, social or legal).

There will be no financial cost to you for participation in this study because all activities and observations will take place during the normal course of your day at the UNLV/CSUN preschool. You will not be compensated for your time. The University of Nevada, Las Vegas may not provide compensation or free medical care for an unanticipated injury sustained as a result of participating in this research study.

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

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for at least 3 years after the completion of the study. After the storage time the information gathered will be destroyed.

Thank you,

Judy Terpstra



Please check and initial one of the following:

I hereby authorize Judy Terpstra to observe, videotape me for the purpose of this research project. And I agree to participate in this study by evaluating the children in my class who are assigned to this study,

I do not wish to participate in the study described at this time.

Signature of teacher \_\_\_\_\_ Date \_\_\_\_\_

If you have any questions or concerns about this study, you may contact:  
Dr. Kyle Higgins or Judy Terpstra in the UNLV Department of Special Education at 895-3205.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 895-2794.

**APPENDIX D**

**TEACHER/STAFF SKILLSTREAMING CHECKLIST**

---

## Teacher/Staff Skillstreaming Checklist

McGinnis & Goldstein, 2003

**INSTRUCTIONS:** Listed below you will find a number of skills that children are more or less proficient at using. This checklist will help you evaluate how well each child uses the various skills. For each child, rate his/her use of each skill, based on your observations of his/her behavior in various situations.

Circle 1 if the child is *almost never* good at using the skill.

Circle 2 if the child is *seldom* good at using the skill.

Circle 3 if the child is *sometimes* good at using the skill.

Circle 4 if the child is *often* good at using the skill.

Circle 5 if the child is *almost always* good at using the skill.

Please rate the child on all skills listed. If you know of a situation in which the child has particular difficulty using the skill well, please note it briefly in the space marked "Problem Situation."

Teacher/Staff Skillstreaming Checklist

McGinnis & Goldstein, 2003

Student \_\_\_\_\_ Class/Age \_\_\_\_\_

Teacher/staff \_\_\_\_\_ Date \_\_\_\_\_

Please complete the following items according to the directions on the previous page.

1 2 3 4 5 1. Joining In: Does the child use acceptable ways of joining in an ongoing activity or group?

Problem Situation:

1 2 3 4 5 2. Waiting Your Turn: Does the child wait his/her turn when playing a game with others?

Problem Situation:

1 2 3 4 5 3. Sharing: Does the child share most materials and toys with peers?

Problem Situation:

1 2 3 4 5 4. Asking Someone to Play: Does the child ask other children to play or extend an invitation to others to join in his/her activity?

Problem Situation:

APPENDIX E

SOCIAL INTERACTION OBSERVATION SYSTEM (SIOS)

---

## SOCIAL INTERACTION OBSERVATION SYSTEM

Complete section A before beginning the observation.

### SECTION A:

Observer: \_\_\_\_\_ School: \_\_\_\_\_

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

First name      Last name

Observation #    1   2   3   4

Time begin: \_\_\_\_\_ Time end: \_\_\_\_\_

Live      Video # of agreements of \_\_\_\_\_

Complete section B after completing Section A

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

**SECTION B. OBSERVATIONAL DATA**

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

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



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

APPENDIX F

INTERACTION FREQUENCY COUNT DATA SHEET

Interaction Frequency Count Data Sheet

(in 2 minutes, 5 second observe, 5 second record)

Key:

+ positive interaction

- negative interaction

I observed child initiated the interaction

R observed child responded to an initiation from another child

T interaction with a child with a disability (target child)

P interaction with a child without a disability (peer)

Session: \_\_\_\_\_

Child:

Child:

Child:

1		13		1		13		1		13	
2		14		2		14		2		14	
3		15		3		15		3		15	
4		16		4		16		4		16	
5		17		5		17		5		17	
6		18		6		18		6		18	
7		19		7		19		7		19	
8		20		8		20		8		20	
9		21		9		21		9		21	
10		22		10		22		10		22	
11		23		11		23		11		23	
12		24		12		24		12		24	

APPENDIX G

PERMISSION LETTER

FOR THE TEACHER/STAFF SKILLSTREAMING CHECKLIST

**Permission to Use Copyrighted Material**

**University of Nevada, Las Vegas**

I, \_\_\_\_\_

holder of copyrighted material entitled Teacher/Staff Skillstreaming Checklist,

2003

authored by Ellen McGinnis, Ph.D and Arnold P. Goldstein, Ph.D

and originally published in Skillstreaming in Early Childhood, Revised Edition. New Strategies and Perspectives for Teaching Prosocial Skills, 2003

hereby give permission for the author to use the above described material in total or in part for inclusion in a doctoral dissertation at the University of Nevada, Las Vegas.

I also agree that the author may execute the standard contract with University Microfilms, Inc. for microform reproduction of the completed dissertation including the materials to which I hold copyright.

\_\_\_\_\_

Signature

Date

\_\_\_\_\_

Name (typed)

Title

\_\_\_\_\_

Representing

APPENDIX H

PERMISSION LETTER

FOR THE SOCIAL INTERACTION OBSERVATION SYSTEM

**Permission to Use Copyrighted Material**

**University of Nevada, Las Vegas**

I, Shirin Antia, Ph.D.  
holder of copyrighted material entitled Social Interaction Observation System, 1990-1991

authored by Katheryn Kreimeyer, Ph.D., Shirin Antia, Ph.D., Lisa Coyner, M. S., Nancy Eldredge, Ph.D., and Abha Gupta, M. A.

and originally published in Social Interaction Observation System, Project Interaction, University of Arizona, 1990-1991.

hereby give permission for the author to use the above described material in total or in part for inclusion in a doctoral dissertation at the University of Nevada, Las Vegas.

I also agree that the author may execute the standard contract with University Microfilms, Inc. for microform reproduction of the completed dissertation including the materials to which I hold copyright.

---

Signature

Date

Shirin Antia, Ph.D

---

Name (typed)

Title

University of Arizona

---

Representing

## APPENDIX I

### SOCIAL SKILLS LESSON FORMAT

#### Social Skills Lesson Format

---

##### Monday

- Introduction to skill and skill steps.
- Two modeling examples of skill with steps.
- Discussion of when and how to use skill.

##### Tuesday

- Review need for skill and review skill steps.
- One modeling example.
- Three role-play sessions with performance feedback.

##### Wednesday

- Review need for skill and review skill steps.
- One modeling example.
- Three role-play sessions with performance feedback.

##### Thursday

- Review need for skill and review skill steps.
- One modeling example.
- Three role-play sessions with performance feedback.

**APPENDIX J**

**SKILLSTREAMING STEPS**

---



## Steps for Skillstreaming Social Skills

### Joining In

1. Move Closer.
2. Watch.
3. Ask. (“Can I play”, “That looks like fun”)

### Waiting Your Turn

1. Say, “It’s hard to wait but I can do it.”
2. Choose.
  - a. Wait quietly.
  - b. Do something else.
3. Do it.

### Sharing

1. Make a sharing plan (playing with a toy together, taking turns, etc.).
2. Ask (ask friends to agree to the plan).
3. Do it.

### Asking Someone to Play

1. Decide if you want to.
2. Decide who.
3. Ask.

APPENDIX K

TRAINING SCHEDULE

Training Schedule

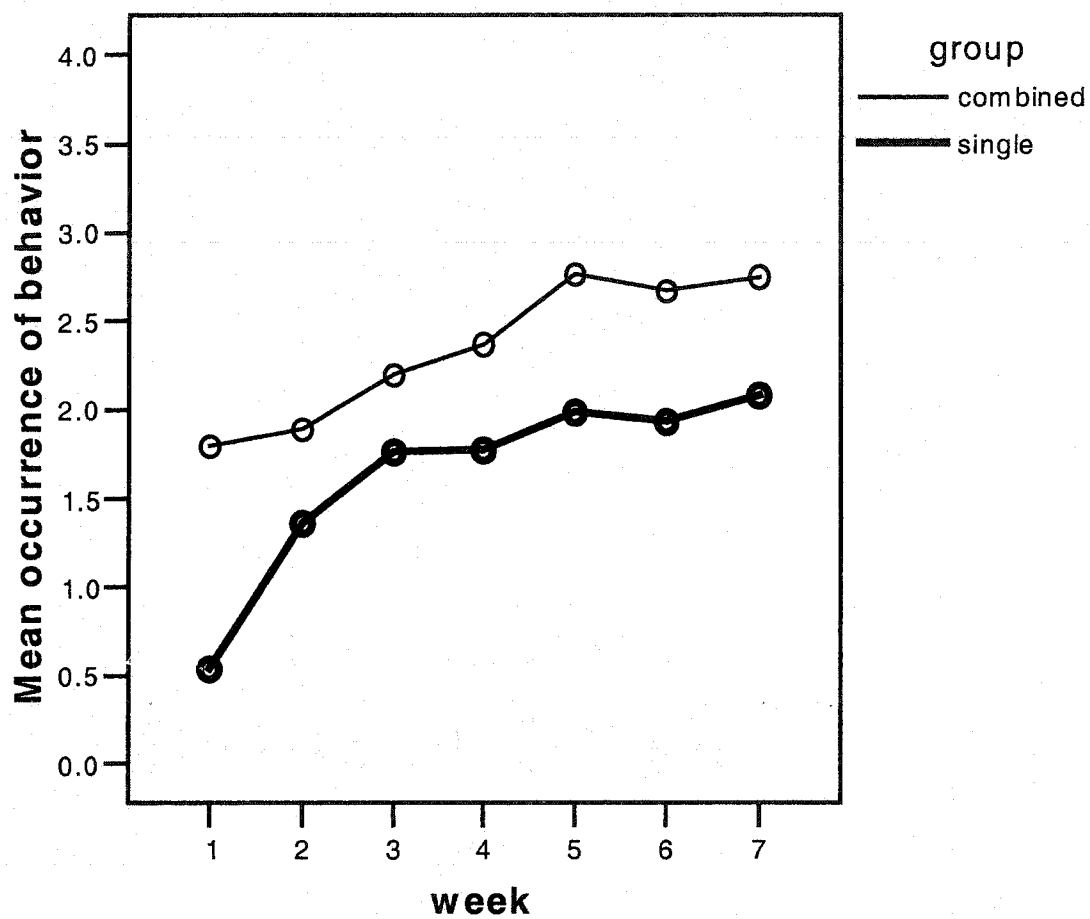
	Pre-phase	Phase 1	Phase 2				Phase 3-maintenance		Phase 4	
	Prior to start	1	2	3	4	5	6	7	8	8 (last day)
Single Intervention Group	Consent Triad assignment	Pretesting Baseline	Strategy Training	Reminder session Play Session		Intervention -Posttest Play Session		Play Session	Maintenance-Posttest	
Combined Intervention Group	Consent Triad assignment	Pretesting Baseline	Strategy Training	Social skills training Reminder session Play Session		Intervention -Posttest Play session		Play Session	Maintenance-Posttest	

**APPENDIX L**

**FIGURES FOR SOCIAL INTERACTION OBSERVATION SYSTEM**

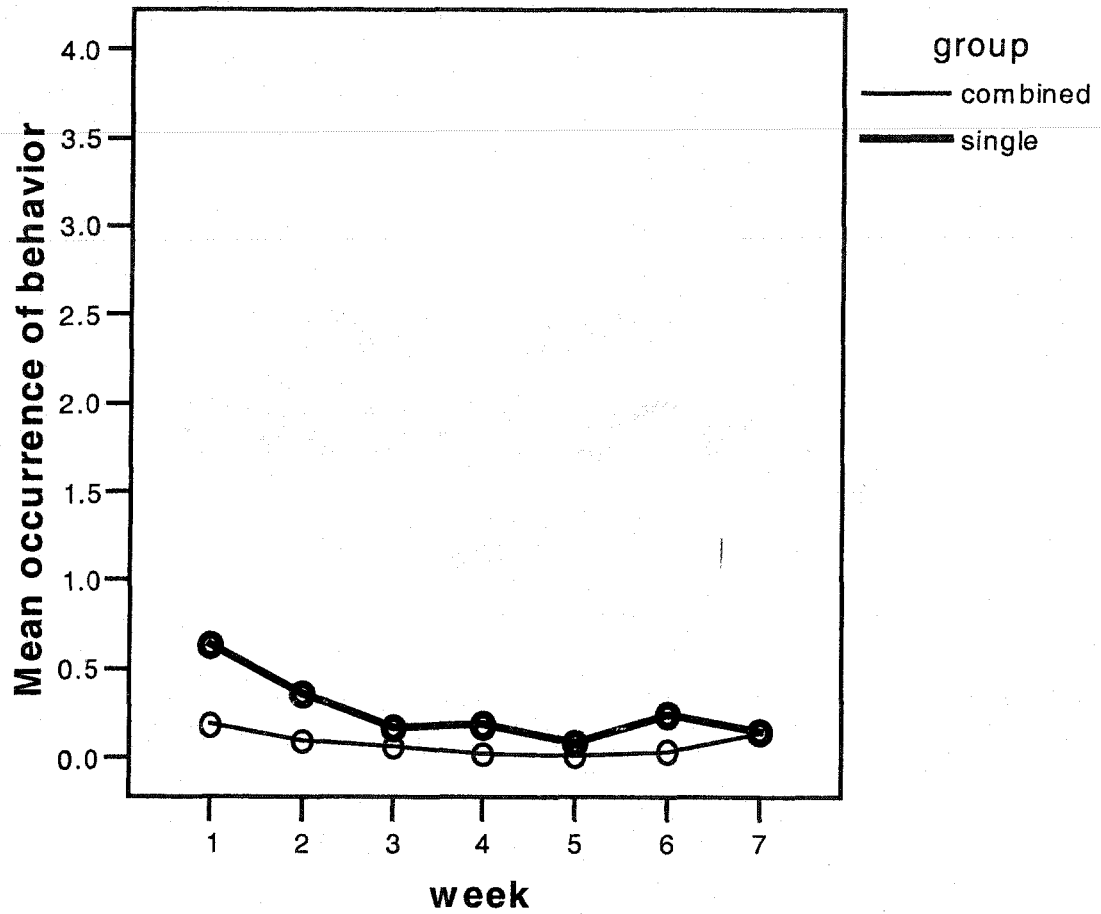
---

Figure 1. Effective behaviors.



