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From Intervention to Friendship

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FROM INTERVENTION TO FRIENDSHIP

by

Stephanie Scholes

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Special Education

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Logan, Utah

2011

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ABSTRACT

From Intervention to Friendship

by

Stephanie Scholes, Master of Science

Utah State University, 2011

Major Professor: Judith Holt PhD
Department: Special Education and Rehabilitation

Friendship is one of the hallmarks of social competence, yet few studies of interventions intended to increase social competence have evaluated their effectiveness through the formation of friendships. Peer-mediated interventions have been found to increase social competency and improve sociometric peer acceptance. Based on these findings from previous research, this study evaluated the effects of a peer-mediated intervention on the formation of reciprocal friendship for preschool children with disabilities. Evaluation using behavioral observations and sociometric nominations of friendship from classmates suggest that participation in a peer-mediated intervention may precipitate friendship formation.

(71 pages)

PUBLIC ABSTRACT

From Intervention to Friendship

by

Stephanie Scholes, Master of Science

Utah State University, 2011

Major Professor: Judith Holt PhD
Department: Special Education and Rehabilitation

Utah State University student Stephanie Scholes studied the effects of a peer-mediated social skills intervention on the formation of friendship for preschool children with disabilities. The children were two 4-year-old boys with developmental delays. Both children attended preschool in Salt Lake Community Action Program Head Start classrooms. Children were nominated for the intervention by their teachers who believed them to have no friends. Sociometric analysis conducted with classmates and friendship observations confirmed this assertion. Peer buddies, classmates to the children mentioned previously, were nominated by their teachers based on their good social skills. Friendship observations with peer buddies confirmed their nomination and provided mean levels of mutual positive affect, reciprocal social interaction, proximity, and behaviorally defined friendship. Following training, peer buddies were assigned to the children with disabilities for 10-minute sessions. Results from friendship observations indicated that the intervention was successful in increasing proximity and reciprocal social interaction to levels comparable with socially successful peers. Evaluation of these results suggested that participation in a peer-mediated intervention may precipitate friendship formation.

CONTENTS

	Page
ABSTRACT	iii
PUBLIC ABSTRACT.....	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
INTRODUCTION	1
REVIEW OF LITERATURE	4
METHODS	11
Participants	11
Setting	12
Dependent Variables	13
Independent Variable	16
Experimental Design	17
Procedures	18
RESULTS	21
Child 1	21
Child 2	28
DISCUSSION.....	36
Effects on Friendship Formation.....	36
Limitations.....	41
Suggestions for Further Study.....	42
Conclusion.....	44
REFERENCES	46
APPENDICES	51
Appendix A: Teacher Interview Form	52
Appendix B: Sociometric Interview Form	55
Appendix C: Data Sheet	57
Appendix D: Treatment Integrity Form.....	59

Appendix E: Sample Buddy Lesson..... 61

LIST OF TABLES

Table		Page
1	Comparison of Features of Friendship to Features of Social Competence.....	6
2	A Comparison Between the Characteristics of Preschool Friendship and Peer-Mediated Intervention	10
3	Characteristics of Children Targeted in Peer-Mediated Intervention.....	12
4	Interobserver Agreement	16
5	Analysis of Data Points as a Function of Their Relationship to the Mean and Standard Deviation of Socially Successful Peers.....	40

LIST OF FIGURES

Figure		Page
1	Child 1's reciprocal social interaction	22
2	Child 1's mutual positive affect	23
3	Child 1's behaviorally defined friendship.....	24
4	Child 1's proximity	25
5	Child 2's reciprocal social interaction.....	29
6	Child 2's mutual positive affect.....	30
7	Child 2's proximity.....	31
8	Child 2's behaviorally defined friendship.....	32

INTRODUCTION

Friendship is of great consequence to human development. Not only do peers provide playmates to young children, but these relationships help children learn to interact and form new relationships (Dietrich, 2005; Howes, 1988). Further, children in friendships enjoy the benefit of acceptance into group activities, companionship, and affection (Dietrich, 2005).

Friendship is an accurate indicator of social competence. This may be attributed to the achievement of skills necessary to make and keep peer relationships (Vaughn, Colvin, Azria, Caya, & Krzysik, 2001). Researchers studying friendship find that children who reciprocate friendships are seen by both peers and teachers as more socially competent (Lindsey, 2002; Vaughn et al., 2001).

Interestingly, preschool social competency shares many characteristics with preschool friendship. Both involve realization of social goals, positive affect, mutuality of feelings, and self management of behavior (Dietrich, 2005; Raupp, 1985). Thus, children who are not socially competent will probably struggle to make friends.

Preschool children with disabilities are often at greater risk in these domains. They are more likely to experience peer rejection and are less likely to engage in group play (Guralnick, Neville, Hammond, & Connor, 2006; Odom, Zercher, Marquart, Sandall, & Brown, 2006). Perhaps as a result, children with disabilities are less likely to have a reciprocated friend (Guralnick & Groom, 1988). This begins a troubling pattern, as children who struggle with making friends in preschool are likely to continue to struggle with social competence (Howes & Phillipsen, 1998).

To ameliorate this situation a variety of social skills instruction techniques have been used to improve social competence (Lowenthal, 1995). Strategies for successfully building social skills include environmental arrangements, prompting and rehearsing target behaviors, group affection activities, free-play generalization, reinforcement of appropriate behaviors, modeling of specific social skills, storytelling, direct instruction of social skills, imitation of appropriate behaviors, and peer-mediated interventions (Lowenthal, 1995; Vaughn et al., 2003).

Despite the success of social skills instruction in increasing social competence, few researchers have evaluated whether children make friends following intervention and no studies have examined the formation of friendship at the preschool level. An evaluation of research on the effects of interventions on friendship suggests that successful interventions appear to focus on social competency skills relevant to the characteristics of friendship of the target child's peer group (Dion, Fuchs, & Fuchs, 2005; Haring & Breen, 1992).

Many social skills interventions have been found to improve some part of social competency for preschool children. To determine the differential effects of one intervention compared with other interventions and a control condition, Odom and colleagues (1999) examined several interventions and found that while all improved social competence, peer-mediated interventions improved interaction quality and increased social competence while producing a modest improvement in social acceptance and resulted in best generalization.

A comparison of the qualities present in friendship formation among preschool children and peer-mediated interventions suggests that both involve same-gender peers,

increased interaction, reciprocity, and involvement in common activities (Gershman & Hayes, 1983; Gottman, 1983; Hinde, Titmus, Easton, & Tamplin, 1985; Howes & Phillipsen, 1992; Vaughn, Colvin, Azria, Caya, & Krzysik, 2001). This match of characteristics combined with the increased social acceptance noted by researchers suggests that peer-mediated intervention may function to produce friendship (English, Goldstein, Shafer, & Kaczmarek, 1997).

Accordingly, the purpose of this study is to determine if implementation of a peer-mediated intervention with a child with disabilities who has no friends will result in that child making a friend. Thus, the current study will answer the questions:

1. Will pairing a child who has no friends with a socially competent peer in a peer-mediated intervention function to produce a friendship?
2. Will providing a child with a socially competent peer-mediator provide sufficient opportunities for social skill development such that the child develops a friend (or friends) with whom he/she was not paired?

REVIEW OF LITERATURE

The purpose of this review of literature is to review research relevant to preschool friendship, preschool social skills interventions, and the effects of social skills interventions on friendship formation. Articles were identified through searches in Digital Dissertations, Education Full Text, ERIC via EBSCO Host, ERIC via the US Department of Education, Psychology and Behavioral Sciences Collection, PsychINFO via EBSCO Host, Social Sciences Citation Index, and PubMed Central databases as well as through reviewing reference lists from various pertinent sources. In searching through these databases a variety of search terms were used alone and/or in combination including: friendship, friend intervention, friendship assessment, peer relationship, social skills, peer-mediated, and buddy system. These searches were at times limited by age to preschool age (2-5 yrs), when this option was offered, or to children (0-12 yrs), when this was the youngest age-based grouping available. Two studies which evaluated the formation of friendship following an intervention were found, so both are included.

Friendship is important to children and their families. In considering important outcomes for their preschool children with disabilities parents frequently mention friendship, as they perceive that through friendship a variety of social and life objectives are met (Overton & Rausch, 2002). Friendship is essential to the social and emotional development of children. In preschool children, the term 'friendship' has been used to describe a specific, mutual preference of interaction partner with proximity seeking, sharing, positive affect, and play (Vandell & Mueller, 1980, as cited in Buysse, 1993). Preschool children with friends have been found to be more socially interactive (Guralnick, Gottman, & Hammond, 1996), more resilient (Criss, Pettit, Bates, Dodge, &

Lapp, 2002), more accepted by their peers (Lindsey, 2002), and have an easier time adjusting to school (Ladd, Kochenderfer, & Coleman, 1996). Additional benefits include social skill development, giving and receiving affection (Dietrich, 2005), and enjoying a higher proportion of positive interactions (Guralnick et al., 1996). In a meta-analysis of studies on friendship Newcomb and Bagwell (1995) found that not only do children in friendships have increased opportunities to develop interpersonal skills through interaction with friends, but these relationships provide a foundation for future friendships.

Friendship is an indicator of preschool social competence. In his study of 166 preschool children's friendship, social status and social competence Lindsey (2002) found that children aged 3 to 6 years who were involved in a friendship were viewed by both peers and teachers as more competent than children with no mutual friend. Additionally, friendship status was found to be a factor which contributed to teacher-rated social competency, even after considering the impact of overall peer acceptance. Vaughn and colleagues (2001) similarly found that reciprocated friendship dyads had higher social competence scores and greater sociometric acceptance over children in non-reciprocated friendships, even when the children in the dyad were found to have differing levels of social competence. This suggests that reciprocated friendships may be a means for children to build social competency.

