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Redirects: A Strategy to Increase Peer Initiations

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Preschoolers' verbal abilities influence their verbal interactions with play partners. Previous research has suggested that preschoolers with specific language impairment (SLI) are more likely to initiate conversations with adults than with peers, as compared to their typically developing peers. This study investigated a teacher-implemented procedure, redirects, as a means to facilitate initiations to peers. A redirect occurs when a child initiates to the teacher, and the teacher then suggests the child initiate to a peer, thereby redirecting the child from an adult to a peer. Four preschool boys with SLI participated in the study. The teacher training was successful in increasing the teacher's ability to redirect the children's initiations. The children consistently responded to redirects by initiating to peers, and most redirected initiations received conversational responses from peers. Generalization effects to spontaneous peer initiations following the intervention period were demonstrated for 2 of the boys.

KEY WORDS: preschool, language disorders, intervention, social interaction

Traditionally, intervention goals with preschoolers for speech and language impairments have focused on the form and content of language. In recent years, with the implementation of PL 99-457 and the mandate to provide intervention in a least restrictive environment (LRE), preschoolers with disabilities are more likely to receive special services in programs with typical peers. Successful participation for children in these intervention settings requires the ability to interact with peers (e.g., Odom & Brown, 1993). Part of the rationale for the use of inclusionary models with children with specific language impairment (SLI) is that typical classrooms provide opportunities to participate in the full range of linguistic and social interactions. However, these opportunities are lost to children who are unable to, or choose not to, participate. For children with language impairments, the social uses of language in peer interactions may provide a unique set of challenges (e.g., Fujiki & Brinton, 1994). Thus, an important component of preschool intervention for children with SLI is the facilitation of interactions with peers (Guralnick, 1990).

Rice and her colleagues (Hadley & Rice, 1991; Rice, Sell, & Hadley, 1991) have explored the ways in which preschoolers' verbal abilities influence verbal interactions with play partners. In these studies, peer interactions were observed in a preschool classroom that serves three equally distributed groups of children between the ages of 3 and 5: children developing language normally (ND), children with language impairments (SLI), and children learning English as a second language (ESL). Thus, two of the groups of children had substantial English language limitations relative to the other group.

Attention in this work has focused on the ND and SLI groups. The variables of interest were the children's verbal interactions, in particular, initiations and responses. Initiations occurred when a child started an interaction; responses were conversational replies. Of special interest were the addressees of initiations and responses (i.e., to whom a child initiated a conversation, or to whom a child responded). No differences were found between the ND and SLI groups in the total

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number of interactions and average length of interactions in turns. Thus, all children in the classroom were engaged in verbal interactions with peers and teachers. There were, however, differences in the patterns of verbal interactions across groups. Normal language peers were the preferred peer addressees for all groups of children. Children in the ND group directed a significantly higher proportion of their initiations to peers than did the children in the SLI group, who directed more of their initiations to adults (Rice et al., 1991). The initiations of children in the SLI group were ignored by their peers twice as often as were the initiations of ND children to peers. Further, children in the SLI group more often than children in the ND group did not respond to the initiations of peers and adults (Hadley & Rice, 1991). Thus, the peer interactions of children in the SLI group were constrained more than those of their typical age-mates who had better speech and language skills.

There is evidence that the relative restrictions of peer interactions of the SLI group persist over time. Longitudinal data analysis on peer initiations (Rice & Wilcox, 1993) revealed that, in comparison to the ND group, the proportion of peer initiations of children in the SLI group was lower and increased less rapidly over the preschool years. What is especially striking about these findings is that the observed classroom setting is one in which there is considerable encouragement for verbal interactions between peers. It seems, then, that the placement of children with SLI in a highly responsive integrated intervention setting does not ensure that these children will interact with their peers at the same rate, or in the same manner, as their ND peers. Instead, specific techniques designed to enhance peer interactions may be necessary to ensure that children with SLI obtain maximal benefit from an integrated classroom setting.

Previous Studies of Peer Interaction

Over the past 2 decades, interventions to facilitate peer social interaction primarily with children with mental retardation and children with autism have been reported in the literature (see McEvoy, Odom, & McConnell, 1992, for a review). The application of these interventions to children with SLI has been suggested only recently. The most extensively investigated procedure has been peer confederate training, a procedure in which normally developing peers are trained to increase their initiations to children with developmental disabilities (see Odom & Strain, 1984). Other procedures have included teacher prompts and reinforcement (e.g., Antia & Kriemeyer, 1987; Odom & Strain, 1986), social skills training (e.g., McConnell, Sisson, Cort, & Strain, 1991), and sociodramatic script training (e.g., Goldstein, Wickstrom, Hoyson, Jamieson, & Odom, 1988). In general, these procedures have been successful in increasing peer interactions during the intervention period but gains seldom have been maintained when the intervention ceased. Additionally, generalization of skills to new settings (e.g., from an experimental setting to a classroom setting) has been problematic.