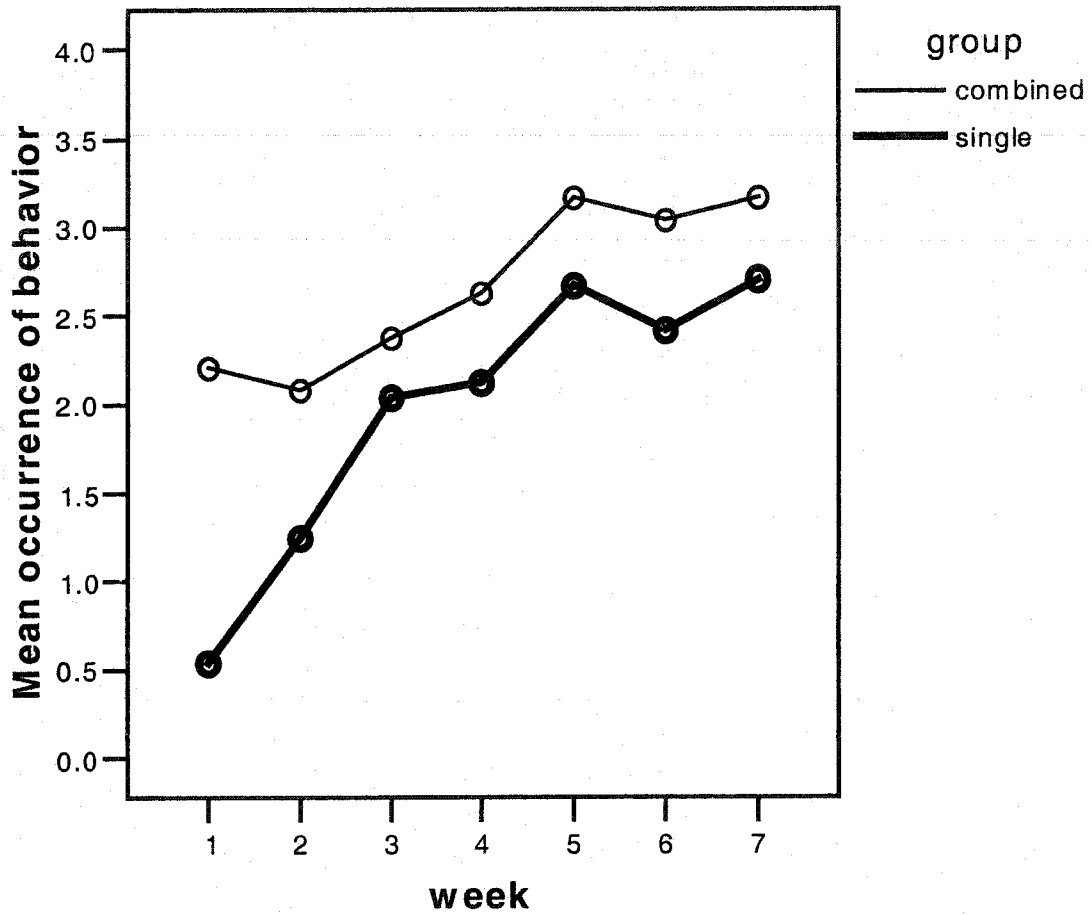
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 2. Ineffective behaviors.



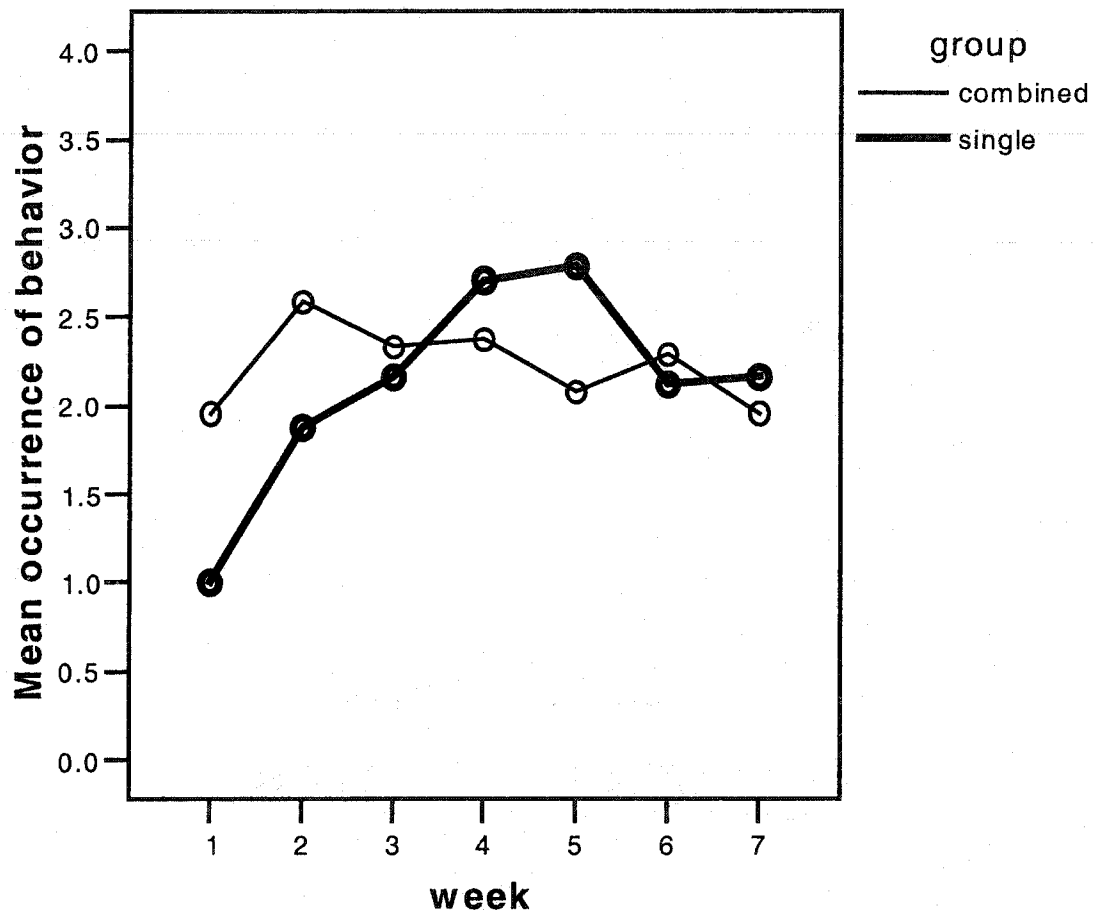
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 3. Effective behaviors: Positive interactions.



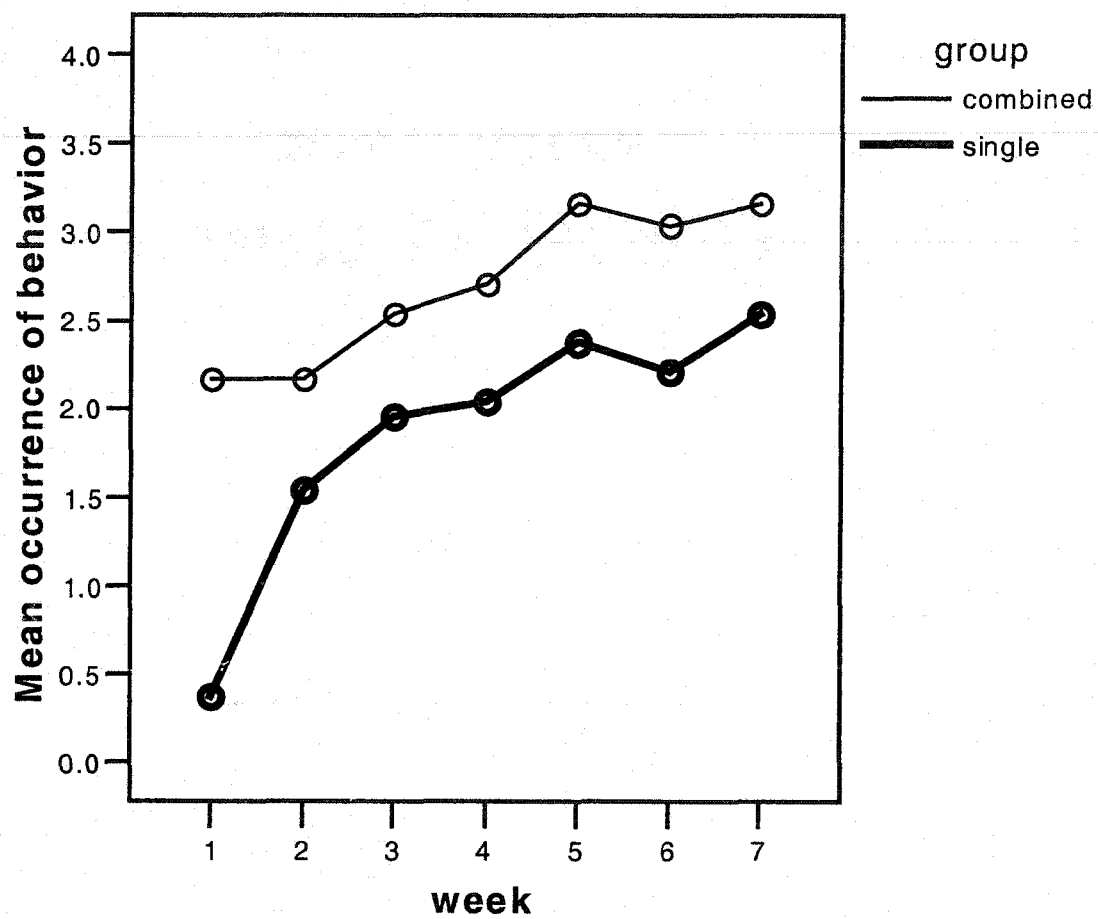
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 4. Effective behaviors: Parallel play.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

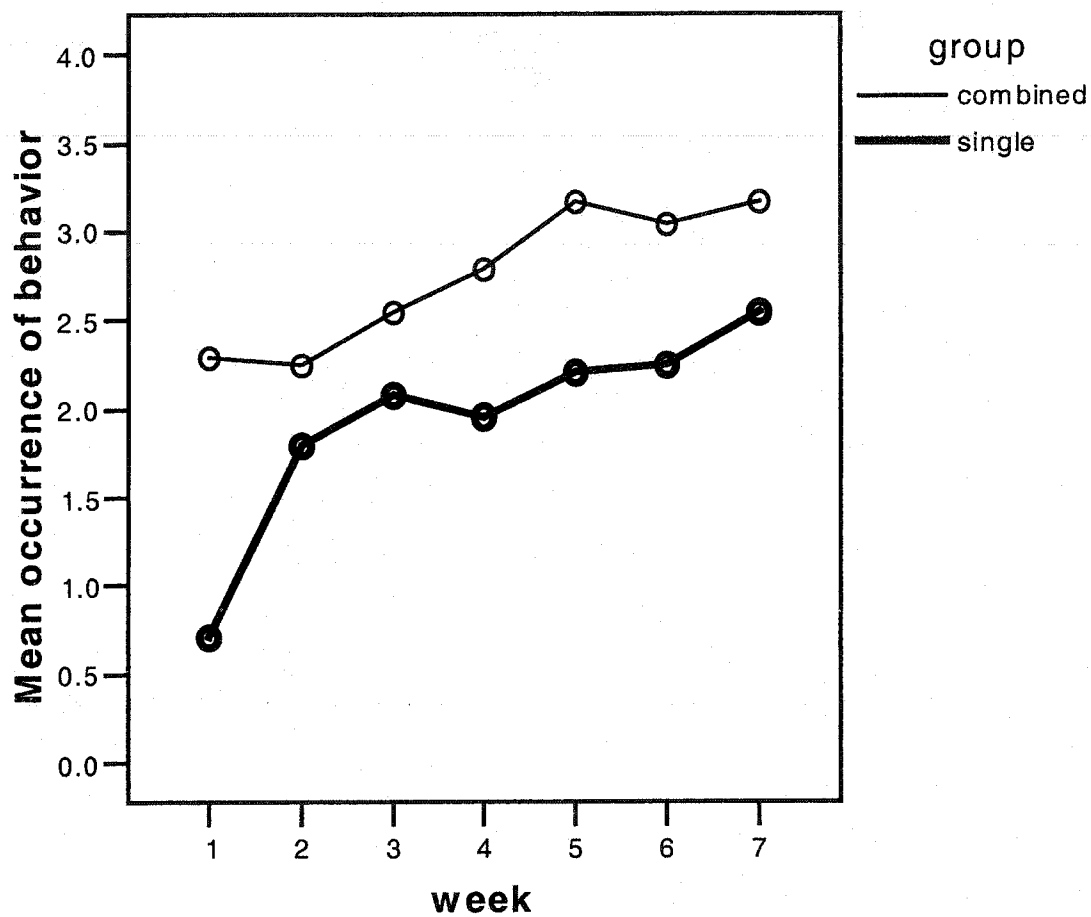
Figure 5. Effective behaviors: Associative and/or cooperative play.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