Many characteristics of social competence are also characteristics of friendship for preschool children. In a synthesis of many researchers' work Raupp (1985) suggested that social competence is demonstrated through relationships with: satisfaction for both children, mutual positive affect, preference for the partner, and both individuals flexibly

Table 1

Comparison of Features of Friendship to Features of Social Competence

Characteristics of social competence	Characteristics of preschool friendship
Satisfaction for both children	Reciprocity Showing affection
Mutual positive affect	Playing and having fun together
Preference for the partner	Seeking to spend time together Sharing common activities Liking each other
Self regulation of behavior	Being nice to each other

regulating their own behavior. In seeking characteristics of preschool friendship, Dietrich (2005) conducted in depth study of six naturally occurring preschool friendship dyads through observation and interviews and discovered a number of common characteristics. These include: being nice to each other, showing affection, liking each other, seeking to spend time together, playing and having fun together, reciprocity, and sharing common activities (Dietrich, 2005). As is shown in Table 1, the features Dietrich identified as characteristics of friendship correspond with the characteristics of social competence. This suggests that the skills necessary to build social competence may also provide children with the tools needed for friendship.

Unfortunately, some preschool children, particularly children with disabilities, struggle to develop social competence and friendship. Guralnick and Groom (1988) explored the development of friendship for four-year-old children with mild delays placed in groups with children who were typically developing who were the same age and/or younger (3-year-olds). In these playgroups children with mild delays were less likely to form friendships than either age matched peers or younger children, though none

of the children were previously acquainted. Similarly, in a longitudinal analysis of the play exhibited by children with developmental delays with children identified as their friends found that though some children with developmental delays improved in their interactions over time, over one-third did not, with some children showing decline (Guralnick et al., 2006).

Researchers have designed several interventions which help children develop social competence. A number of approaches have been used to accomplish this including: changes in the environment, use of group affection activities, imitation of peers, teacher prompts, positive teacher reinforcement, correspondence training, child centered social skills training, and peer mediated interventions (Lowenthal, 1995; Odom et al., 1999). An analysis of several studies focusing on social skills interventions, Vaughn and colleagues (2003) found that many programs produced positive social outcomes for young children in integrated settings, yet the authors were particularly impressed with those interventions associated with play. This suggests that interventions integrated into play activities may tend to be more successful for this population.

Despite the success of many social skills interventions and the mention of friendship as an important outcome of social skills interventions, few researchers have evaluated whether children with disabilities actually make friends following intervention (English, Shafer, Goldstein, & Kaczmarek, 1997). Two significant exceptions, Haring and Breen (1992) and Dion and colleagues (2005), both specifically examined friendship formation following intervention, but both groups of researchers studied subjects considerably older than preschool children. Despite this discrepancy, the findings of these researchers provide insights into finding social skills strategies which may lead to

preschool friendships. Haring and Breen (1992) evaluated the effects of developing peer support networks within the general education setting to improve the social interactions, peer attitudes, and develop friendship for two teenage students with moderate and severe disabilities. The intervention produced increases in the number of appropriate interactions for both targeted students. Additionally, peers in the network describing their relationship with the targeted student as friend increased from 22% to 89%. Dion and colleagues (2005) evaluated the effects of Peer-Assisted Learning Strategies (PALS), a peer-tutoring reading program, on friendship development for eight classes of third and fourth grade children. Researchers found that peer-ratings for social preference and friendship did not change for children in the study. The results of these two studies provide two important clues toward finding successful friendship interventions. First, interventions which specifically address social competence seem more prone to produce friendship. Second interventions appear more likely to produce friendship if they focus on the characteristics of friendship for the intended age group.

While researchers have found many interventions that increase specific social skills, such as initiations, interaction, or responses to peers, in order for a child to form a friendship another child must find them to be socially acceptable. In his 1999 study Odom and colleagues used a control-group design to determine the impact of environmental arrangement, child-centered social skills training, peer-mediated, and combination interventions on young children with disabilities. Ninety-eight preschool children with disabilities were recruited through teacher nomination for social skills interventions. These children were assigned to one of five conditions: C—control or a typical classroom condition, EA—environmental arrangement or a play group of four to

six children with half with and half without disabilities who play without social prompts in 6 to 10 minute sessions, CS—child-specific or social skills training groups where children are given 5 to 10 minute lessons in social skills concepts, PM—peer-mediated intervention group where typically developing kindergarteners are trained in making social initiations to promote engagement of children with disabilities, or CM—combination or a condition with the characteristics of the EA, CS, and PM conditions. Odom et al. found that while all conditions improved social competence in the initial phase, the environmental arrangement intervention had the greatest impact on peer ratings, while the peer-mediated intervention strongly impacted the quality of interactions, achieved substantial effect in peer ratings, and resulted in best generalization.

To determine whether a peer-mediated intervention is likely to produce a friendship, it is important to consider the qualities of preschool friendships and compare these qualities with the characteristics of peer-mediated intervention. Preschool friends typically begin with a common activity, or with the children doing something together (Gershman & Hayes, 1983; Gottman, 1983). This builds into a preschool function of friends as playmates or someone to spend time with (Buysse, 1993; Dietrich, 2005). This characteristic is seen through joint participation in a variety of activities and through seeking one another out (Dietrich, 2005). A resultant characteristic is that preschool children engage in higher frequency and quality of interactions with friends than with average peers (Vaughn et al., 2001). This is explained in part by the paramount characteristic, reciprocity, in friendship (Gershman & Hayes, 1983; Gottman, 1983). Reciprocity is a fundamental quality found in all mutual friendships, including preschool

children's relationships (Freeman & Kasari, 2002; Gordon, Feldman, & Chiriboga, 2005). Preschool friendships are predominately between children of the same gender, though cross-gender friendships do exist (Hinde et al., 1985; Howes & Phillipsen, 1992). A comparison between these characteristics and the characteristics of peer-mediated intervention, shown on Table 2, indicates that these characteristics are a good match.

The correspondence of characteristics between preschool friendship and peer-mediated intervention suggest that implementation of a peer-mediated intervention with preschoolers with disabilities will lead them to develop friendships (English et al., 1997).

Table 2

A Comparison Between the Characteristics of Preschool Friendship and Peer-Mediated Intervention

Preschool friendship characteristics	Peer-mediated intervention characteristics
Doing something together	Shared activity
Same gender peer	Socially competent peer—usually same gender
Reciprocity	Peer trained in responsiveness
Generally higher rate of interaction relative to interaction rate with non-friend peers	Increases interaction with peer

METHODS

Participants

Participants were initially identified through interviews (see teacher interview form in Appendix A) with educational teams from Salt Lake Community Action Program Head Start classrooms. These interviews identified children with disabilities as defined by the Individuals with Disabilities Education Improvement Act (IDEA 2004), who attended regularly, and whom classroom teams believed had no friends, yet the teams thought that these children could understand friendship. Following receipt of parental consent, sociometric interviews with all children in the classroom, and observations of the potential participants during free play verified whether a child had no friends. Initially 10 potential participants were identified. Of those children, five moved away/and or stopped attending before or during baseline, and three were unable to complete all study phases, due to the time constraints.

Two targeted children completed all phases of this study. Both of these children were 4 years old at entry into the study and attended half-day Head Start classes, where they received special education services. Each attended approximately 4 days per week with typically developing peers. Characteristics of these two children are noted in Table 3.

Additionally, peers were identified as helpers for each targeted student. Teachers identified children who had good social interaction and play skills, regular attendance, were highly regarded by other students, and had a positive or neutral history with the

Table 3

Characteristics of Children Targeted in Peer-Mediated Intervention

Student	Gender	Preschool Language Scale—4 All scores are Standard Scores	Classification	Ethnicity
Child 1	Male	Auditory Comprehension 71 Expressive Communication 80 Total Language Score 73	Developmental Delay	Caucasian
Child 2	Male	Auditory Comprehension 50 Expressive Communication 50 Total Language Score 50	Developmental Delay	Hispanic; child was equally proficient in Spanish and English

identified student. As with the targeted peers, peer helpers or buddies were verified as having high numbers of friends through sociometric assessment, and good social interaction skills through free-play observations. For Child 2, this peer helper was one of the four children identified sociometrically as who he liked most. This was not possible for Child 1 as the children he identified as liking most did not display the high levels of social interaction required in a peer buddy.

Setting

This study took place in the Head Start classroom during 20 minutes of regularly scheduled free-play time. During this time children were allowed to choose the area and the toys with which they would play. Areas included dramatic play, construction/blocks, puzzles, books, writing/drawing, and teacher directed activities. All children in the class

were present during sessions, including targeted children, peer buddies, and children who were not participating in the intervention.

Dependent Variables

Data were collected on four dependent variables; sociometric evaluation, reciprocal social interaction (RSI), mutual positive affect (MPA), and behaviorally defined friendship.

Sociometric Evaluation of Friendship

Sociometric evaluation occurred at the beginning of the study and again after the intervention was faded. All children attending the class with the targeted child participated in this measure. It consisted of the examiner placing each child from the class individually in front of photos of all the children in their class and asking them to hand the examiner the pictures of the children whom they like most, then recording the information on the Sociometric Interview Form (Appendix B). These answers were then entered into the computer by their position as shown to the child. Finally, whom each child liked most was compared to who liked each child most. This resulted in identification of friendships. Mutual or reciprocal friendship based on sociometric evaluation referred to children who identified each other as one of their friends or someone who they liked most. Unilateral friendships referred to one child nominating another child, but not being nominated in return. For the purposes of this study, only children with reciprocated nominations were considered to have friends based on sociometric analysis.

Reciprocal Social Interaction (RSI)

This term was used to describe two children joining in social communication with one another, including: verbal initiations and responses, gestures, facial expressions, and non-verbal eye contact on the part of either a target child or a peer in relation to their common activity. Reciprocal social interaction was scored as present or absent on an interval basis using 30-second intervals during all phases, and during intervention sessions. As this measure was scored for a dyad, both children had to be involved in the social interaction for RSI to be scored as present. Examples included children commenting on each other's actions, passing materials, discussing a joint endeavor, or asking and answering questions. Non-examples include a child not responding to a verbal initiation or question, a child answering a question with a gesture or facial expression which the other child does not see, or a child ignoring another child's communication. Similarly, intervals where no communication occurred were scored as having no reciprocal social interaction.