The lack of maintenance and/or generalization of treatment effects may be attributable to several factors. First, some studies were conducted in an environment separate from the child's classroom, for example, in an experimental playroom. Second, the peers in the experimental setting were not always classmates of the target child(ren). Thus, they were not part of the generalization setting (e.g., the target child's usual classroom). When the intervention procedures have included classmates as well as target children, rarely has the entire set of classmates been included. Third, whereas the length of treatment in days has been extended (e.g., an entire school year), often the daily length of treatment has been short (e.g., 5 minutes per child). This may not allow for adequate practice opportunities. Lastly, the observed changes in social interactions in the experimental settings have not been tied to the subject's motivation to interact. Rather, the implementation of strategies to promote peer interactions has focused largely on variables extrinsic to the child's motivation. For example, prompts might be given at pre-set intervals without regard to what the child is doing when the prompt is issued. That is, in previous studies, peer interactions were not necessarily encouraged when the child demonstrated some propensity to interact with peers.

Redirect Strategy

The present study was guided by a model of classroom verbal interactions inspired by the earlier studies of Rice and her colleagues. In those studies, it was noted that during play time children with SLI were more likely to direct their initiations toward teachers than toward peers. This fact suggested a possible point of intervention. At the time of a child's initiation to a teacher, the teacher can deflect the initiation to one of the child's peers. This procedure is referred to as a *Redirect Strategy.*

In this strategy, the intervention technique builds on instances when the child is interested in communicating, thereby capitalizing on the child's interests and motivation. The teacher is trained to implement the strategy when the child poses the opportunity; a typical peer is not trained to carry out a particular pattern of interaction with the child with SLI. The implementation of the unobtrusive strategy is embedded into the regular classroom activities, eliminating the need for the child to generalize a behavior from a training context to the classroom.

The possible flow of interactions among a child, a teacher, and a peer is illustrated in Figure 1 (see Hadley & Schuele, 1995, for a discussion of the implementation of redirects in a preschool classroom). The chain of events begins when a child initiates a verbal interaction with the teacher. The teacher may simply respond to the child's initiation and keep the conversational interaction localized between the teacher and the child. An alternative is for the teacher to redirect, by providing a verbal prompt suggesting the child initiate to a peer. A prototypic example follows.

The children are playing rodeo and the play props include a few stick horses.

A child approaches the teacher.

Child: *I wanna be a horse.*
Teacher: *You'll have to ask Peter. He has a horse.*
Child: *Peter, can I be a horse?*
Peer: *Sure* (and hands the child the horse).

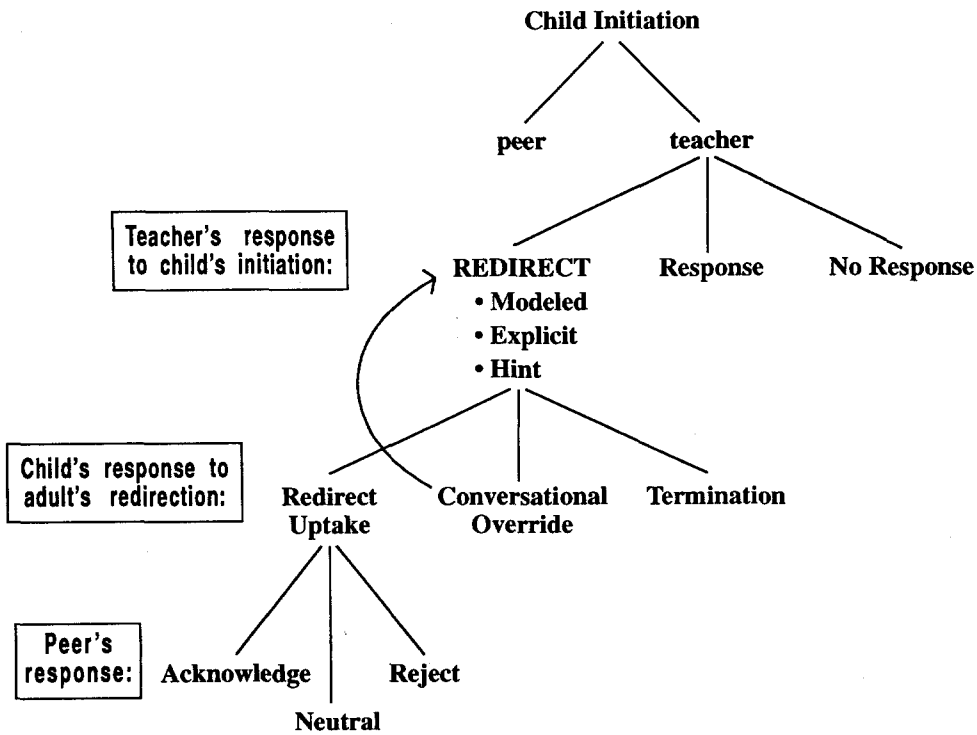

FIGURE 1. Redirected initiations.