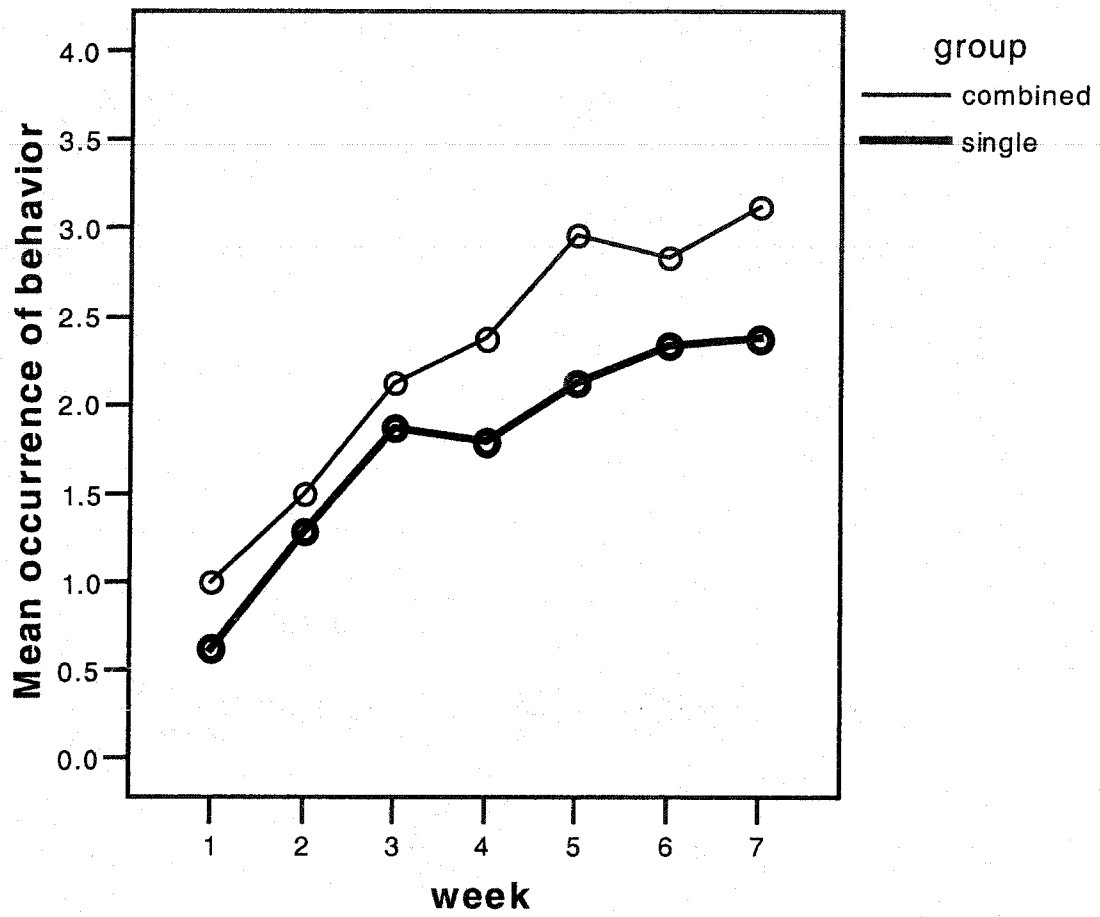


Figure 6. Effective behaviors: Positive linguistic interaction.



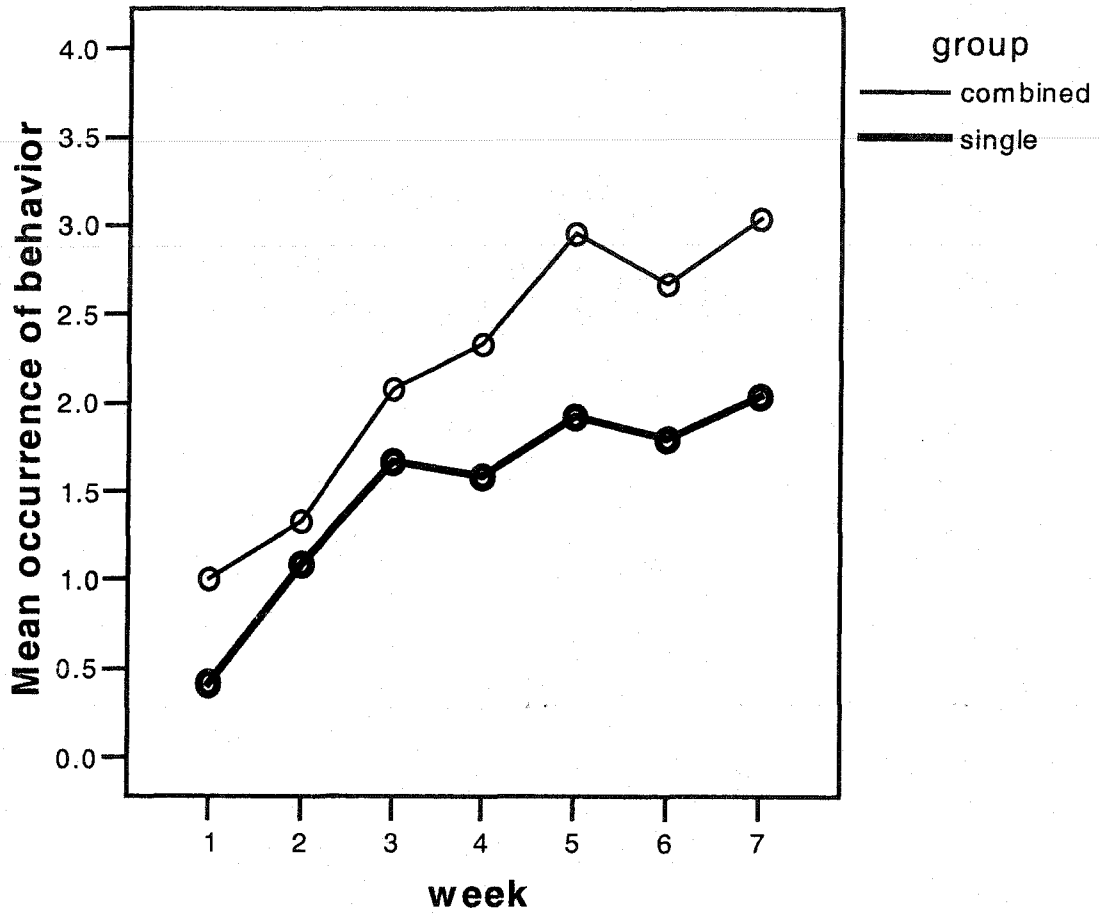
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 7. Effective behaviors: Peer initiates interaction.



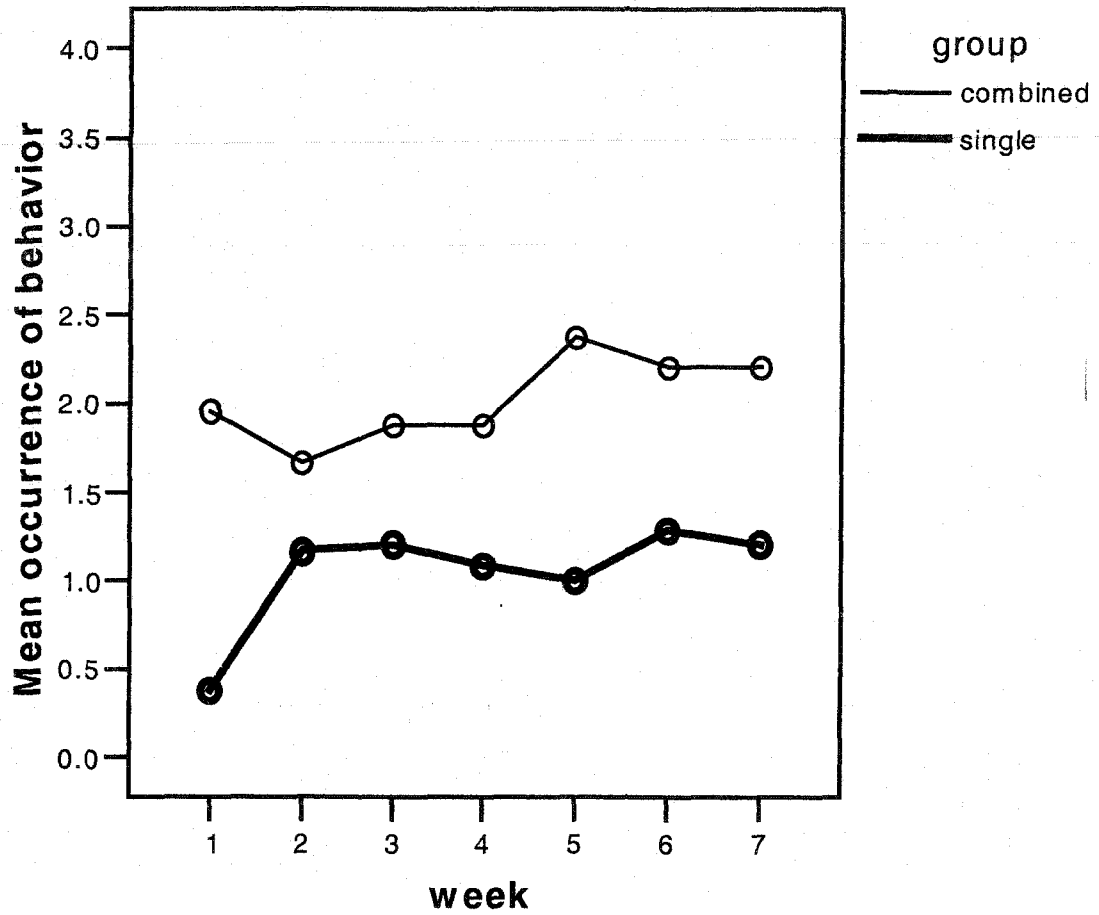
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 8. Effective behaviors: Child responds positively.