Mutual Positive Affect (MPA)

Mutual positive affect referred to both children displaying positive affect at the same time. This was also scored on a 30-second interval for the dyad during all phases, as well as during the intervention sessions. Positive affect was defined as appearing to enjoy oneself, smiling, laughing, holding hands, or hugging. Non-examples included neutral facial expression by either child (most common), frowning, crying, leaving the activity, or appearing tense or frustrated. This definition was altered during data collection to smiling, laughing holding hands or hugging, omitting "appearing to enjoy oneself" as children typically played with neutral expressions on their faces.

Behavioral Friendship

Based on the friendship scans described by Howes and Phillipsen (1992), these observations evaluated the simultaneous presence of three behaviors: reciprocal social interaction, mutual positive affect, and proximity of three feet or engagement in a common project. Behavioral identification of friendship could be measured either for a dyad or larger group of children over a 30 second interval. Like the other observational measures behavioral friendship was recorded in all phases, however, unlike the other measures, this measure is not recorded in intervention sessions, but solely in non-intervention free-play either before or after the intervention session. Where possible, intervention and friendship observations were alternated as the first observation of the day.

Interobserver Agreement on Dependent Measures

Interobserver agreement data was obtained by the researcher and a trained data collector independently recording data on the presence or absence of the three dependent measures in intervention and in friendship observations: reciprocal social interaction, mutual positive affect, and proximity in synchronous intervals. Agreement was measured in at least 83% of sessions by taking the number of data points in agreement and dividing it by the number of data points possible and multiplying this number by 100. To maintain a schedule allowing for best use of time, the data collector and the researcher typically were at the same physical address. This led to a high percentage of sessions with interobserver agreement.

For Child 1 interobserver agreement was calculated in 86% of the sessions. Agreement ranged from 84 to 100% with a mean of 94% and a standard deviation of 4.08%.

Interobserver agreement was collected in 79% of the sessions for Child 2. The mean was 92% with values ranging from 80 to 100% and a standard deviation of 4.97%.

Table 4

Interobserver Agreement

	Percentage of sessions with interobserver agreement	Mean	Range of values	Standard deviation
Child 1	86%	94%	84 – 100%	4.08%
Child 2	79%	92%	80 – 100%	4.97%

Independent Variable

Peer-Mediated Intervention

The researcher began training the peer buddy needed for this intervention during the week(s) that baseline data were taken. Lessons proceeded as described in step 3 of English and colleagues (1997). First the buddy was taught about who needs a buddy through discussion. Next they were taught to stay with their buddy (see sample lesson in Appendix E). This means playing with them where they are playing and moving to a new activity when they do. This was reinforced through discussion with the peer buddy. The lesson was concluded with the verbal reminder that the first step was to stay with your friend. The child was then assigned to stay with the targeted child for 10 minutes. The next day the researcher reviewed the first step, and taught the peer helper to play with their friend, such as joining what he/she is doing, or sharing toys. These behaviors were

rehearsed through modeling and role play. Role play was continued until the peer required no more than two prompts in the training session. The lesson was concluded with the reminder that the buddy steps that they have learned are to stay with their friend and play with their friend. The buddy was then assigned to stay with and play with their targeted peer. In the next lesson a similar procedure was followed: first reviewing the previous lessons, then training them to talk to their friend. This was taught through a simplified lesson on descriptive language or parallel talk. Again this was practiced until the buddy could do it with the researcher without prompts. The lesson was concluded with the reminder that the three steps are to stay, play and talk with their friend. The child was then assigned to stay, play and talk to their buddy. Praise and prompts were given as needed, with both praise and tangible reinforcement, such as a sticker, at the end of the session. Similar review lessons with role play were conducted when a peer helper was struggling with talking or playing with their assigned buddy.

Experimental Design

A multiple baseline across participants design was used to evaluate the effects of the peer-mediated intervention on friendship formation. The study progressed sequentially across four phases: baseline, intervention, intervention fading, and maintenance.

Procedures

General Procedure

First, the researcher conducted informal interviews with preschool teachers and classroom staff. Teachers identified children categorized by IDEA as having a disability who they believed have no friends. Next, baseline friendship observations were conducted over daily 10-minute intervals during free-play for those children identified as friendless and for potential peer buddies. The researcher then interviewed each child in the class individually to obtain sociometric friendship nominations. This process allowed the researcher to verify teacher reported children without friends and teacher reported children who are well liked. A child was considered a good candidate if he/she had no friends as identified by two of three criteria: Teacher report, sociometric nomination, and friendship observations.

Concurrent to baseline, a child identified as meeting the criteria for a peer helper was trained as a peer buddy. This child then was assigned to play with the targeted child for 10-minute sessions as described in the peer-mediated intervention section. During the intervention phase observation of friendship behaviors occurred daily in 10-minute intervals either before or after 10-minute intervention sessions. The order of friendship observations and intervention sessions was rotated to the greatest extent possible, though this was not always possible particularly with Child 2's buddy, as the teacher required children to choose a place to play when leaving circle and remain there for a set amount of time. Friendship observation sessions and intervention sessions were each held once per preschool day, or approximately 4 days per week.

Intervention sessions began with the teacher or the researcher notifying the peer that it is peer buddy time as well as a brief reminder to stay with their buddy, play with their buddy and talk with their buddy. Intervention sessions concluded when the researcher gave the dyad (and any children playing with them) stickers and/or social praise for performing the desired behaviors.

Data Collection

The researcher and trained assistants served as primary data collectors and coders in this study. These coders viewed live ten-minute sessions and recorded the presence of dependent variables in 30-second intervals (using Motiv-Aiders™) for the targeted children and their peer buddies (see data sheet in Appendix C). Partial interval recording method was used in data collection.

Treatment Integrity

An observer not involved in conducting the intervention recorded data on proper implementation of treatment in training sessions with peer buddies and praising and prompting in intervention. These data were collected for at least 22% of sessions. Treatment integrity was determined for adults working with peer buddies, and the peer buddies themselves using the checklist found in Appendix D. The items correctly implemented were then be divided by the total possible then multiplied this by 100.

Treatment integrity for both adults and peer buddies was 94%. Adult treatment integrity was 98%, while treatment integrity for peer buddies was lower, 89%. Treatment integrity was compromised by peer buddies not staying with their assigned peer, not demonstrating positive affect, not initiating interaction, or not playing with the child to

whom they were assigned, despite prompting; all behaviors typical to the 4-year-old children they were.

RESULTS

This study was designed to examine whether a peer-mediated social intervention would result in the formation of friendship for children with disabilities who had previously been friendless.

Child 1

To evaluate the success of the intervention, baseline levels of reciprocal social interaction, mutual positive affect, proximity, and behaviorally defined friendship were taken for two successful peers (children nominated by their teacher as potential peer buddies, including Child 1's peer buddy) in Child 1's class. These peers demonstrated RSI in a mean of 44% of intervals, with a standard deviation of 21%. MPA was shown in a mean of 7% of intervals with a standard deviation of 9%. Proximity occurred in a mean of 83% of intervals with a standard deviation of 26%. Behaviorally defined friendship was seen in a mean of 7% of intervals with a standard deviation of 9%.

Baseline

During baseline Child 1 was identified through sociometric analysis to have two friends. When compared with whom Child 1 interacted with in 15 days of baseline, however, Child 1 had not interacted with either "friend" even once during this period. Percentages of intervals with reciprocal social interaction (RSI), as seen in Figure 1, ranged from 0% to 20%. Thirteen of fifteen data points were less than or equal to 10%. Only one interval of mutual positive affect (MPA, Figure 2) occurred during the 15 days of baseline, aligning with the single interval with behaviorally defined friendship (Figure

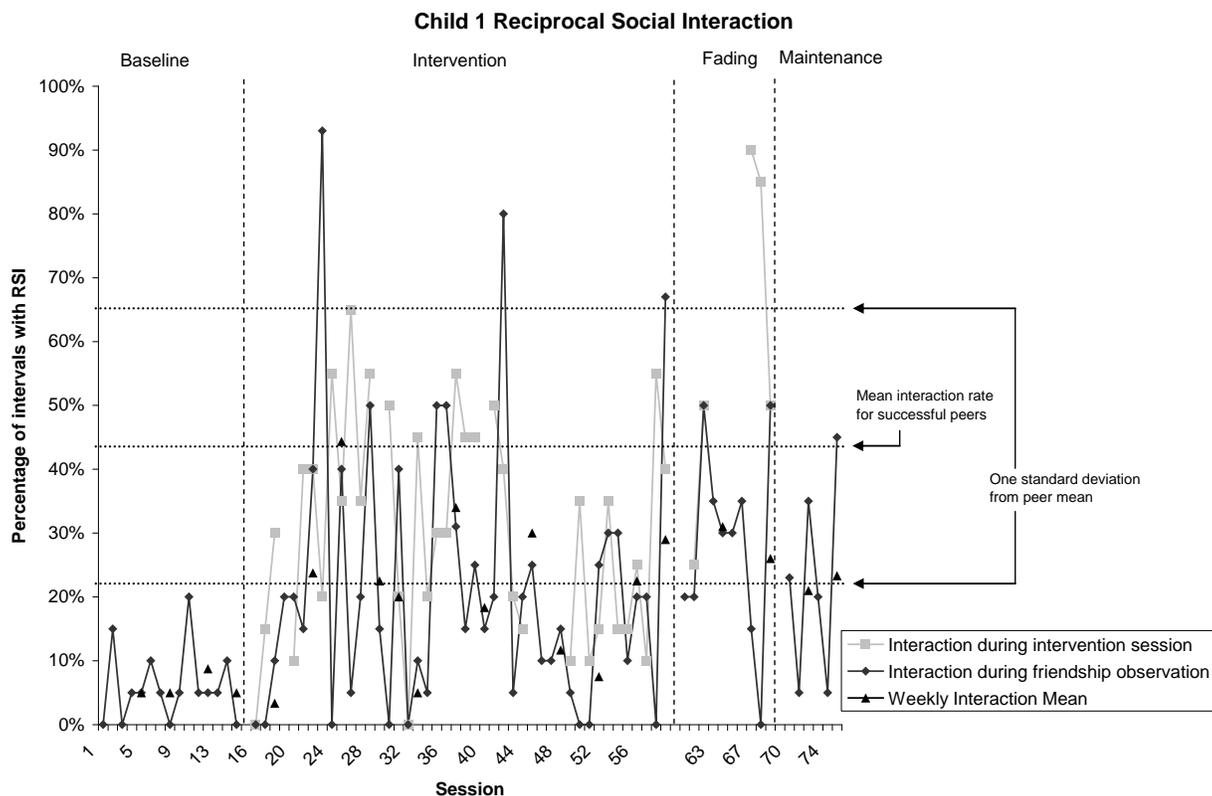


Figure 1. Child 1's reciprocal social interaction (RSI).