After the teacher's redirect, the desired response is for the child to initiate to a peer, as in the illustration above. Alternatively, the child might ignore the redirect by ending the interaction or continuing the conversation with the adult. The last event of interest is the peer's response to the child's initiation. In the interaction above, the peer responded appropriately to the child's request. This model, then, envisions a relatively rich sequence of interactive events that can facilitate a child's verbal initiations to peers in the course of typical classroom interactions. In response to a child's verbal initiation, a relatively small change in the teacher's behavior can trigger this sequence of events.

The focus on children's verbal initiations to adults as events that can be manipulated to increase peer initiations is quite different from the focus of strategies reported previously where an adult prompts a non-interacting child to initiate to a peer or where the adult initiates an interaction with the child and then prompts the child to initiate to a peer. The most outstanding conceptual difference is that the strategy of redirecting is contingent upon the child having and displaying some propensity or desire to interact with others. Thus, we are attempting to capitalize on the child's interest in interacting to create a meaningful situation to encourage peer initiations. The chain of events we described in the previous paragraph begins with a child's verbal initiation, so that the child sets the chain of events into motion. Other strategies reported in the literature have focused on the absence of interaction as times to promote peer interactions. It is likely that children's motivation to interact influences the acquisition of interaction strategies and generalization of these strategies. Hence, a procedure that begins with an established communicative act is preferable to one that must facilitate the communicative interaction initially by providing a child a reason to interact.

There are two possible sources of risk in the implementation of a redirect strategy. One is at the level of the classroom teacher. Teachers may be unlikely to use the strategy, or the strategy could require inordinate amounts of training to instill the technique in a teacher's repertoire. One way to estimate this risk is to observe preschool teachers in classroom settings. In a preliminary informal study, observations were conducted in four local community preschools/day care programs and in integrated day care classrooms serving children with special needs as well as typical children. The observations were coded for occurrences of children's initiations directed to the teachers, and for the number of times the teachers redirected those initiations to other children. Only about 3% of the children's initiations were redirected by the teachers. In this sampling of preschool teachers, redirects were not part of their coaching/teaching strategies. The question is whether it is possible to train teachers to implement this strategy in a reasonably short period of time.

Another source of risk is that the target child's peers will ignore or reject the initiation. This risk may be especially high for children with limited intelligibility. On the other hand, young children are remarkably accommodating to child-like speech patterns, and many of the interactions in play settings have a high level of situational redundancy that makes it possible to guess what is meant. It is not clear what the actual risk will be. What is more clear is that the child who does not have the opportunity to initiate real discourse interactions (i.e., initiations toward peers) is denied opportunities to experience interactive success (even if such

success is intermittent) and opportunities to further hone verbal initiation skills. Given the absence of evidence about redirects in a naturalistic setting and the possible associated risks, what is needed is documentation of the implementation of a redirect strategy in a preschool classroom.

This study addressed three areas of interest:

1. Teacher training: Can a teacher be trained to redirect child initiations? That is, following a short inservice, will a teacher be able to redirect children's initiations?
2. Responses to redirects: Two kinds of response are of interest, those of the *target child* and those of the *peers.* When a child is redirected, is he or she likely to initiate to a peer? As a teacher increases the proportion of a child's initiations that are redirected, does the child likewise increase the frequency with which he or she then initiates to a peer? What is the peer's response to the redirected child initiation?
3. Changes in spontaneous peer initiations: Is a period of redirecting a child's initiations associated with gains in spontaneous peer initiations?

Method

Setting

This study was conducted in the Language Acquisition Preschool (LAP) at the University of Kansas during the fall and spring semesters of an academic year. Each semester was approximately 16 weeks long and there was a 4-week break between semesters.

LAP is an integrated preschool classroom designed to provide language intervention to children in a classroom setting (see Rice & Wilcox, 1995). The LAP language-focused curriculum (see Bunce, 1995; Rice & Wilcox, 1995) targets verbal interactions throughout the preschool curriculum. Three groups of children attend: children with language impairments (SLI), children learning English as a second language (ESL), and children developing language normally (ND). At the time of the study, 32 children were enrolled in LAP, approximately half in the morning class and half in the afternoon class. The number of children within each of the three groups was approximately equal in each class.

The study was conducted during the 40-min play-center time, a time with opportunities for spontaneous peer interaction. Children were free to play in any of four activity areas: art, dramatic play, quiet area (books and puzzles), and block area (blocks and trucks). The materials available in the quiet and block areas remained the same each day; dramatic play and art activities changed daily. Dramatic play included themes such as restaurant, mechanic, and veterinarian. Art activities were simple enough for children to complete with minimal adult assistance. During center time, the children were free to move about the room and interact with whom they pleased, whenever they pleased.

The adults in the classroom included a classroom teacher (in the morning class, a certified speech-language pathologist, and in the afternoon class, a speech-language pathology graduate student completing an internship), an assistant teacher with a bachelor's degree in early childhood education, and one or two speech-language pathology student clinicians (see Bunce & Watkins, 1995, for a description of the language-focused curriculum).