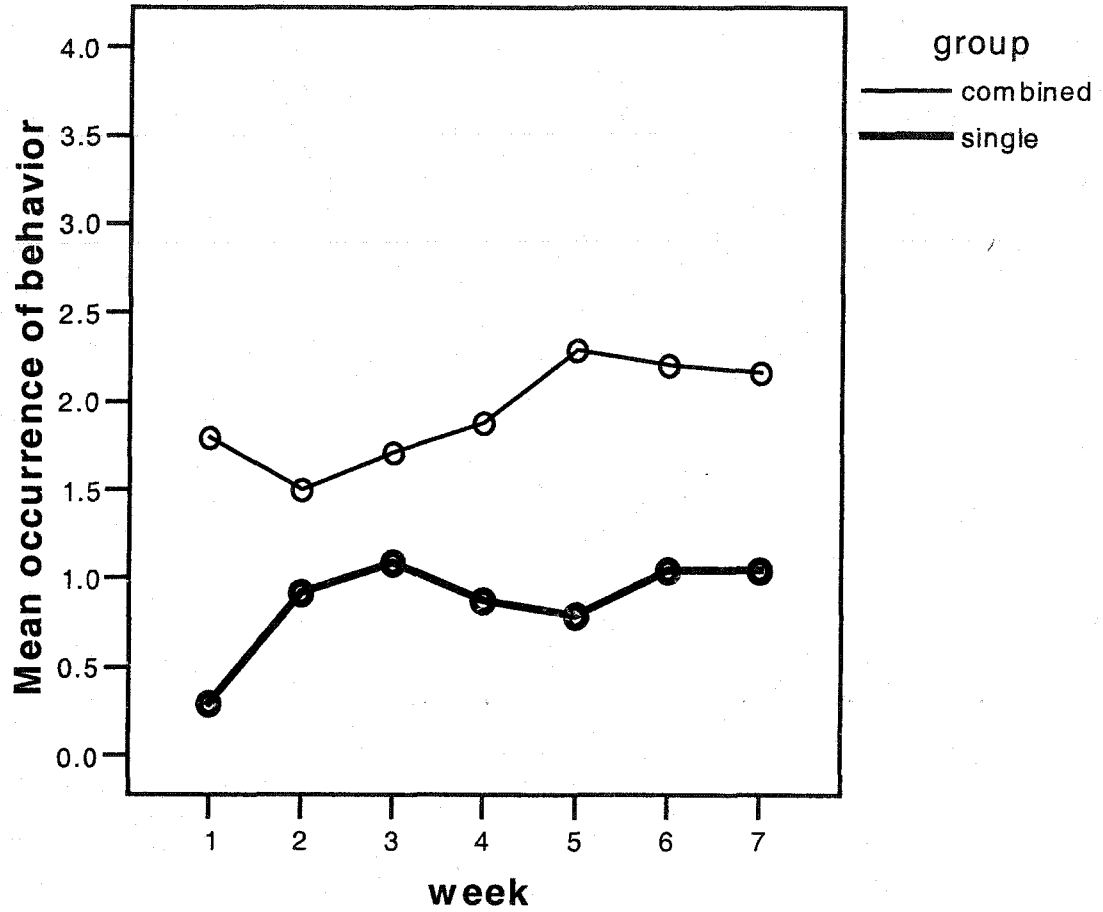
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 9. Effective behaviors: Child initiates interaction.



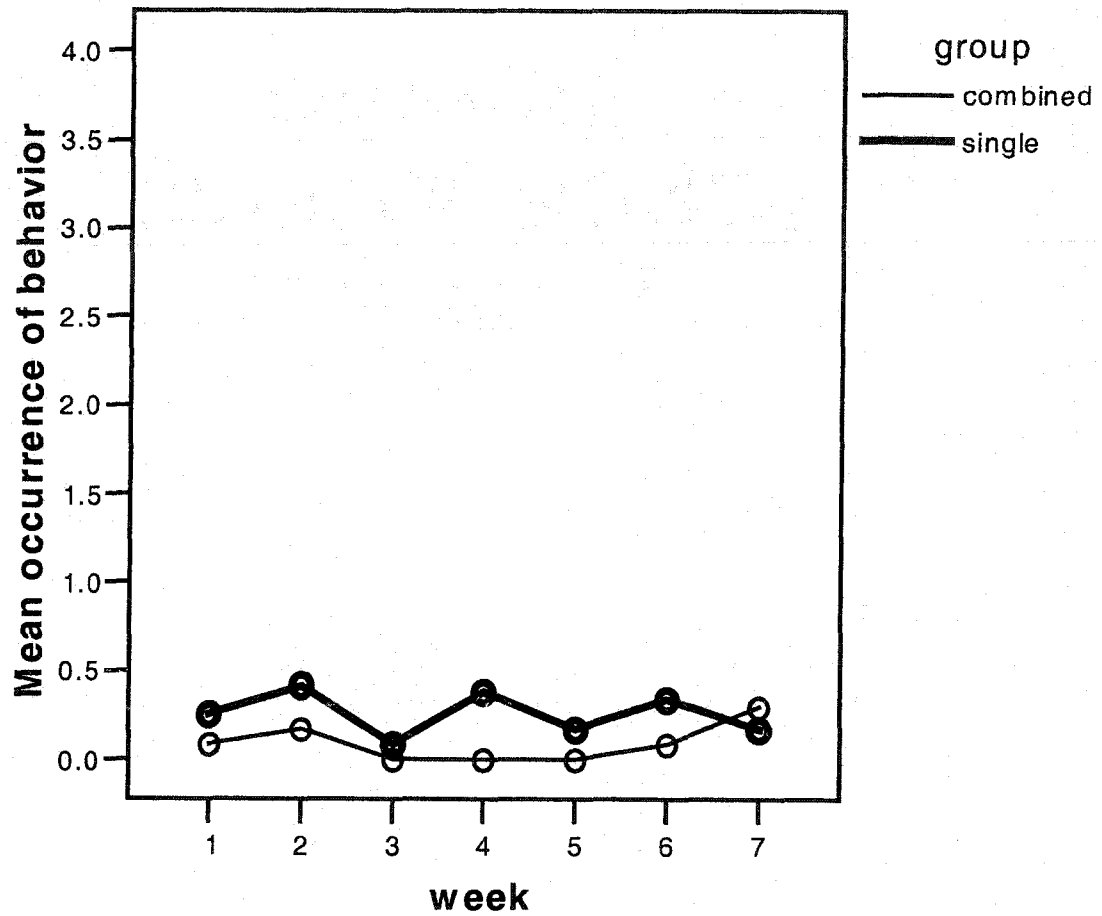
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 10. Effective behaviors: Peer responds positively.



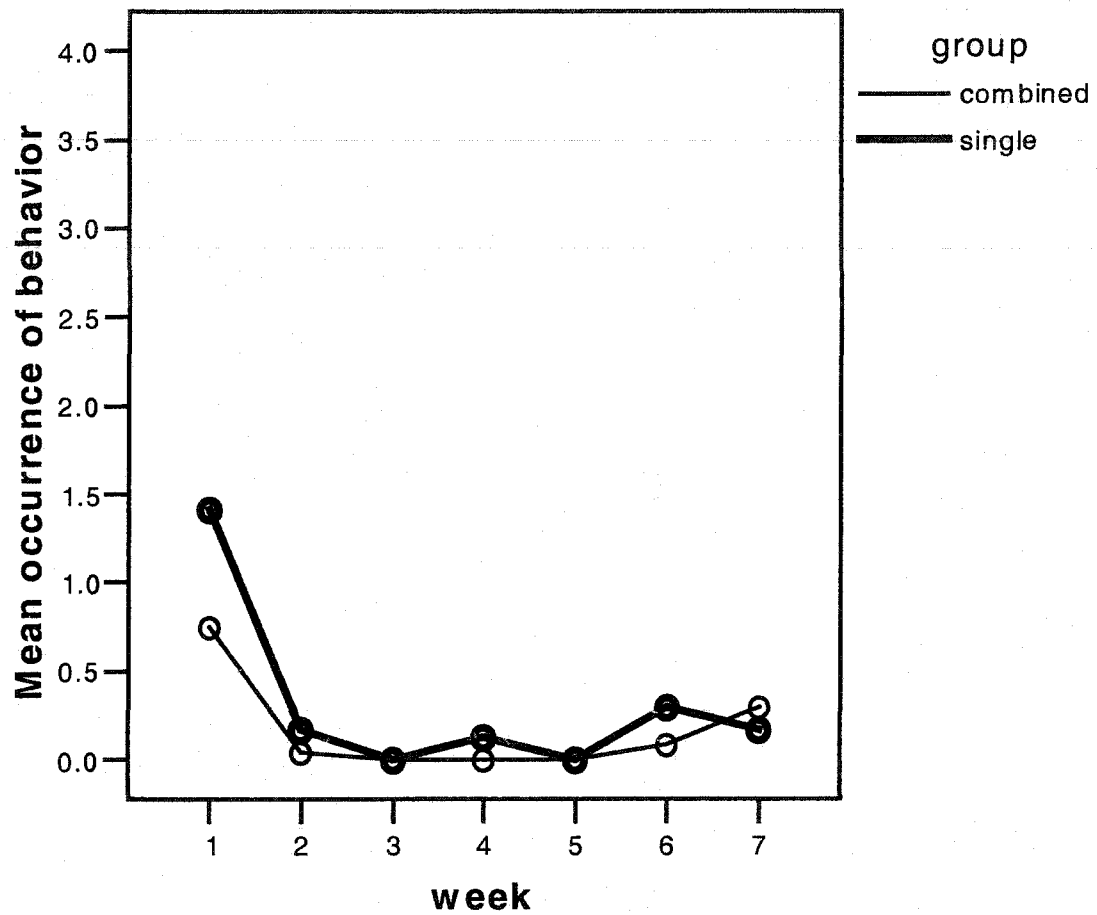
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 11. Ineffective behaviors: Negative behavior.



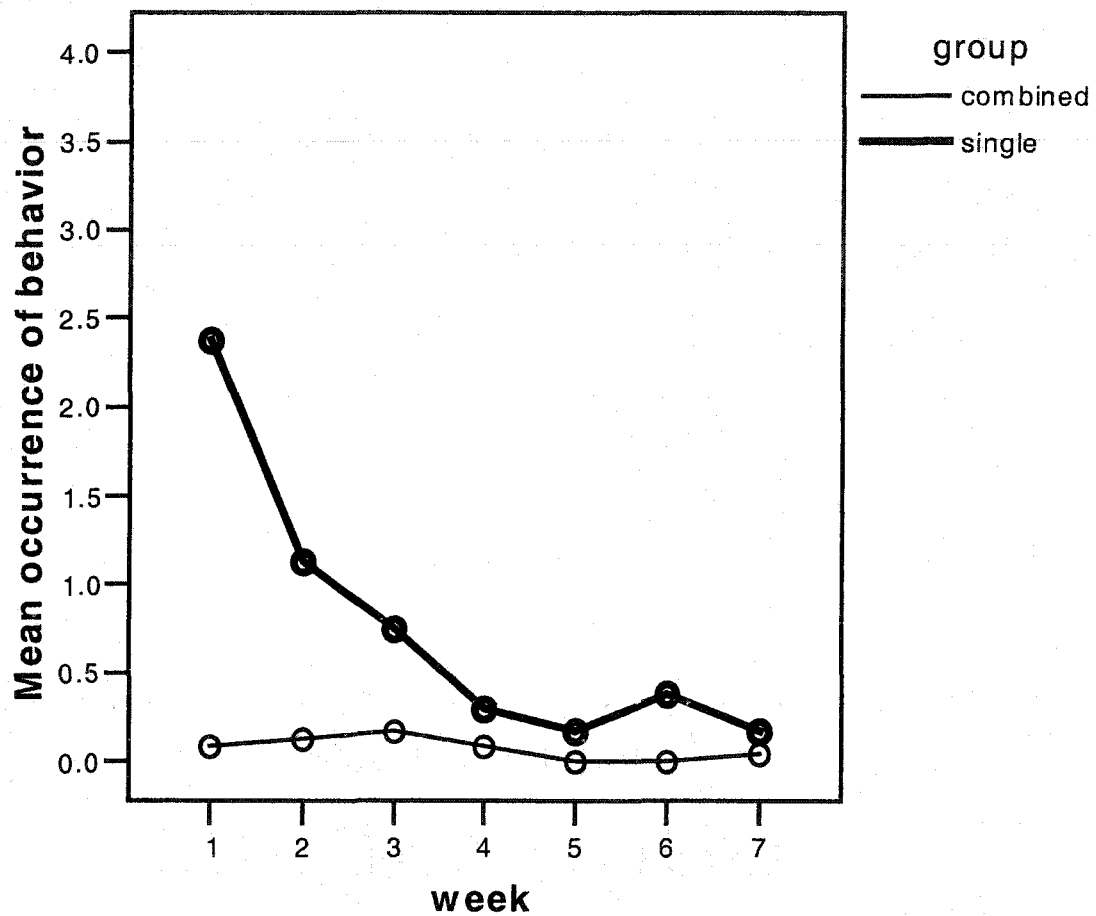
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 12. Ineffective behaviors: Non-play behaviors.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