3). Proximity, as seen in Figure 4, varied to a greater degree, with a range of values from 0% to 100%.

Although not generally recommended, Child 1's buddy was of the opposite gender. This class had more females to males (about 2:1) making the choice of an appropriate peer buddy challenging. Buddy 1 was chosen over the male peers in the class due to her ability to follow teacher directions, her sociometric popularity (she had four reciprocated friendships), and her positive to neutral history with Child 1.

During baseline the percentage of Child 1's data points within one standard deviation of the mean for successful peers or higher for RSI was 0%, and for proximity was 47%. As one standard deviation from the peer mean for mutual positive affect and

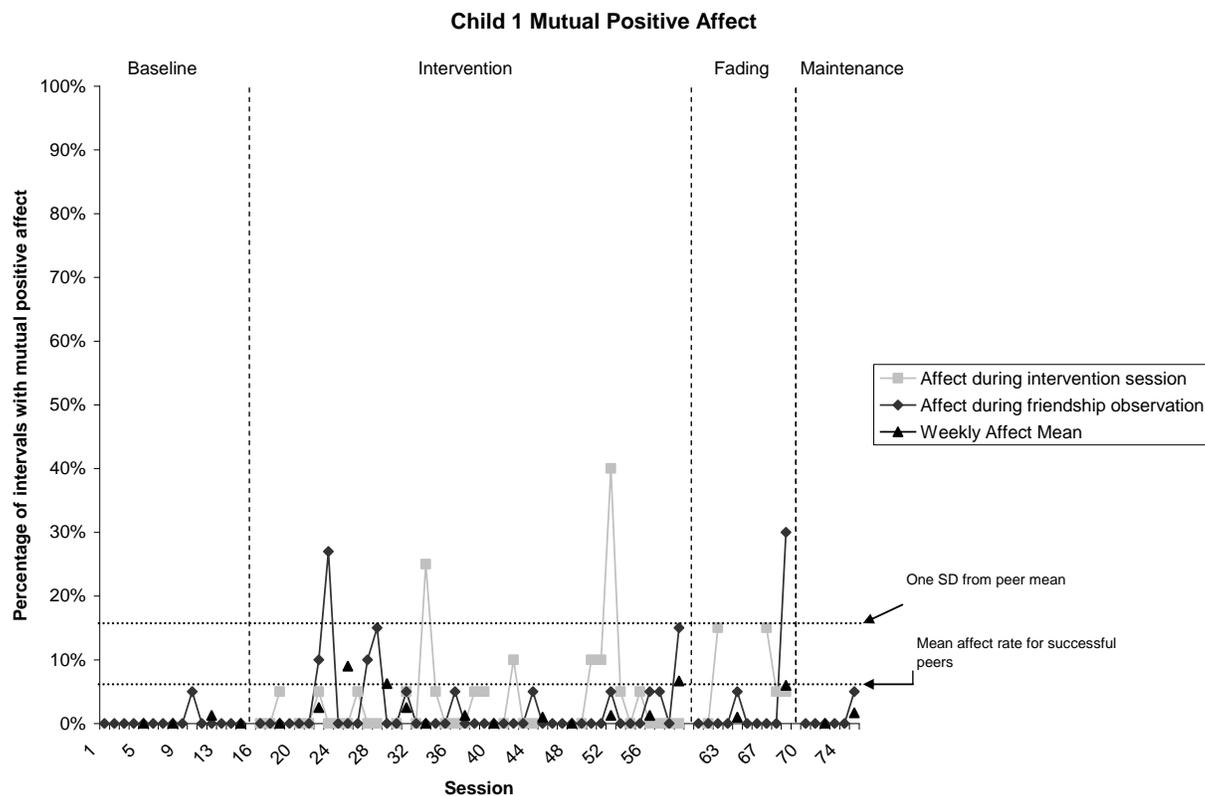


Figure 2. Child 1's mutual positive affect (MPA).

behaviorally defined friendship overlapped the abscissa, all sessions were within one standard deviation or higher.

Intervention

When Child 1's data indicated a stable level of interaction and affect and Buddy 1 was ready, intervention was implemented. As seen in Figure 1, Child 1 responded to the intervention quickly, with levels of RSI entering the range of values expected of a successful child after seven sessions. His weekly means indicated that his mean level of interaction was equivalent to that of successful peers by week 3 of intervention.

Unfortunately, Buddy 1 was absent at the end of week 4 and Child 1's interaction rate fell

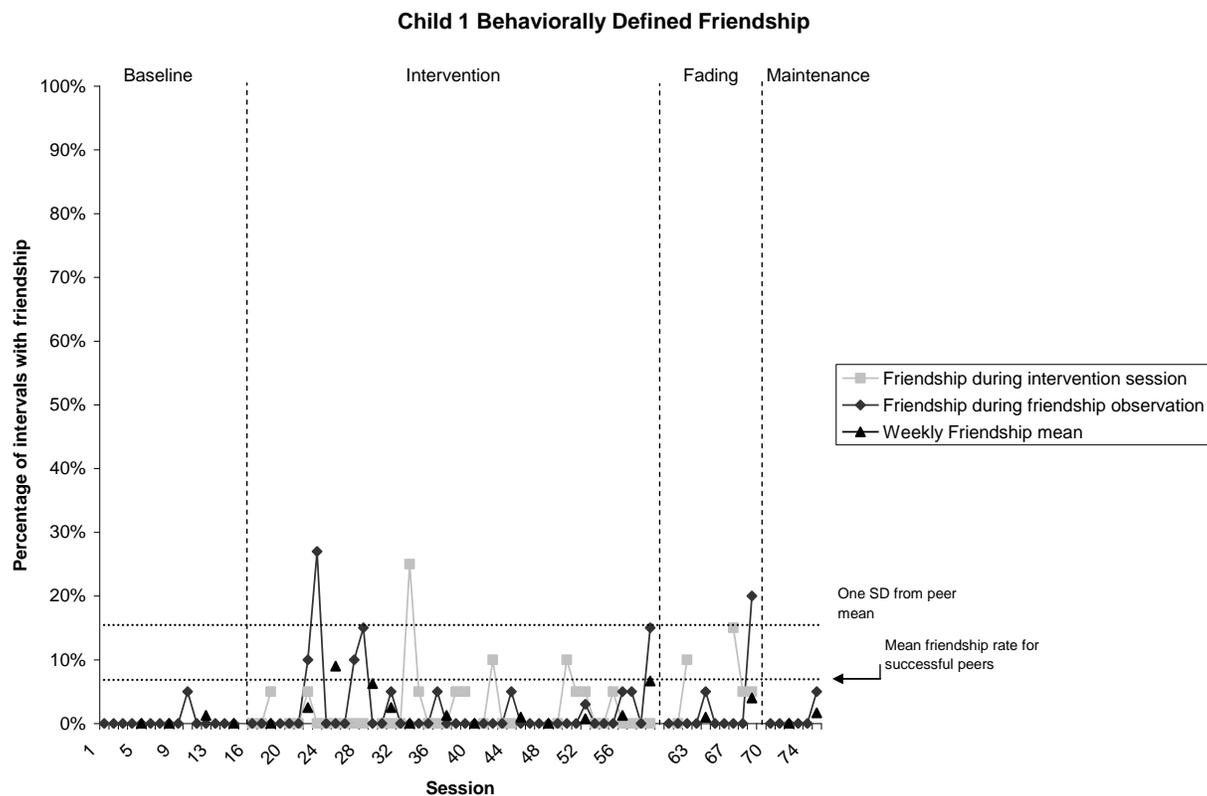


Figure 3. Child 1's behaviorally defined friendship.

to one standard deviation below the level of his successful classmates. His weekly mean interaction rates continued to decline for two additional weeks. Week 7 of intervention his mean RSI rate again rose to within one standard deviation of his socially successful peers, before falling again week 8. Following a return to peer-level interaction week 9 of intervention, Buddy 1 was absent for a week, precipitating two weeks of low interaction rates. Week 12 he again reached a RSI weekly mean rate of one standard deviation below the mean of his peers. His rate was again within one standard deviation of successful peers week 13 of intervention. As this followed three weeks of increasing mean interaction rates, it was decided to move Child 1 to intervention fading.