Participants

Child participants. Among the children with SLI enrolled in the LAP classroom, candidates for the redirect intervention study had to meet the following criteria: (a) demonstrate patterns of interaction similar to those documented in earlier studies of SLI children's initiations and responses in the classroom (cf. Hadley & Rice, 1991; Rice et al., 1991), in particular, a low proportion of initiations toward peers; (b) demonstrate at least a minimal frequency of initiations toward adults in the classroom; and (c) have had at least a year of participation in the LAP program. This criterion ensured that the children were known to each other, and that they had been unresponsive to the general encouragement for initiation toward peers that is part of the LAP curriculum.

Four boys with SLI met these criteria. In the fall, at the start of the study, the boys ranged in age from 3:10 to 5:3. Three of the boys were in LAP for their second year, 1 for his third. Two of the children (WB and EM) attended the morning session of LAP, and 2 (BA and RD) attended the afternoon session. Upon entry into LAP, each child was diagnosed as SLI by a certified speech-language pathologist. (See Rice & Wilcox, 1995, for enrollment criteria for children identified as SLI and enrolled in LAP.) All of the children demonstrated intellectual abilities within normal limits as measured by the Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983; see Table 1). None had a physical or visual disorder or a hearing loss.

Standardized speech/language testing was completed annually in LAP. In addition, spontaneous language samples were collected at the beginning and end of each semester. Assessment information is provided in Table 1. Standardized test scores are presented from two times: (a) 5 months prior to the beginning of the study; and (b) the month in which the study concluded. All of the children had expressive language deficits greater than one standard deviation below the mean as measured by the Reynell Developmental Language Scale (U.S. Edition) (RDLS; Reynell & Gruber, 1990). Two of the children (WB and BA) had significant receptive language deficits as documented by the Peabody Picture Vocabulary Test–Revised (PPVT-R; Dunn & Dunn, 1981) and the RDLS. Mean length of utterance (MLU) was calculated from language samples of approximately 100 utterances. At the beginning of the study, the subjects' MLUs ranged from 3.00 to 4.00. All MLUs reported for WB, EM, and BA are greater than one standard deviation below the mean for the children's chronological age (Miller, 1981). At the beginning of the study, RD's MLU was within normal limits; however, his MLU at the conclusion of the study was greater than one standard deviation below the mean for his age (perhaps due to sampling error).

Based on the results of the Goldman-Fristoe Test of Articulation (GFTA; Goldman & Fristoe, 1986) administered prior to the study, each of the boys demonstrated substan-

TABLE 1. Assessment information.

			Pre-intervention assessment					Post-intervention assessment				
				RDLS[4]		GFTA[5]			RDLS		GFTA	
Child	Age[1]	K-ABC[2]	PPVT-R[3]	Rec.	Expr.	%ile	MLU[6]	PPVT-R	Rec.	Expr.	%ile	MLU
WB	4:4	104	66	<63	<63	<1	3.08	81	<64	<64	7	2.28
RD	3:11	86	81	90	79	7	4.00	104	78	76	12	3.42
EM	5:4	92	109	118	73	<1	3.68	122	125	64	<1	3.86
BA	4:6	90	84	66	63	2	3.00	97	<64	<64	4	2.92

[1]Child's age at onset of study.
[2]Kaufman Assessment Battery for Children, Mental Processing Composite standard score; $M = 100$, $SD = 15$.
[3]Peabody Picture Vocabulary Test-Revised, Standard score; $M = 100$, $SD = 15$.
[4]Reynell Developmental Language Scales (US Edition), Standard score $M = 100$, $SD = 15$.
[5]Goldman-Fristoe Test of Articulation, percentile rank.
[6]Mean length of utterance calculated according to the Miller (1981) conventions.

tial articulation difficulties; their scores received percentile ranks of less than 10. Only one subject (EM) demonstrated a number of sound omissions as well as sound substitutions. Frequently, EM's spontaneous speech was unintelligible. RD and BA demonstrated consonant cluster reduction in addition to typical sound substitutions (e.g., b/v; w/l). The speech of RD and BA was usually intelligible, even to an unfamiliar listener. WB demonstrated some sound omissions, sound substitutions, and cluster reduction though his overall intelligibility was fair.

The verbal interactions of these children prior to the study indicated that, although the boys interacted with others in the classroom, they were more likely to initiate to adults than to peers. Thus, they were considered appropriate candidates for an intervention aimed at increasing verbal initiations to peers.

Adult participant. The assistant teacher in LAP (henceforth referred to as "the teacher") was chosen to implement the redirect strategy. It was her second year teaching in the LAP classroom and she was quite familiar with the children and the classroom routine. She had a bachelor's degree in early childhood education and, at the time of the study, was completing course work to obtain early childhood special education certification.