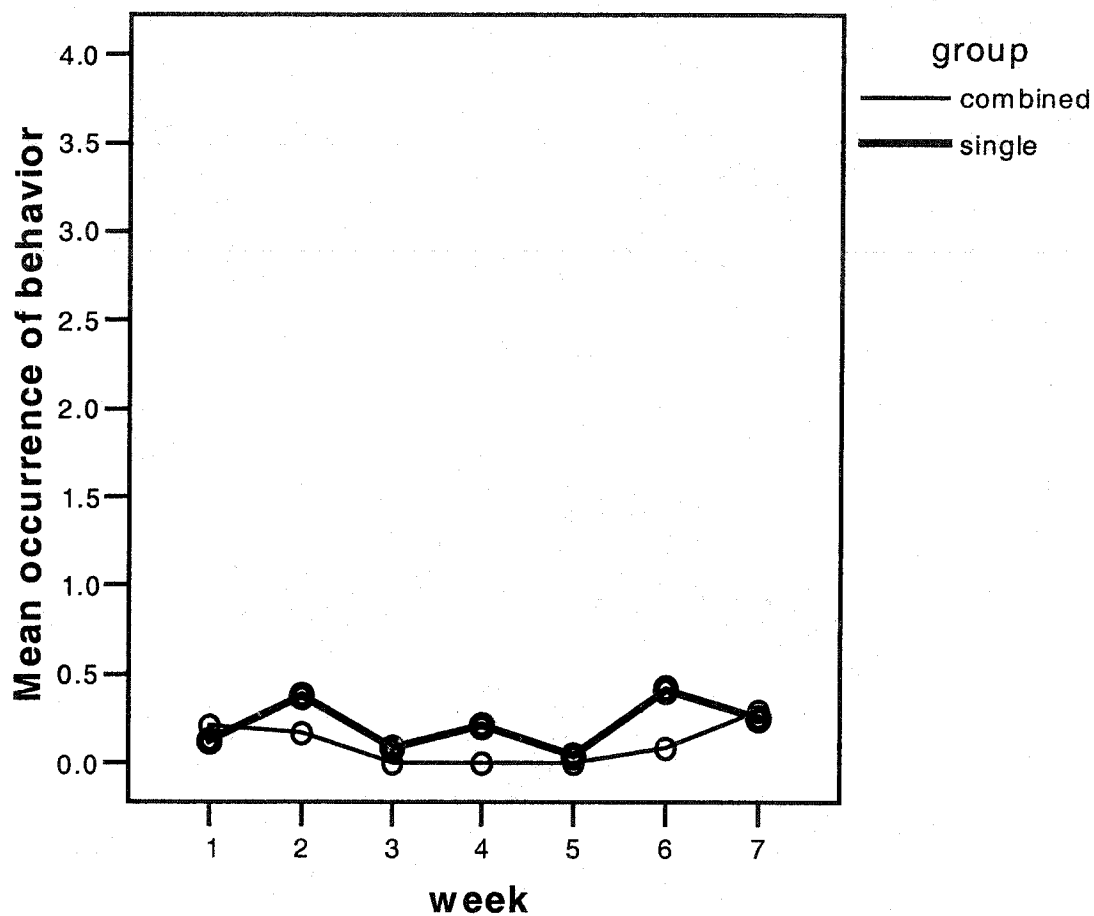
Figure 13. Ineffective behaviors: Solitary play.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

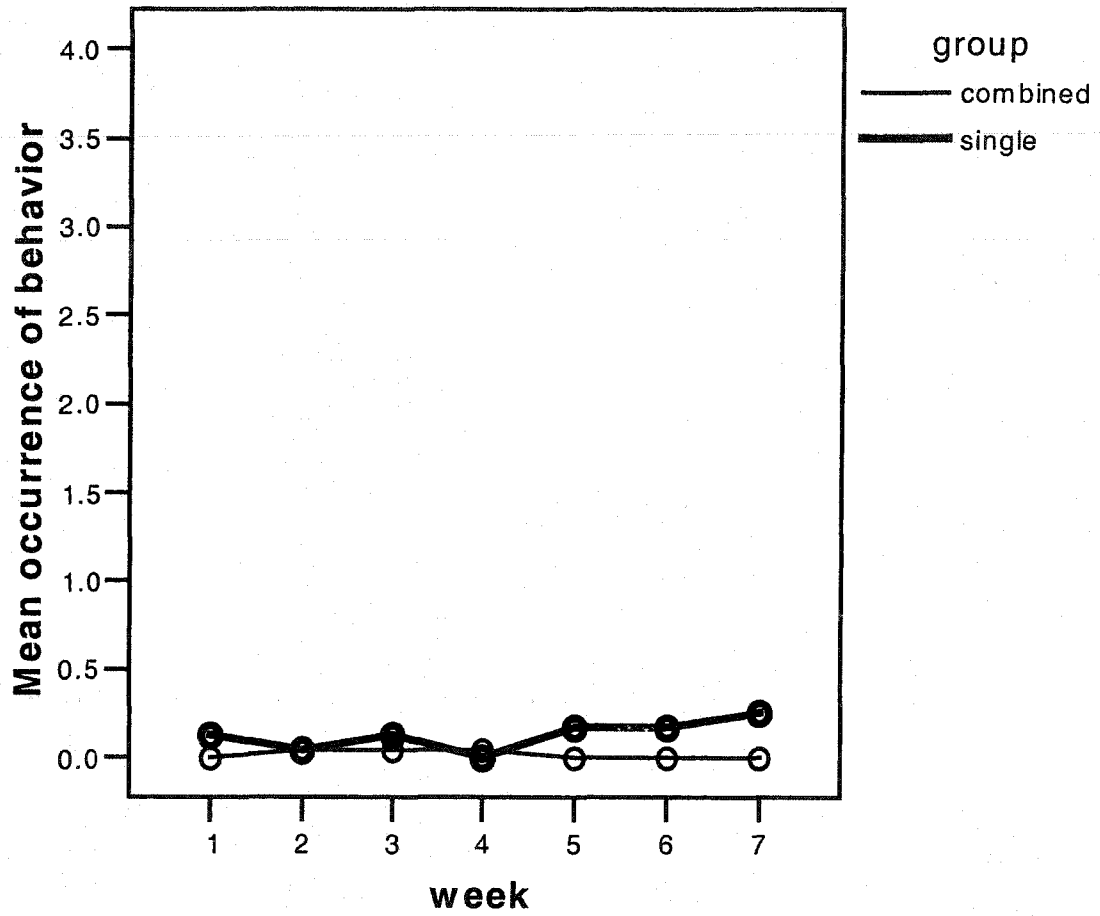


Figure 14. Ineffective behaviors: Child responds negatively.



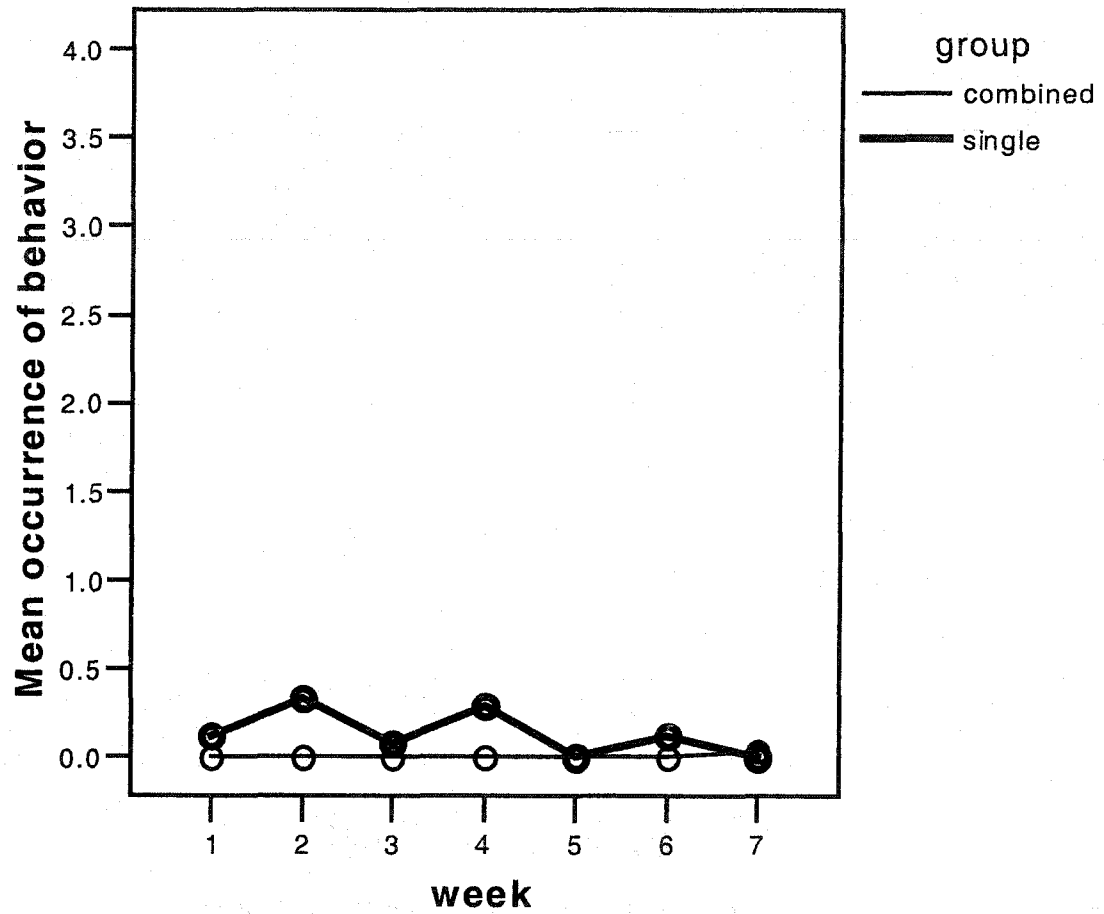
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 15. Ineffective behaviors: Child makes no response.



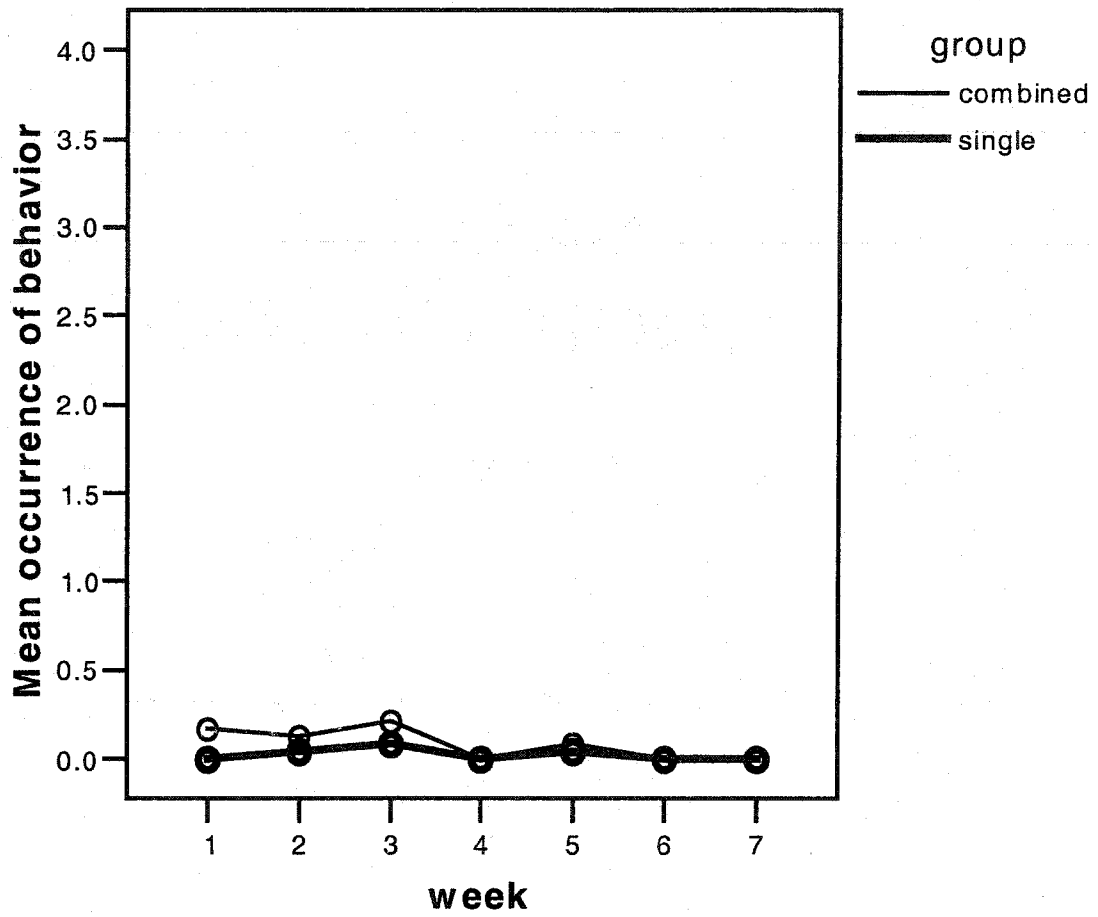
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 16. Ineffective behaviors: Peer responds negatively.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 17. Ineffective behaviors: Peer makes no response.