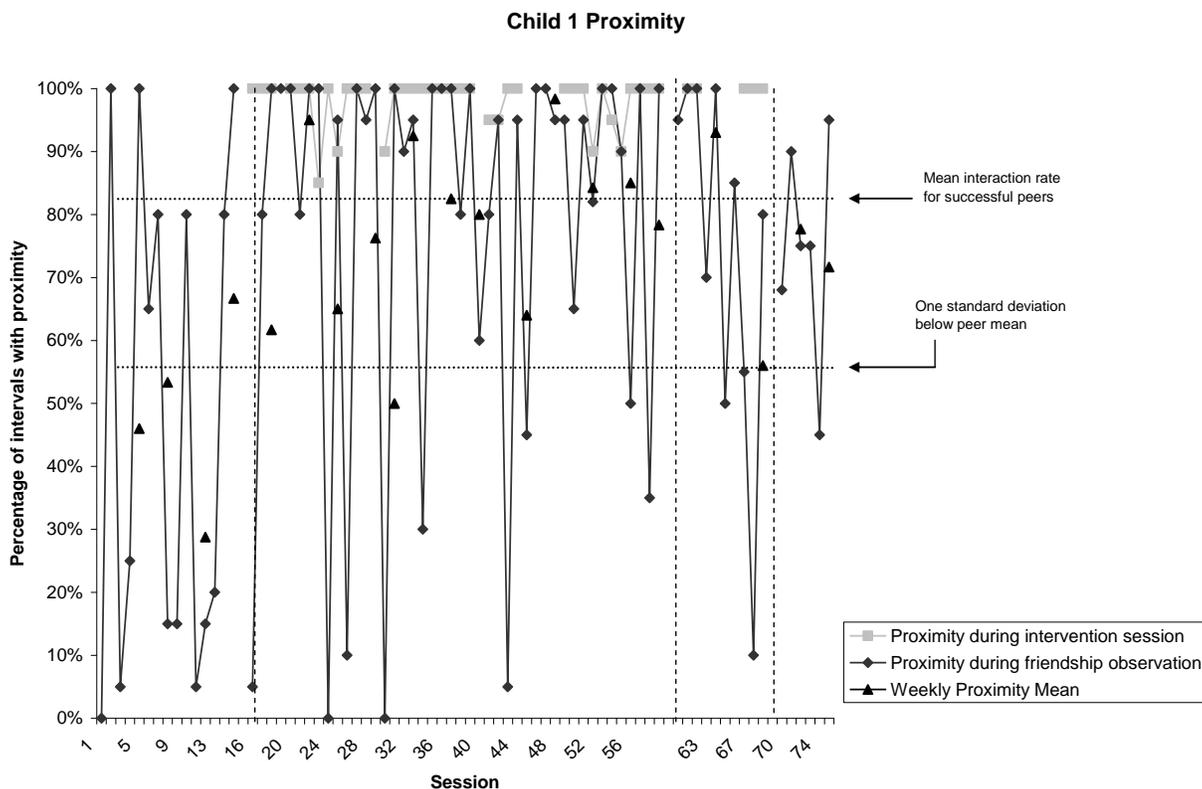


Figure 4. Child 1's proximity.

The percentage of data points for reciprocal social interaction overlapping from baseline to intervention phases was 67%. When RSI data from intervention are compared to the mean of socially successful peers the percentage of Child 1's data points within one standard deviation of the peer mean or higher was 33%.

The mean level of mutual positive affect for socially successful peers in child 1's class was much lower, 7% of intervals, with a standard deviation overlapping zero percent. This placed *all* values for the percentage of intervals with MPA as within or exceeding one standard deviation of peer levels. Child 1 reached weekly mean levels of mutual positive affect reached or exceeded the mean of successful peers in week 3 and week 4 of intervention, but then fell for several weeks, finally regaining this level on

week 13 of intervention. This preceded the move from intervention to intervention fading phases. The percentage of overlapping data points from baseline to intervention was 88%.

Behaviorally defined friendship followed a trajectory nearly identical to that of mutual positive affect. As with MPA, friendship improved in weeks 2 and 3 of intervention, before declining for several weeks. As with affect, 88% of data points overlapped from baseline to intervention.

Proximity changed to a surprising degree in intervention. This change is seen not through percent overlap, which is 100% as Child 1 had sessions with 0% of intervals with proximity and sessions with 100% of intervals with proximity in baseline, but rather through comparison with socially successful peers. While 47% of Child 1's proximity data points were within one standard deviation of the mean or higher during baseline, 79% were within one standard deviation of the mean of successful peers in intervention. Similarly, 20% of proximity data points for Child 1 were at or above the mean during baseline, while 65% were at or above the peer mean during intervention.

Intervention Fading

Though there was some variability as intervention was gradually faded, Child 1 was able to maintain weekly mean rates of reciprocal social interaction within one standard deviation of the mean of successful peers. While 33% of RSI data points in intervention were within one standard deviation of the mean of socially successful peers, 60% of data points in intervention fading were within one standard deviation of the mean of peers. The percentage of overlapping data points from baseline to fading was 40%.

Mutual positive affect varied little from intervention to intervention fading. Only one data point exceeded the mean level of affect of socially successful peers, with only

two non-zero values. The percentage of overlapping data points from baseline to intervention fading was 90%.

Behaviorally defined friendship followed the same pattern as that of MPA: 90% overlap from baseline to intervention fading with two non-zero values.

Child 1's proximity decreased somewhat in intervention fading, but remained higher than baseline levels. In baseline Child 1's values for proximity were at or exceeding the mean of peers who were socially successful only 20%, while in intervention fading 50% of data points were at or exceeding the peers' mean. When this is expanded to values greater than or within one standard deviation of the peer mean 70% of intervention fading values for Child 1 were within this range, whereas only 47% were in baseline.

Maintenance

While Child 1's reciprocal social interaction was still generally higher in the maintenance phase than in baseline, with 50% overlapping data points from baseline to maintenance, maintenance did bring a drop in interaction. The first week of maintenance phase the weekly interaction mean was greater than one standard deviation below the mean of socially successful peers. The second week of maintenance, however, brought the mean back within one standard deviation of the mean of his peers. 50% of values for RSI in maintenance phase were within one standard deviation of the mean of successful peers, with 17% of values greater than or equal to the mean of successful peers.

During maintenance phase Child 1's mutual positive affect remained below the mean of his peers, but within one standard deviation. Friendship, defined by the presence of MPA, RSI, and proximity was identical to MPA in the maintenance phase.

Child 1 was able to keep his weekly means for proximity within one standard deviation of the mean rate set by his successful peers, though his proximity was not as high as it was in intervention. Over 83% of sessions in maintenance had proximity scores within one standard deviation of the mean, though just 33% were greater than the mean of successful peers.

Sociometric Evaluation

Sociometric analysis subsequent to maintenance suggested that Child 1 had one friend. Comparison with observation data from the maintenance phase found that 20% of Child 1's reciprocal social interactions were with this friend. Further 50% of observed instances of friendship behavior, or the presence of reciprocal social interaction, mutual positive affect and proximity during the same interval, were with this child, supporting the notion that these children were truly friends. Child 1's friend was not Buddy 1.

Child 2

As with Child 1, levels of reciprocal social interaction, mutual positive affect, proximity and behaviorally defined friendship were taken for two successful peers from Child 2's class. These children exhibited RSI in a combined mean of 45% of intervals in baseline with a standard deviation of 24%. MPA occurred in a mean of 5% of intervals with a standard deviation of 6%. Analysis of proximity found it to be present in a mean of 84% of intervals with a standard deviation of 22%. Finally, friendship was observed in a mean of 5% of intervals with a standard deviation of 6%.

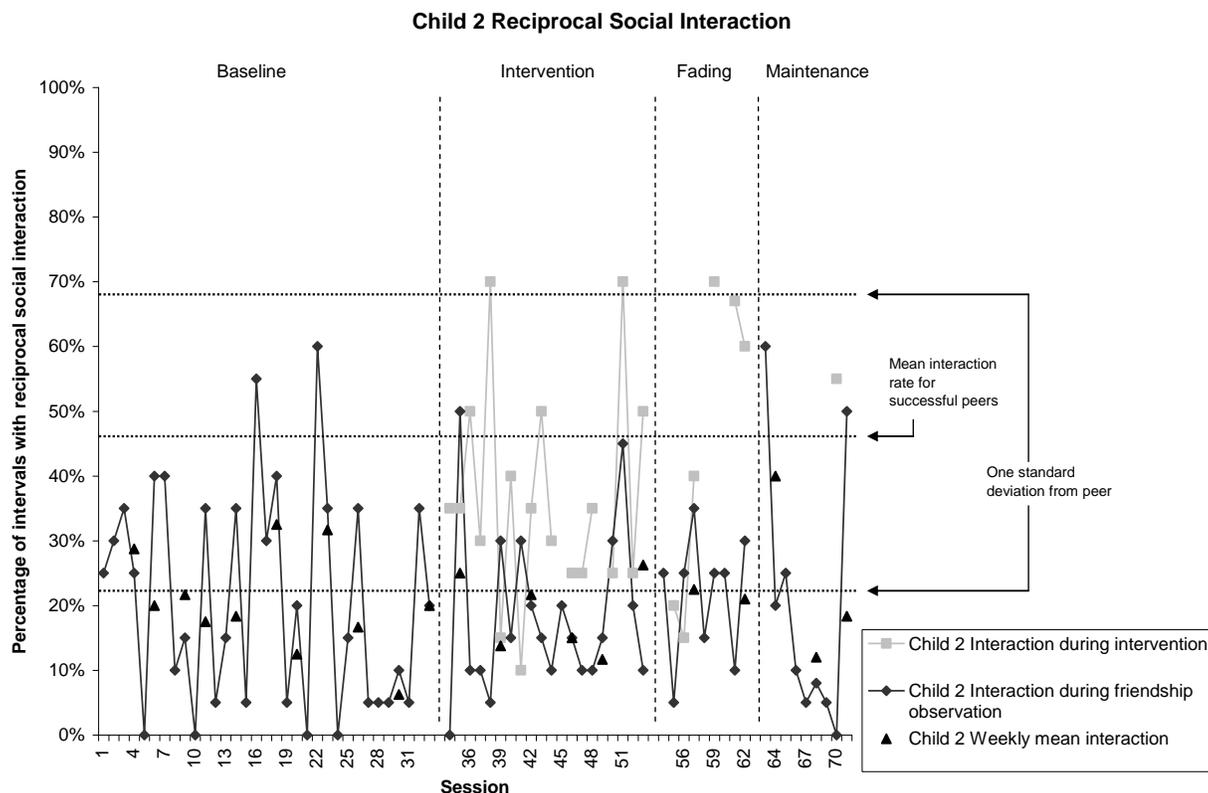


Figure 5. Child 2's reciprocal social interaction.