Intervention Study Plan

The study was conducted over the course of two semesters—a non-intervention semester (fall) and an intervention semester (spring). The chronological sequence of events of this study is outlined in Figure 2. We were interested in documenting effectiveness at two levels. First of all, we were interested in the daily implementation and effectiveness of the redirect strategy during the 9 weeks of intervention. Toward this end, data were collected with the Redirect Coding System (RCS). Secondly, we wanted to document any generalized effects the redirect intervention phase might have on altering children's patterns of interaction, specifically their spontaneous initiations to peers. This was addressed by calculating the proportion of initiations to peers from data collected with the Social Interactive Coding System (SICS; Rice, Sell, & Hadley, 1990).

Several procedures were followed to minimize possible threats to the internal validity of the intervention. The non-intervention semester served to demonstrate that the proportion of spontaneous peer initiations in the target children was, after at least 1 previous year in the classroom, not showing a marked increase. If this control was not met, it would suggest that maturation alone, or some changes implemented in the classroom at the outset of the academic year, could lead to a change in rate of initiations toward peers for these target children. Given that there was no

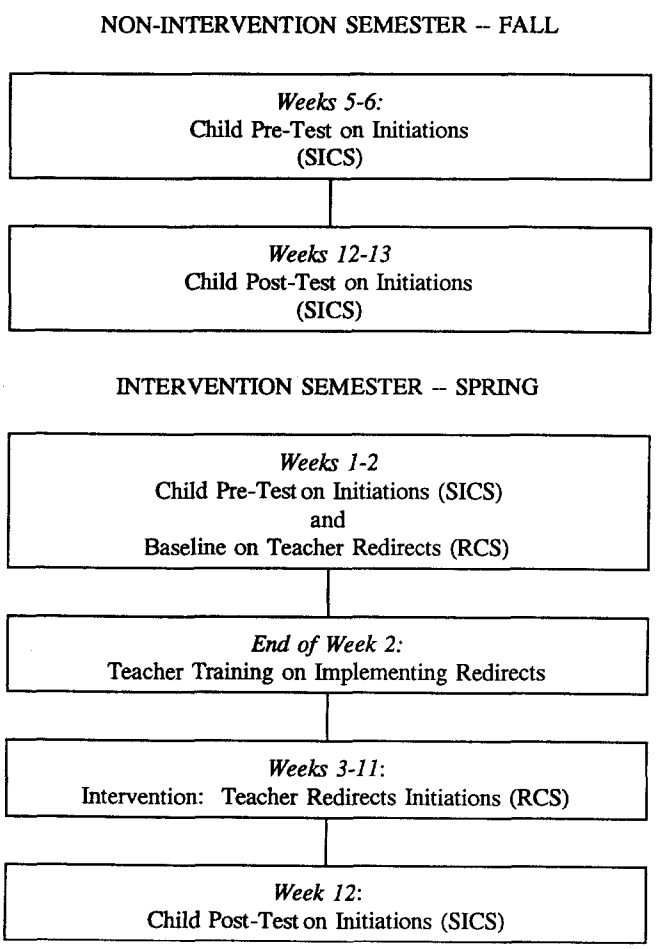

FIGURE 2. Redirect study plan.

evidence of such spontaneous increases in initiations toward peers, the children remained as candidates for the training phase. To minimize inadvertent alterations in the general characteristics of the setting that may have triggered change, the classroom setting was unchanged from the non-intervention semester to the intervention semester in the composition of the children in the groups, the classroom teachers, and general curricular activities.

The intervention was carried out with 4 children, 2 in each of two classrooms. Thus, it is possible to look for training effectiveness across children and across 2 different groups of children while holding the teacher constant. During the intervention semester, two features of the training design bear on internal validity. One is the baseline phase of observation of the teacher's behavior, to document that the teacher was not likely to use a redirect strategy prior to training. Following the teacher's training in redirects, a relationship between training and the observed variables on the RCS was inferred by evidence of temporally related changes in the frequency of observed variables. It was predicted that if the training was effective, there would be an increase in the frequency of the teacher's use of redirects, which would be accompanied by an increase in a target child's uptake on the redirects (i.e., an initiation toward a peer). Note that it was quite possible for the teacher's use of redirects to remain flat (i.e., unaffected) after training, and, independent of the teacher's use of redirects, it was possible that a child's uptake on the redirects could remain flat (i.e., unaffected).

The strongest possible outcome of a redirect intervention would be an indication that the children were more likely to initiate toward peers in their spontaneous interactions, without teacher facilitation. The available evidence in this study is the proportion of peer initiations in spontaneous interactions at the beginning and end of the fall non-intervention semester and at the beginning and end of the spring intervention semester. Note that this allows for examination of a possible pattern of within-semester increase, assuming that a child could "warm-up" as the semester's activities unfolded, irrespective of a teacher's use of redirects.