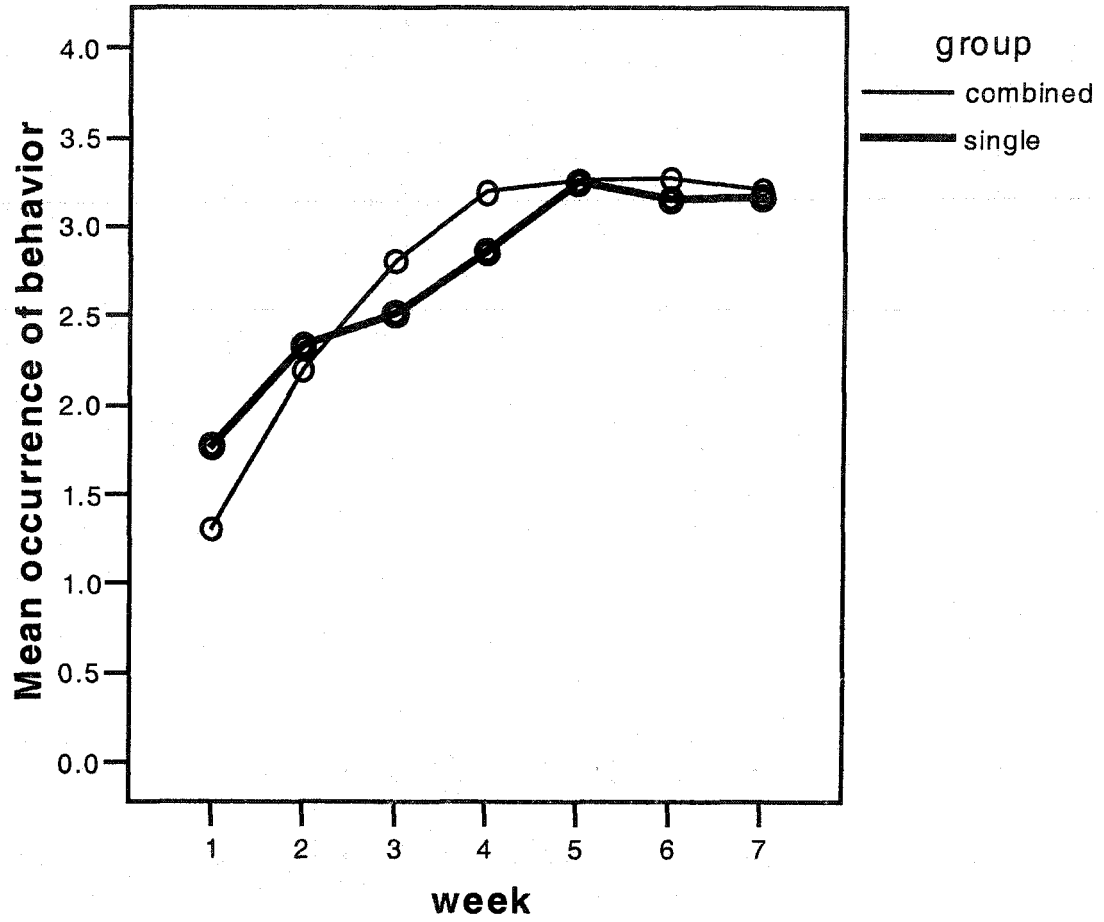


Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

APPENDIX M

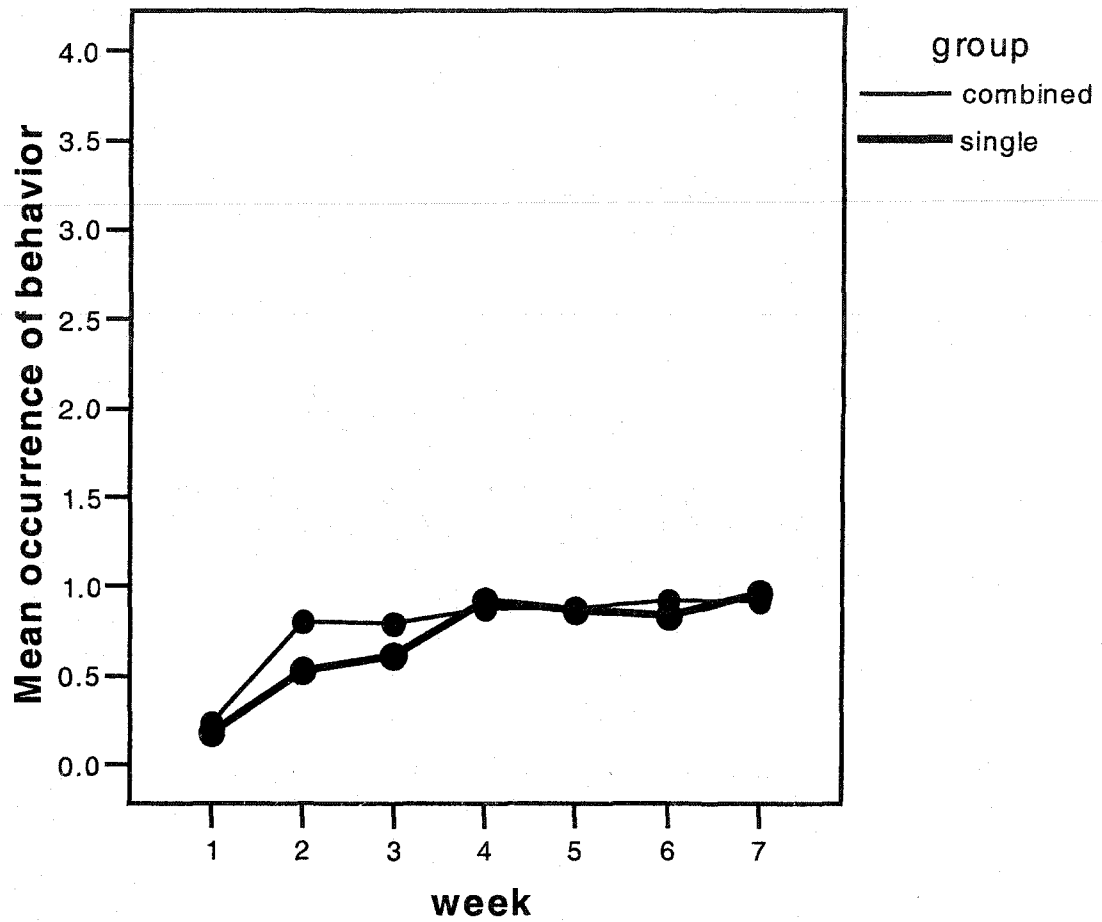
FIGURES FOR SOCIAL INTERACTION FREQUENCY COUNT

Figure 1. Positive initiation to a peer.



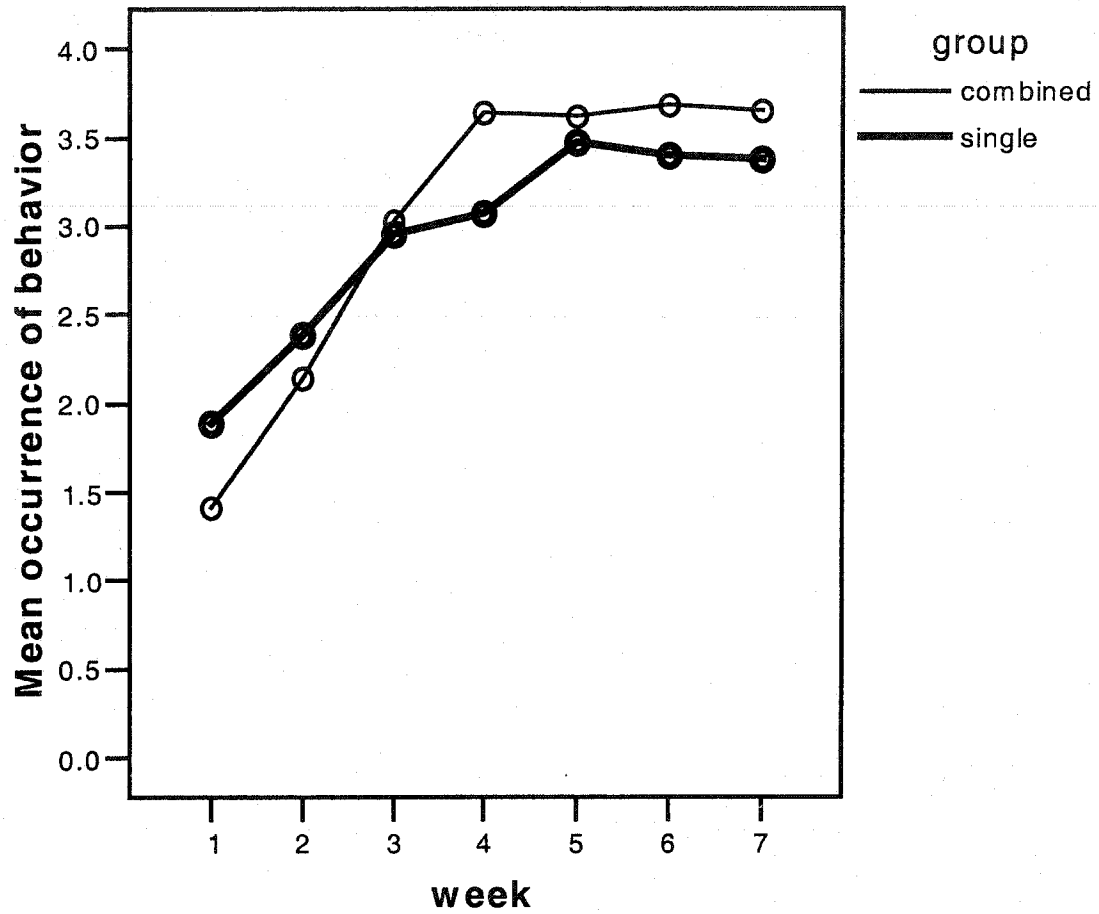
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 2. Positive initiation to a target child.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

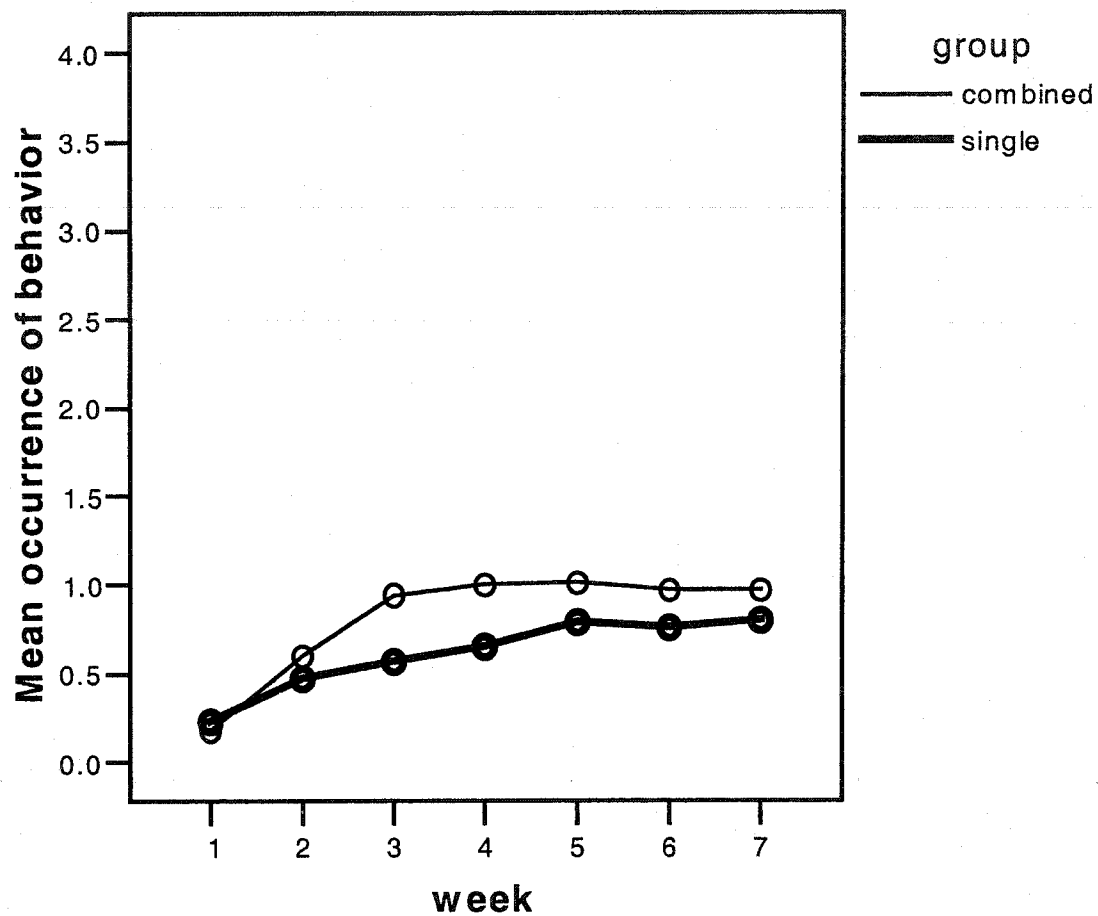
Figure 3. Positive response to a peer.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