Baseline

Sociometric analysis conducted during baseline in Child 2's classroom found that Child 2 had no mutual friends. Only one child had identified that they liked Child 2, yet that child never interacted with Child 2 during baseline. Child 2's baseline RSI values (Figure 5) varied from 0% to 60%. The percentages of intervals with MPA (Figure 6) ranged from 0% to 25% with just two of the thirty-three values greater than or equal to 10%. The baseline range of values for proximity (Figure 7) for Child 2 was 0% to 95%. Behaviorally defined friendship (Figure 8) varied from 0% to 25%, with six of thirty-three values greater than 0%.

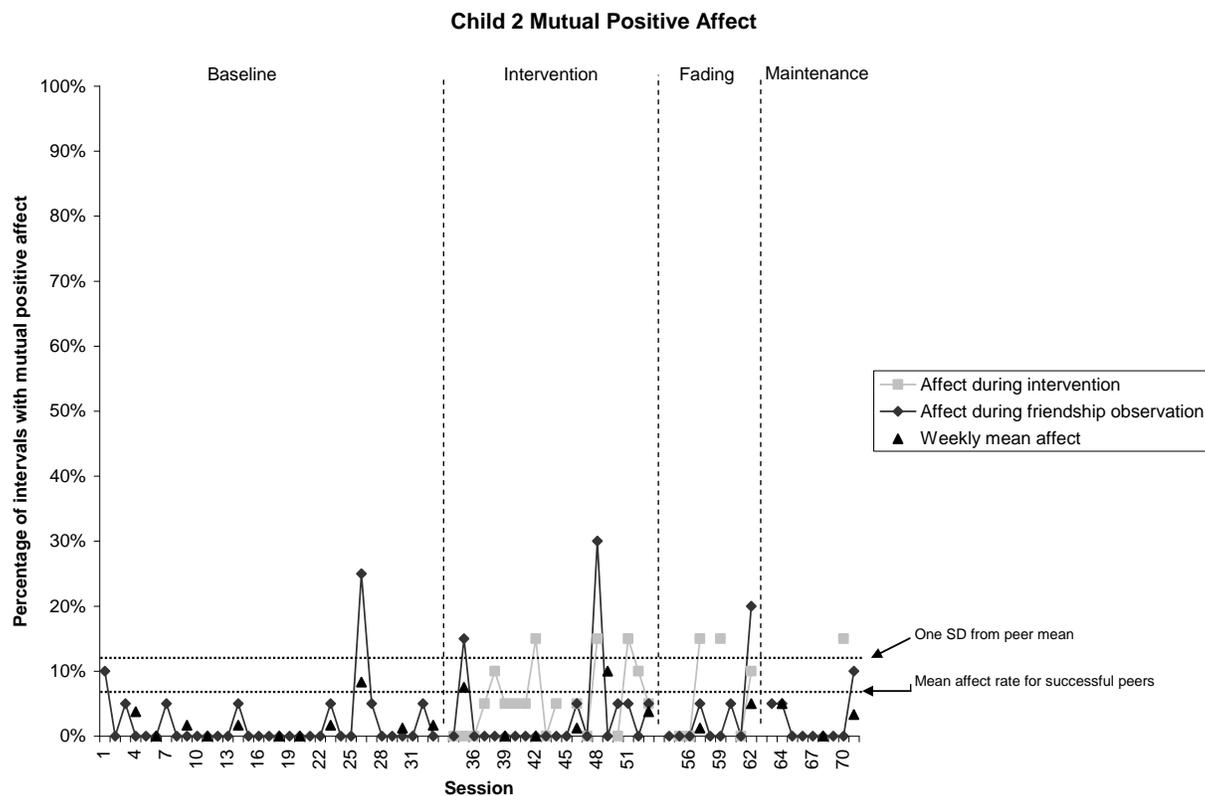


Figure 6. Child 2's mutual positive affect (MPA).

Finding a buddy for Child 2 was also difficult. The first choice, a child who had one friend sociometrically, high levels of interaction, and generally followed teacher directions, refused to work with Child 2 after receiving some buddy training. The child who became his buddy was not found to have friendships sociometrically in baseline, but was chosen as he was nominated a friend by Child 2, had high average interaction levels, could communicate in English and Spanish and was the same gender as Child 2. Child 2's scores for reciprocal social interaction were within one standard deviation of the mean of socially successful peers in 45% of baseline sessions, and meeting or exceeding the peers' mean in 6% sessions. His proximity scores were within one standard deviation of the mean of his socially successful peers in 52% of sessions and

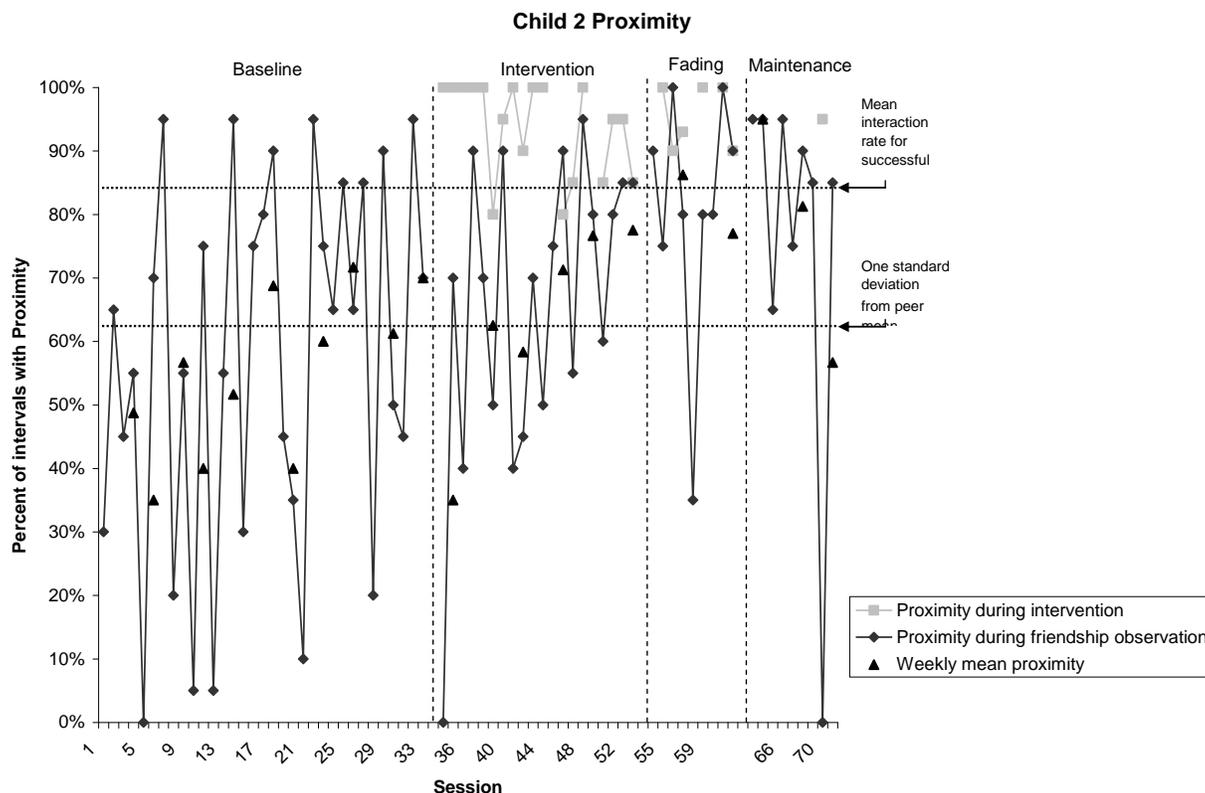


Figure 7. Child 2's proximity.

greater than or equal to the mean in 24% of sessions. The mean and standard deviation of mutual positive affect and behaviorally defined friendship achieved by socially successful peers were such that all sessions were within one standard deviation or greater. When compared directly to the mean of successful peers, 24% of Child 2's baseline sessions were at or above the mean level of MPA recorded by successful peers, while 18% of these sessions had levels of friendship at or above the mean.