Data Collection on Redirects

Redirect coding system. The Redirect Coding System (RCS) was developed as an on-line coding system to record interactions between the child participants and the teacher. Our primary intention was to develop a coding system that captured the number of times that a teacher redirected a child's initiation and the children's responses to redirects. In interactions that began with an initiation from a subject to the teacher, all subject and teacher turns were recorded. Within these interactions, observers recorded: (a) initiations from a subject to the teacher; (b) the teacher's response to all subject turns; (c) the subject's response to all teacher turns; and (d) a peer's response to the subject's redirected initiation. See the Appendix for the codes used to capture these events.

In preparation for this study, we noted that adults also can use "prompted initiations" to assist children in initiating to peers. Although the exact form of a prompted initiation (i.e., what the adult says) can be identical to a redirect, one characteristic differentiates prompted initiations from redirects: who initiates the interaction. A redirect occurs in an interaction initiated by a child. A prompted initiation, on the other hand, occurs when an adult initiates the interaction with a child and then prompts him or her to initiate to a peer. It was speculated that training the teacher to redirect might result not only in an increase in redirects, but also in an increase in prompted initiations. For example, a focus on redirecting a child's initiations to peers may cause a teacher to become more sensitive to nonverbal indicators of a situation conducive to a redirect. If so, the teacher who learns to monitor a situation for likely redirect occasions may act on nonverbal indicators instead of waiting for a child to initiate to her. Thus, it was important to track the frequency of prompted initiations as well as redirects to document the potential source of change in children's spontaneous initiations to peers. The observers recorded any prompted initiations and the subject's response to the prompted initiation as well as any peer response.

Data collection. RCS data were collected daily from Weeks 2 through 11 of the intervention semester. LAP was in session 4 days a week. Daily coding began at the onset of center time activities (e.g., dramatic play, art, etc.) and continued for 30 consecutive minutes. Week 2 consisted of baseline data on the teacher's rate of redirects and prompted initiations. At the end of Week 2, teacher training was conducted. RCS data then were collected in Weeks 3 through 11 as the teacher implemented redirects.

Training and reliability. The RCS data were collected by two graduate students and one senior undergraduate student. The definitions and codes were developed by the investigators and refined during practice observations in the LAP classroom prior to the intervention semester. Coder training consisted of three phases: (a) practice in the classroom, (b) establishing reliability in coding videotaped interactions, and (c) on-line reliability coding. The observers reviewed written definitions and examples and practiced on-line coding in the classroom to become familiar with the procedures. Video training started with all three observers viewing a 30-min classroom interaction and discussing the accompanying coded transcript. The observers individually coded four 30-min videotapes. Disagreements between observers were discussed before viewing the next videotape. Interrater reliability, calculated on the last tape, was 93% (27/29) agreement on the redirect codes, 97% (319/327) overall agreement on codes, and 85% (327/387) overall agreement on events, averaged across pairs of observers. An event was defined as the occurrence of a behavior to be coded. One final session of on-line coding in the classroom was conducted. There was 92% (22/24) agreement on the redirect codes, 95% (209/220) overall agreement on the codes, and 90% (220/243) overall agreement on events.

Interrater reliability was calculated on the RCS data collected for the study by having two observers simultaneously code 19% of the center time periods. Interrater reliability was 92% (112/123) on the redirect codes, 98% (1889/1936) on all codes, and 85% (1570/1861) overall agreement on events.

Data Collection on Proportion of Initiations to Peers

Patterns of spontaneous initiations at the beginning and end of each semester were examined with the SICS (Rice et al., 1990). Observers noted all child initiations and to whom the initiations were addressed. Three types of addressees were possible: adults, peers, and general. In a general initiation, the child did not address his or her initiation to a specific person.

The fall semester served as a non-intervention comparison period. SICS data were collected during Weeks 5 and 6 of the semester, and again in Weeks 12 and 13 of the semester (Weeks 1 through 4 consisted of coder training). No specific intervention on peer initiations was conducted between these two times, although the usual language intervention was provided. Thus, these pre/post measures of the proportion of peer initiations were indicative of the change in social interaction over the course of a semester in the absence of an intervention specifically aimed at increasing peer initiations. In the spring intervention semester, SICS data were collected during Weeks 1 and 2 prior to the onset of intervention and again in Week 12 after the completion of the intervention phase.

SICS data were gathered for each of the four data collection times in the following manner. Data were collected in 5-min segments alternating between children. For example, Subject A was observed for 5 min, then Subject B was observed for 5 min, and then Subject A was observed for 5 min. No more than three 5-min segments per subject were completed in any one day. Data collection continued with each subject until a minimum of 50 initiations was recorded for that subject. To observe 50 initiations per subject, it took an average of 35 min across an average of 4 days. These modifications to Rice et al. (1990, 1991) were adopted to ensure the stability of the dependent measure, the proportion of peer initiations, for all subjects. Initiations that were prompted by the teacher were noted. However, in the calculation of the proportion of peer initiations, only spontaneous initiations were included and initiations prompted by teachers were excluded.