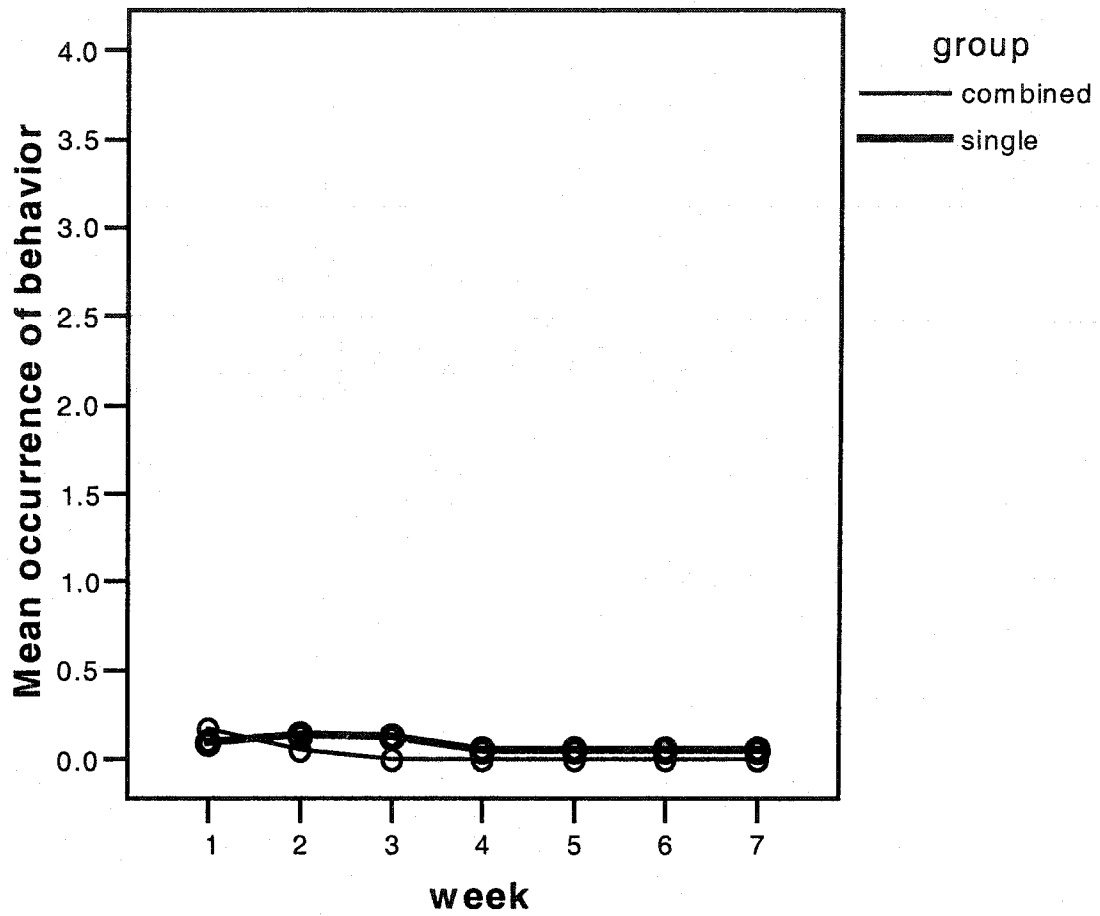


Figure 4. Positive response to a target child.



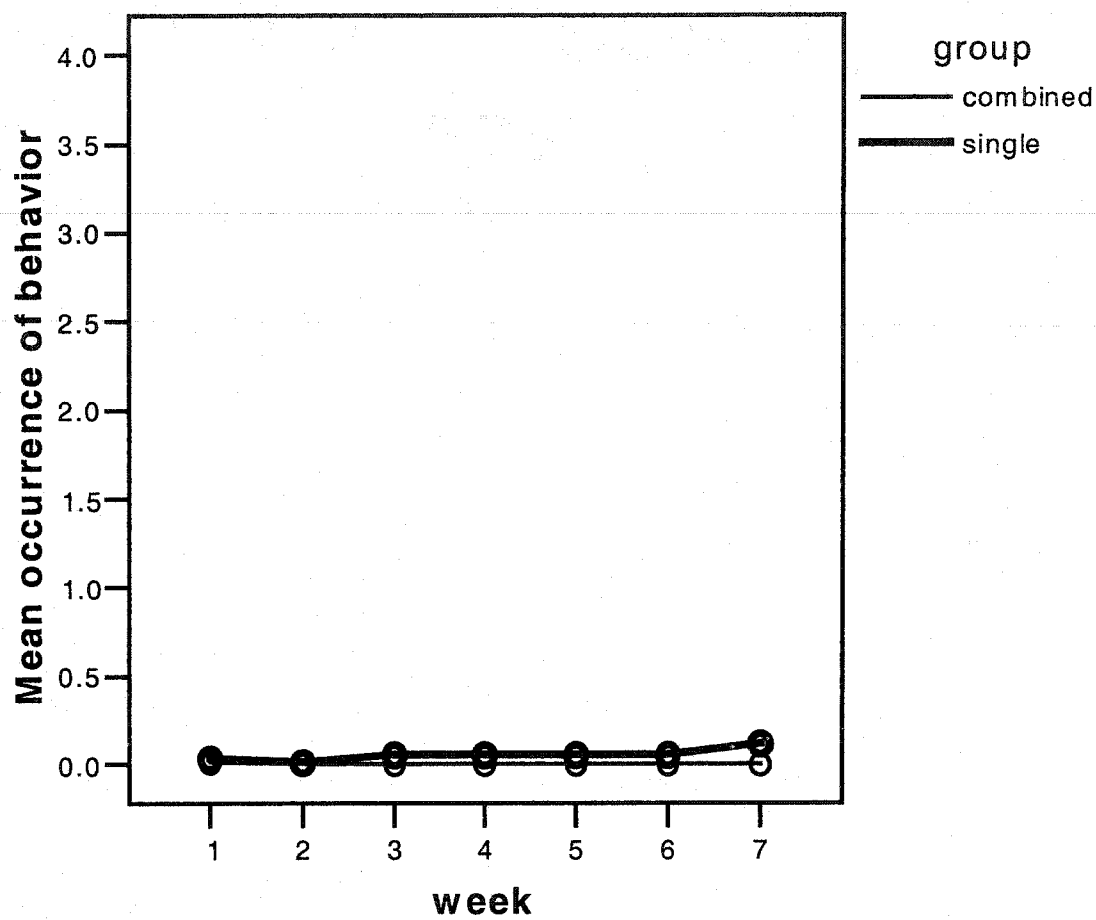
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 5. Negative initiation to a peer.



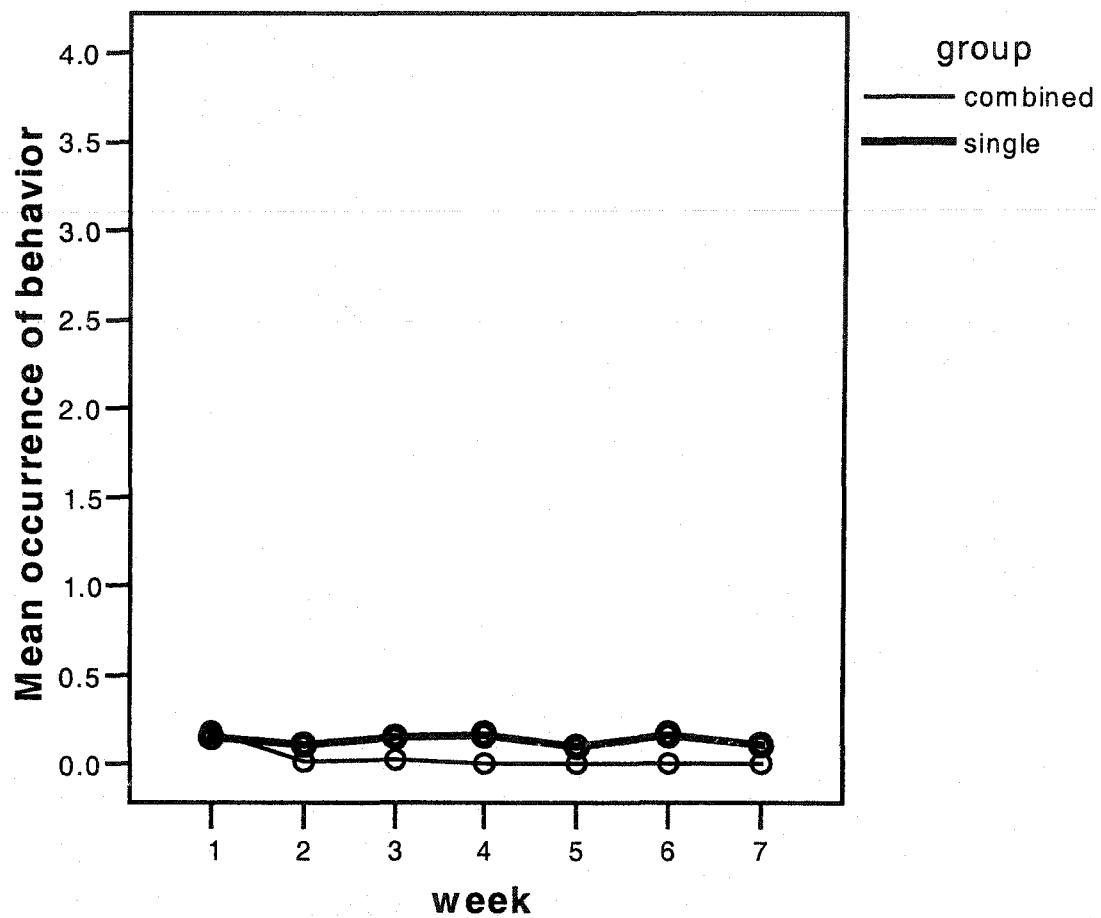
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 6. Negative initiation to a target child.



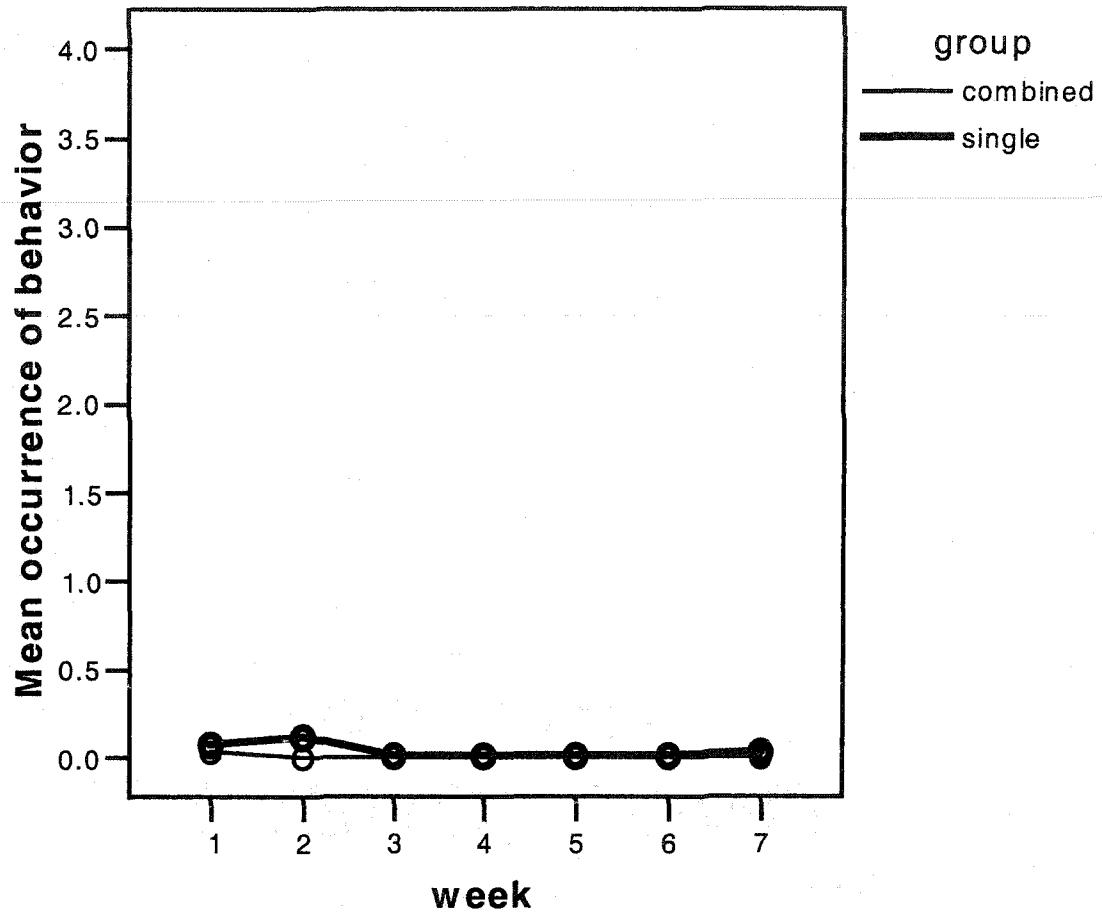
Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 7. Negative response to a peer.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 8. Negative response to a target child.