Intervention

Child 2 did not respond quickly to intervention. While his weekly mean for reciprocal social interaction the first week of intervention was within one standard

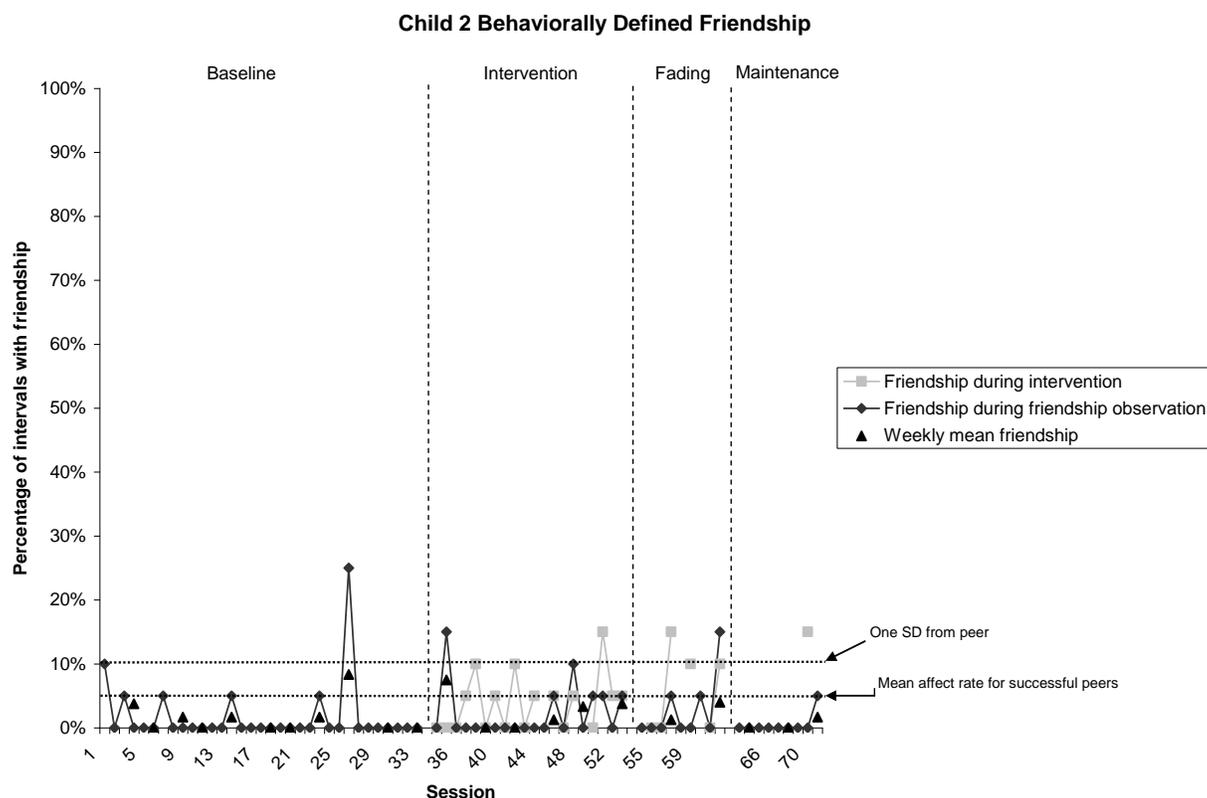


Figure 8. Child 2's behaviorally defined friendship.

deviation of the mean of socially successful peers in his class, the subsequent week his average was more than one standard deviation below his peers' mean. This was true of week 4 and week 5 of intervention, as well. Week 6 his mean was well within one standard deviation of the mean of his successful peers meeting the criteria of a successful intervention as well as having one session at the mean of successful peers, though his last two data points in intervention were more than one standard deviation below the peer mean. The percentage of overlap from baseline to intervention was 100%.

Mutual positive affect had a percent overlap of 95% from baseline. 30% of sessions were at or above the mean of socially successful peers. Behaviorally defined friendship followed the trends of affect, and similarly had 30% of sessions at or above the

mean of his peers. The main difference between MPA and friendship data from intervention was that unlike MPA the percent of overlapping data points for behaviorally defined friendship from baseline to intervention was 100%.

The most pronounced change from baseline to intervention for Child 2 was in proximity. During baseline 52% of sessions were within one standard deviation of the mean of socially successful peers, this improved to 60% during intervention. When Child 2's baseline data is compared directly to the mean of his socially successful peers, the percentage of sessions at or above this mean was 24% of sessions during baseline, then increased to 30% during intervention. As with RSI, though, proximity had a percent overlap of 100% from baseline to intervention.

While Child 2 was able to achieve levels of interaction within one standard deviation of his successful peers, a secondary rationale for movement from intervention to intervention fading related to Buddy 2. Buddy 2 was generally compliant when he was chosen and trained as a peer buddy, but after a couple of weeks of buddy service his teacher noticed that he was becoming less compliant in class. His class behavior improved, but he became less and less willing to be a buddy, despite changes in reinforcement. Child 2's movement to intervention fading improved his buddy's compliance by reducing the frequency of his buddy time.

Intervention Fading

Child 2's weekly mean levels of reciprocal social interaction remained within one standard deviation of the mean of his successful peers or higher during intervention fading, though he never achieved a session wherein his percentage of intervals with RSI was equal to or greater than the mean of his successful peers.

Intervention fading brought positive changes to Child 2's proximity. He maintained proximity levels within one standard deviation of his peers in 89% of sessions, with proximity at or above the mean of his socially successful peers in 44% of sessions. Congruent with these positive changes, the percent overlap for proximity between baseline and intervention fading was 89%.

In contrast, the percentage of overlapping data points for mutual positive affect from baseline to intervention fading was 100%. Child 2 did was at or above the mean established by his successful peers in 33% of intervals. These findings were identical for behaviorally defined friendship.

Friendship and affect seemed to be moving in a positive direction, while both proximity and interaction were within one standard deviation of peer means, suggesting successful fading of intervention and precipitating movement from intervention fading to maintenance.

Maintenance

Unfortunately, data from maintenance suggests that this phase change was premature. Initial levels of interaction well above the mean of his successful peers fell over a two-week period. The second week of maintenance Child 2's weekly mean was the second lowest recorded during the study. MPA and friendship scores mirrored this trend dropping from mean levels to six consecutive sessions with 0% of affect or friendship, the longest stretch for five weeks. Proximity also declined from the start of maintenance, bottoming out with the first session with 0% proximity since the beginning of intervention. Following this session, Buddy 2 was again asked to work with Child 2

for a session. The next day Child 2 resumed interaction levels consistent with those at the beginning of the phase.

Despite the descending trend and marked low point, proximity in the maintenance phase was within one standard deviation of the mean of successful peers in 89% of intervals and at or above the peers mean in 67% of sessions.

Sociometric Evaluation

Sociometric analysis following maintenance found that Child 2 had two friends. Observational data found that Child 2 interacted with these two friends in 2% and 8% of reciprocal interactions respectively. Interestingly, the child who accounted for 8% of Child 2's reciprocal social interactions in the maintenance phase accounted for all instances of friendship behavior. Neither of the children identified sociometrically as friends to Child 2 was the child's assigned buddy.

Proximity

While proximity was not originally thought to function alone as a dependent variable and was included in the data collection due to its function as part of the behavioral definition of friendship, the extent to which the participants played in proximity to other children was appreciably influenced by the intervention. These results suggest that the role of proximity as a social indicator may have been underestimated.

DISCUSSION

Effects on Friendship Formation

The purpose of this study was to determine whether preschool students with disabilities participation in a peer-mediated social skills intervention could precipitate development of a friendship or friendships. This question can be further broken down to query whether a student assigned a trained peer buddy will then become friends with the assigned buddy, and, particularly if not, will the student develop the skills needed to make a friend outside this relationship.

With respect to the children who participated in this study, the answer to the first question, did they make friends, has a mixed answer. In identifying friendship status this study used a triangulation approach. First, teachers were consulted, then behavioral observations were made and sociometric interviews conducted. Child 1 was believed by his teacher to have no friends, though he was found to have two mutual friends sociometrically. Neither child was among the children interacted with whom he interacted or played, however. Child 2, on the other hand, was thought to have no friends by his teacher and found to have no mutual friendships either identified sociometrically or behaviorally. For both of these children, at least two data sources concluded that initially the child had no friends. Following the intervention both children had sociometrically identified friends, Child 1's friendship observations corroborated this friendship, while Child 2's did not.

The qualifiers precluding the answer from being a yes are two-fold; first Child 2 appeared to have some difficulty comprehending what was being asked of him in

sociometric interview and second ambivalent teacher responses to the impact of the intervention on the target child in their respective classes. While Child 1 clearly understood when asked who he liked most, it appeared that Child 2 may not have understood the question. It is unknown whether this is due to his status as an English language learner or due to his disability, though the question was posed in both English and his home language. Further, in observations Child 2 participated in 35% of his interactions with one particular peer, calling this child by name in the interactions. When asked to identify who he liked most this peer volunteered that Child 2 was his best friend. Teacher comments, however, were less confident. While both teachers volunteered observations and opinions indicating that they believed that the child in their class who was assigned a buddy had gained socially, interacted more frequently, and was benefitted by participation in the study, neither asserted a belief that the child now had a friend, nor mentioned any other child as being their friend. Formal interview procedures were not conducted following the research; however, so actual beliefs about the children's friendship status are unknown. Thus, for each child sociometry suggests at least one mutual friendship, behavioral observations provide support to the conjecture that these children made at least one friend, though teacher evidence is uncertain. So, based on the assertions of two lines of evidence it appears that yes, Child 1's participation in a peer-mediated social skills intervention precipitated formation of friendship. Child 2, on the other hand, was found to have one friend sociometrically and a different friend behaviorally.

The answer to whether a friendship will be formed with the peer assigned as a peer buddy, interestingly, appears to be no, at least for the children in this study. None of

the children in this study, either those reported here or those who completed only part of the study, was sociometrically or behaviorally found to have formed a friendship with his or her peer buddy. This finding was particularly interesting as Haring and Breen (1992) reported that peers involved in the social intervention with young teenagers with disabilities tended to befriend the student they were assigned to. While this study obviously focused on older children, perhaps the success of the teenagers in this study forming friendships with their peer buddies was not related to the age of the students, but rather the use of multiple peer buddies. The current study used a single buddy, which became burdensome for the peer buddies. The target children, too, may benefit from greater numbers of peer buddies. Buysse, Goldman, and Skinner (2002) found that children with disabilities were more likely to have at least one friendship when they had exposure to larger populations of typically developing children. For a child in an integrated setting with a majority of typically developing peers who still does not have a friend, increasing the number of socially successful children with whom they have meaningful contact would both increase the likelihood of developing the skills to form a friendship and provide exposure to more typical peers to befriend.

As the children in this study did not form friendships with their peer buddies, it must be assumed that their progress in friendship formation is indicative of an increase in friendship skills necessary. But what are these skills? It was hypothesized that three key components of equal impact were reciprocal social interaction, proximity and mutual positive affect. Observational data contradicts this assumption.