Reliability. The SICS data were collected by three graduate students, one of whom had collected SICS data for previous studies. Training procedures from Rice et al. (1990, 1991) were followed. Briefly, observers initially reviewed a coding manual to familiarize themselves with coding definitions and procedures and then practiced coding videotaped segments. Next, observers completed on-line coding in the classroom on randomly selected children with SLI until reliability was established (nine, five, and five coding sessions for each of the three pairs of coders). Interrater reliability was calculated on data collected during the last three sessions of training. The reliability, averaged across the three pairs of observers, was 86% (389/446) for verbal interactive status, 90% (316/354) for mutual events, and 93% (289/311) for addressee. The overall reliability was 91% (997/1081).

Interrater reliability was calculated on the SICS data collected for the study by having two observers simultaneously code 24% of the sessions. Agreement averaged across the three pairs of observers was 89% (669/772) for verbal interactive status, 89% (569/630) for mutual interactions, and 95% (505/561) for addressee. Overall reliability was 94% (1669/1832). The following two sections describe the procedures followed in the implementation of the redirect intervention.

Teacher Training

Teacher training was conducted at the end of Week 2 of the intervention semester. Pretest SICS and baseline RCS data had been gathered. The initial training was conducted by the first author in a 2-hour training session. The goal of the study was explained to the teacher. Verbal and written explanations of the redirect strategy were presented along with video examples. Discussion centered around different ways to redirect, as well as factors to consider when redirecting children. For example, the teacher may tell the child exactly what to say to a peer, or merely hint that the child initiate to a peer. Children might be redirected to nearby peers, to peers engaged in similar activities, and so forth. No specific instructions were provided on implementing prompted initiations. Rather, the investigator explained the difference between a prompted initiation and a redirect and indicated that the aim of the study was for the teacher to *redirect* children's initiations (see Hadley & Schuele, 1995, for additional information on implementing redirects).

Additional training (i.e., beyond the 1 day of training) during the intervention weeks was not extensive. Each day the teacher was provided with data on the proportion of child initiations that she redirected. On two occasions, the teacher's implementation of redirects was videotaped (approximately 15 min) and the first author reviewed the videotapes with the teacher. Discussion centered around missed opportunities to redirect, ways to tailor different types of redirects to different children or situations, and so forth.

Implementing Redirects in the Classroom

Beginning in Week 3 and continuing through Week 11 of the intervention semester, the teacher implemented the redirect strategy during the 40-min center time. At the outset of the study, the teacher was instructed to redirect all children; the targeted child participants were not identified. This allowed for assessment of the teacher's ability to implement redirects as a classroom-wide strategy. At the end of Week 6 (i.e., 3 weeks after the intervention began), the teacher learned who the targeted child participants were and she was instructed to increase redirects to them. She was not instructed specifically to alter her redirects to other children in the classroom.

Results

The results are presented next, organized according to the study questions posed earlier.

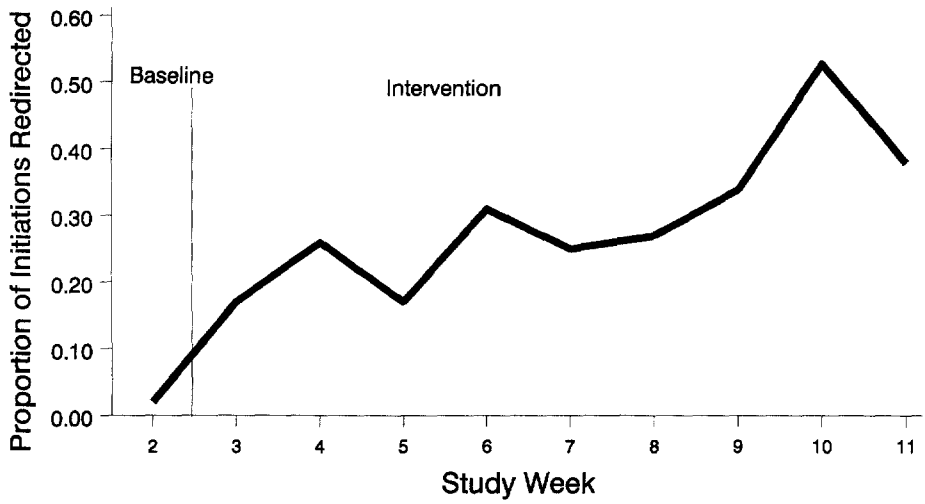

FIGURE 3. Redirected child initiations.

Effects of Training on the Teacher's Behavior

The teacher rarely redirected children's initiations during the baseline week. Only 3% (6/194) of all children's initiations were redirected, and less than 2% (1/52) of the subjects' initiations were redirected. Thus, prior to training, the teacher rarely used the redirect strategy. In this regard, the teacher participant is similar to the teachers observed in preschool classrooms in the community.