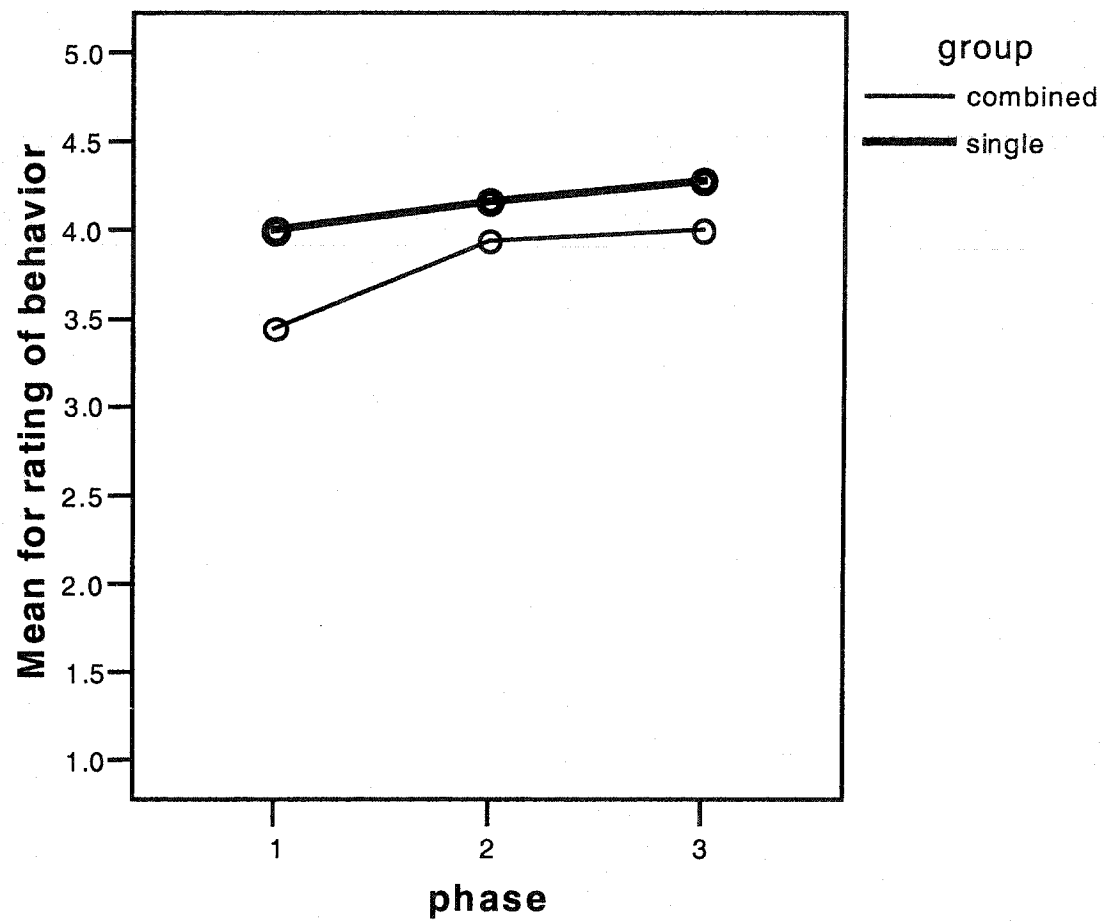


Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

APPENDIX N

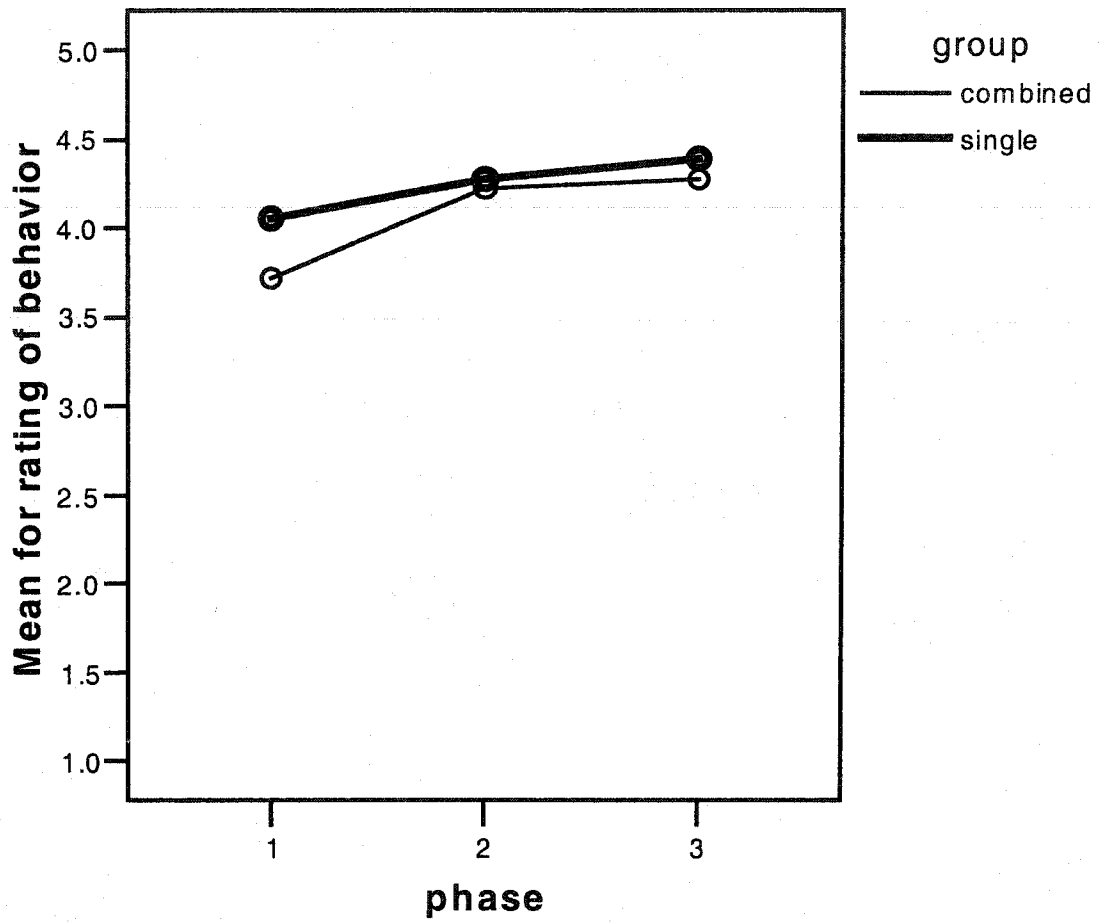
FIGURES FOR TEACHER/STAFF SKILLSTREAMING CHECKLIST

Figure 1. Joining in.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

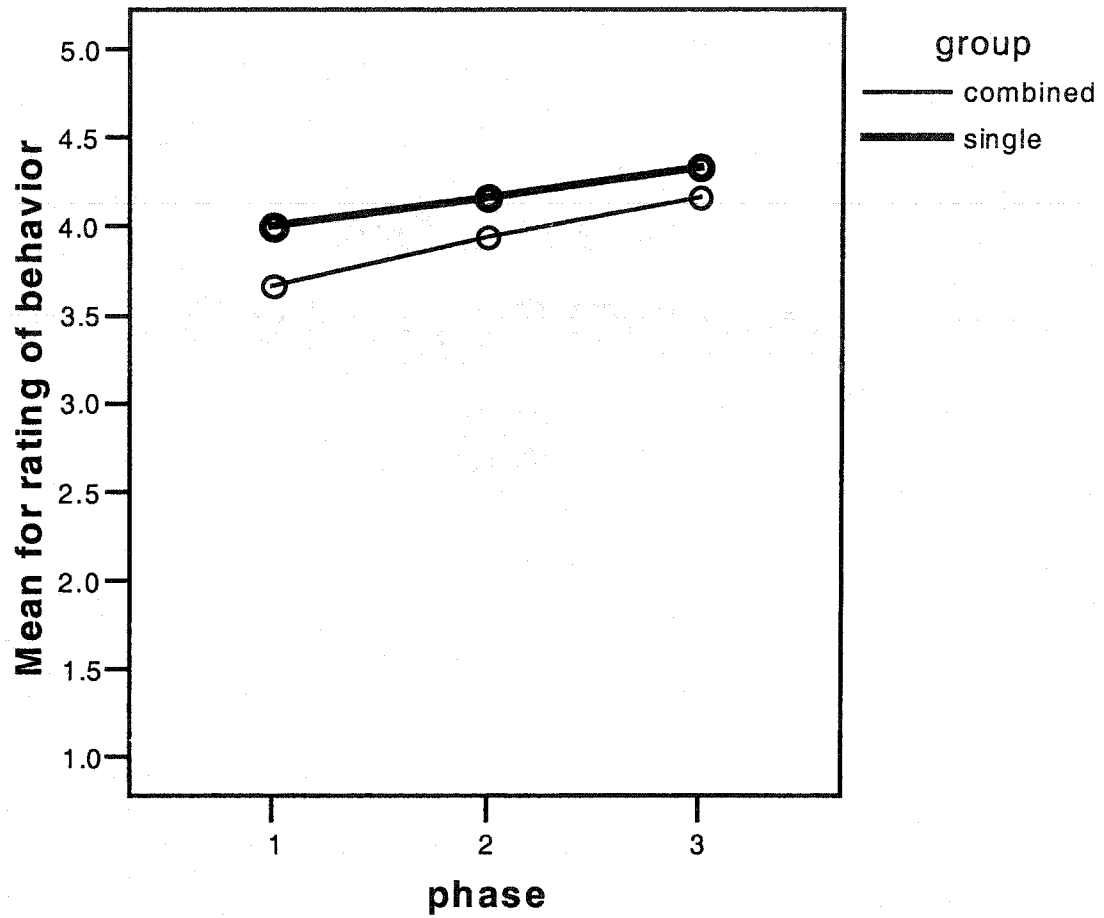
Figure 2. Waiting your turn.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

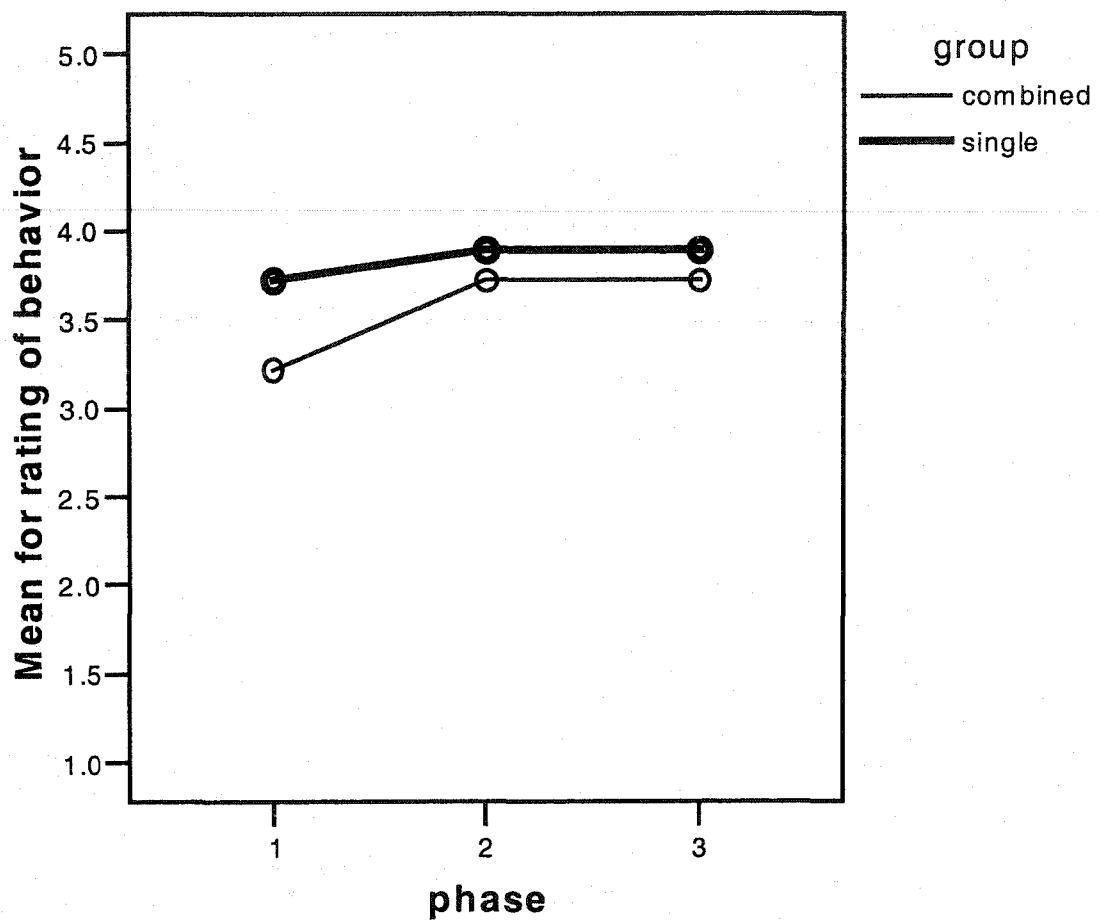


Figure 3. Sharing.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

Figure 4. Asking someone to play.



Note. 1 indicates the baseline phase, 2-5 indicate the intervention phase, 6 and 7 indicate the maintenance phase.

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