Mutual positive affect (MPA) failed to improve at a consistent rate, and its presence was so rare that it predicted behaviorally defined friendship. Low rates of

mutual positive affect were observed not only in target children, but also in socially successful children. Socially successful peers in Child 1's class exhibited a mean level of 7% of intervals with MPA, and those from Child 2's class had a mean level of 5% of intervals with MPA. In contrast, these children had reciprocal social interaction means of 44% and 45% respectively. Low levels of MPA were partially attributable to the challenge of objective data collection and coding. To achieve objective coding of data, it was necessary to define MPA very precisely, so there was no ambiguity. The result of elimination of ambiguity was the implied assumption that if it was not observable positive affect then it was negative affect.

A second finding with respect to components of friendship was the function of proximity in setting the stage for friendship. When Child 1's proximity scores matched those expected of a socially successful child, or were within one standard deviation of the mean for more than 68% of sessions, and greater than the mean established by his socially successful peers in greater or equal to than 50% of sessions in a given phase then the percentage of sessions with RSI within one standard deviation of the mean and the percentage of sessions with RSI greater than the mean increased (see Table 4). Child 2 similarly demonstrated the greatest increase in the percentage of sessions with social interaction greater than the mean of socially successful peers when his percentage of sessions with proximity within one standard deviation of the mean of his peers was greater than 68% and the percentage of sessions with proximity scores greater than the mean of his peers was greater than 50%. These findings support the hypothesis that proximity provides an environment for a child to increase reciprocal social interactions. This is consistent with the findings of Buysse and colleagues (2002) that

Table 5

Analysis of Data Points as a Function of Their Relationship to the Mean and Standard Deviation of Socially Successful Peers

	Proximity within 1 SD	Proximity greater than mean	RSI within 1 SD	Δ RSI within 1 SD	RSI greater than mean	Δ RSI greater than mean
Child 1						
Baseline	47%	20%	0%		0%	
Intervention	79%	65%	33%	33%	14%	14%
Fading	70%	50%	60%	27%	20%	6%
Maintenance	83%	33%	50%	-10%	17%	-3%
Child 2						
Baseline	52%	24%	45%		6%	
Intervention	60%	30%	25%	-20%	10%	4%
Fading	89%	44%	67%	42%	0%	-10%
Maintenance	89%	55%	33%	-34%	22%	22%

preschoolers with disabilities in settings with greater ratios of typically developing peers were more likely to be in proximity to their peers, and were more likely to form friendships.

The significance of the buddy as a playmate is also important, however. Andrews and Krantz (1982) found that children in enforced proximity situations demonstrated no increase in interaction, while children given a cooperative task to engage in increased in interactions. The current study did not enforce proximity in the friendship observations, rather the target children chose to play in proximity to their peers, presumably due to their positive interaction experience with their peer buddy. Thus, the buddy session functions to make proximity to peers appealing, leading the target child to seek the proximity of peers, which then provides a setting for the target child to interact with peers becoming more socially competent and more likely to be able to form a friendship.

Limitations

The greatest single limitation was a characteristic of the population: low socioeconomic status. Poverty, an entry requirement for admission to Head Start Classrooms, had been found to be associated with increased risk for social, emotional, and behavioral problems. Webster-Stratton and Hammond (1998) studied the prevalence of conduct problems and levels of social competence for students attending Head Start and found that 30% of the children in their sample were above T-Cutoff scores in externalizing behavior on the Child Behavior Checklist, with 22% in the clinical range. Further 24% of children were found to be in the low to normal range of social competence. These levels of social and behavioral problems seem to be roughly matched by observed behavior in the Head Start classrooms where the current study took place.

Challenges incident to lower socio-economic status hindered this study in several ways. First, contacting parents to obtain consent proved more time consuming than anticipated. When consent had been obtained, it was difficult to find effective peer buddies. Many times a child with the necessary peer social skills also engaged in problem behavior or was defiant toward teaching staff. Other children displayed high levels of compliance, but lacked peer-related social competence. A third difficulty in isolating effective peer buddies was ensuring a language match, as many of the children attending these classrooms were English language learners and did not have the language skills to effectively communicate with a peer who spoke a different language or English. When peer buddies were isolated, additional practice time or multiple, highly explicit prompts (sometimes word-for-word suggestions or comments) were needed to help the buddy to generalize skills learned in training to the intervention session. Finally, low

socioeconomic status hampered this study indirectly through the higher levels of transience found in this population. Two children moved or announced their imminent move the day they would have been assigned a peer buddy. This necessitated further recruitment and delayed receipt of intervention, particularly for one child, who was then unable to complete all phases of the study before the school year ended.

A second limitation in generalizing this research is the sample size. Although two students' progress in developing friends following peer-mediated intervention suggests a possible mechanism for friendship development, replication is needed. Verification is needed to establish peer-mediated intervention's influence in preschool friendship as well as to examine other pathways wherein preschool friendship may be developed.

A third possible limitation is observer effect. Though this research took place over a period of months, which seemed to function to normalize the presence of data collectors in the classroom, it remains possible that the children behaved in different ways when data collectors were present. It seems more likely, though that observer effect may have come into play in sociometric evaluation. Some children may have shied away from providing who they really liked in favor of who they thought the researcher or even who they thought their teacher wanted them to like.

Suggestions for Further Study

Several suggestions for future research into interventions as facilitators of friendship arose from this study. The first suggestion addresses the inconsistency of changes in intervention phases. As proximity forms a platform for interaction, restricting the area where the target child can play to a small area where one or more other children

are also playing both during buddy time and in outside play time can increase the opportunity for interaction. This could be extended through the fading of the buddy enabling the target child to learn to independently interact.

Similarly, researchers should replicate this study with multiple buddies. Multiple buddies increase the likelihood that the target child would find a friend among their buddies. Further, this would allow researchers to evaluate whether reducing the frequency of buddy time functions to reduce demand and produce greater compliance on the part of the peer buddies.

The next suggestion is that researchers evaluate the level of proximity, reciprocal social interaction, and mutual positive affect among typically developing children. This could then be used as an evaluation tool that teachers could use to determine not only when a child has a deficit, but specifically what the deficit is.

In a related manner, mutual positive affect proved difficult to define dispassionately. Future research in this area may be able to address this component to preschool friendship by coding interactions as positive, neutral or negative, thus addressing the mood surrounding interactions. Not only would this provide a more sensitive gauge into affect, but it may also address an aspect of friendship not addressed in this study: being nice to each other (Dietrich, 2005).

Monitoring of friendships established through peer mediated intervention, should be measured over a longer period; addressing the question: if a child makes a friend following intervention this school year, will the child continue with this friendship or develop other friends in subsequent years? This would function to verify Howes (1998) assertion that friendship during the early childhood years functions to teach children the

social skills necessary to form future friendships, a particularly important investigation as Hall and McGregor (2000) found that students with disabilities studied longitudinally experienced decreased sociometric status and had fewer reciprocated friendships during upper elementary grades.

Finally, future research in the precipitation of preschool friendship following social skills intervention must address the impact of socioeconomic status. It is recommended, therefore, that future research examine more deeply the effect of socioeconomic status on social skills interventions by comparing the results of these interventions on groups of children from differing socioeconomic groups. Socioeconomic status of the studied children appeared to have a momentous impact on this study, but as it was not directly studied in the current work any hypothesis is purely conjecture. Some of the challenges related to socioeconomic status encountered in this study may be ameliorated in future studies through educating the parents about the importance of friendship skills in the preschool years and the role of preschool friendship as a vehicle to future friendships.

Conclusion

In this study two children were identified as having no friends then participated in a peer-mediated intervention. Both benefitted from the experience. This is consistent with the expected outcome of peer-mediated intervention (English et al., 1997). Additionally, evidences suggest that the children made at least one friend. If nothing else, these children enjoyed companionship, hopefully, however, these children will be able to use

the skills learned in this experience to form new relationships, as suggested by Howes (1998).

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APPENDICES

Appendix A
Teacher Interview Form

Appendix B
Sociometric Interview Form

Sociometric Interview Form

Instructions: circle child interviewed. Ask “who do you like most?” write numbers under pictures of children in order chosen. e.g. 1 under the first picture chosen, etc.

Appendix C**Data Sheet**

Appendix D
Treatment Integrity Form

Treatment Integrity Form

ADULT BEHAVIORS

1. Do adults prompt when peer buddies are not staying with their target child?
2. Do adults prompt when peer buddies are not playing with their target child?
3. Do adults prompt when peer buddies are not talking with their target child?
4. Do adults praise desired behaviors?
5. Do adults reinforce after the session?

PEER BUDDY BEHAVIORS

1. Did the peer buddy stay with the child?
2. Did the peer buddy initiate interactions appropriately and effectively?
3. Did the peer buddy respond to the communication from the target child in an appropriate manner?
4. Does the peer buddy play with the target child?
5. Does the peer buddy demonstrate positive affect?

Appendix E
Sample Buddy Lesson

Sample Buddy Lesson

- Researcher: Yesterday we talked about how kids communicate sometimes with words and sometimes without words. We also talked about how to know what your friend wants. Today we are going to learn the first step of being a good buddy.
- Researcher: The first step of being a good buddy is to stay with your friend. What is the first step?
- Child: Stay with your friend
- Researcher: Yes. Stay with your friend. This means that you do what your buddy is doing and go where your buddy goes. What if your buddy was playing in the blocks—how could you stay with your friend?
- Child: Play in the blocks?
- Researcher: Yes! What if he/she then went to the computer?
- Child: I go to the computer.
- Researcher: What if he/she went to play-doh (choosing a non-preferred area to the buddy)
- Child: I go to the playdoh.
- Researcher: If you are being a good friend and staying with your buddy then should you play with your buddy or someone else?
- Child: With my buddy.
- Researcher: So what is the first step to being a good buddy?
- Child: Stay with your friend.
- Researcher: Yes. Now you know how to stay with your friend you are ready to practice. _____ needs a buddy will you stay with him/her? If you need help, I will help you.

- Child: Okay.
- Researcher: When you are done, I will give you a sticker for being a good buddy.