After the teacher training session, the teacher substantially increased her rate of redirecting children's initiations (see Figure 3). The rate of redirects for all children in the class (SLI, ND, ESL) was noted for the first 4 weeks of intervention (Study Weeks 3 through 6). The teacher redirected an average of one fourth (25%; 267/1053) of the children's initiations. The rate of redirects for the targeted child participants was examined for each of the 9 weeks of intervention. These data are reported in Figures 4 through 7. The weekly total number of redirects and uptakes is plotted for each child for each week of the intervention. Collapsed across the entire period, the average rate of redirects for the child participants was 30% (399/1251). The lowest rate of redirects to the child participants occurred in Weeks 3 and 5 of the study, 17% (14/84 and 17/101, respectively), and the highest rate, 53% (99/188), in Week 10 of the study. Thus, the teacher training was successful in increasing the teacher's ability to redirect children's initiations.

Recall that during Weeks 3 through 6, the teacher had been instructed to redirect initiations from all the children in the classroom. In these weeks the teacher redirected 25% of all children's initiations and 24% of the subjects' initiations. However, beginning in Week 7, the teacher was instructed to focus specifically on redirecting the four targeted child participants. In Weeks 7 through 11, 35% of the subjects' initiations were redirected. Thus, focusing the teacher's attention on particular children had the effect of increasing the rate at which these children were redirected. The shifts in the teacher's use of redirects are especially evident in the graphs for EM and BA (see Figures 6 and 7).

The number of opportunities to redirect varied across the child participants. EM initiated to the adult far more fre-

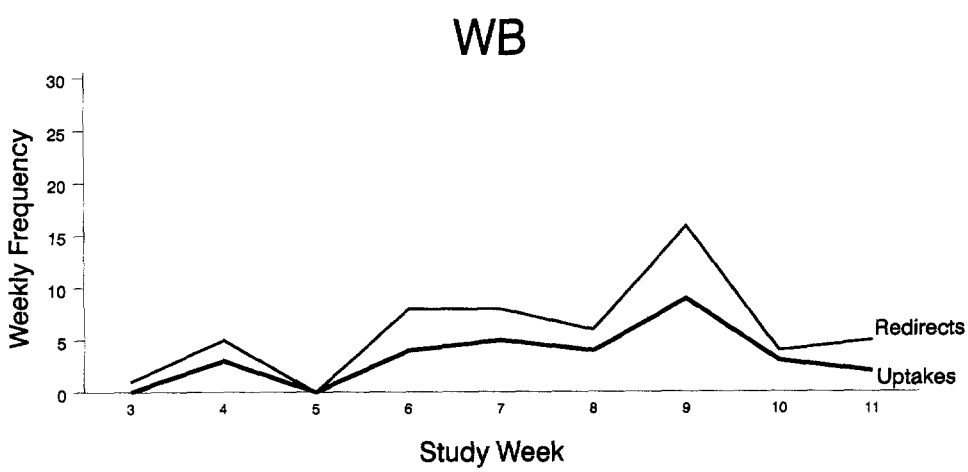

FIGURE 4. Redirects and uptakes: WB.

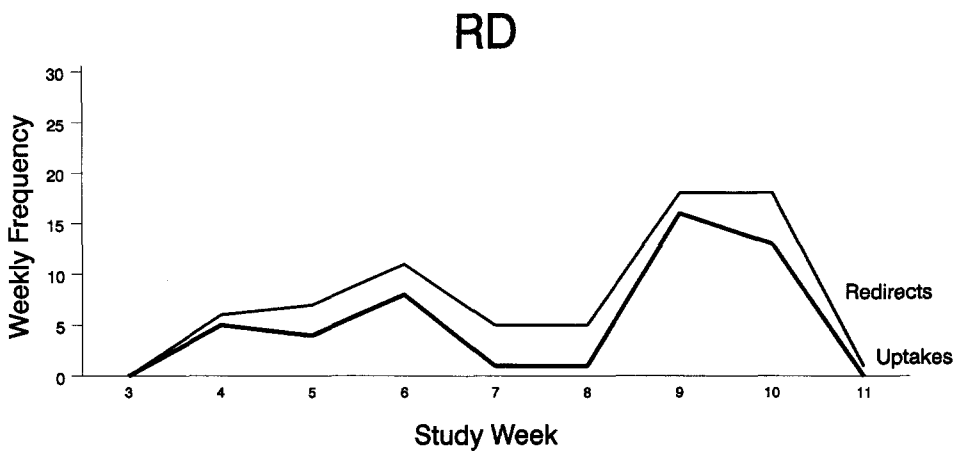

FIGURE 5. Redirects and uptakes: RD.

quently than the other children. His total initiations over the 9 weeks of intervention was 648, whereas the other 3 children initiated between 156 and 244 times. As might be expected, EM was redirected more frequently than the other child participants (see Table 2). EM had 214 initiations redirected, whereas the other subjects had between 53 and 72 initiations redirected. EM received an average of 6.5 redirects per 1/2-hour observation session, and the other children received an average of 1.6 to 2.6 redirects per session. Interestingly, despite the differences in the frequency of initiations across 4 child participants, the proportion of initiations redirected per child was similar, 30% to 34% (M = 32%). It seems that for this teacher, the optimal rate of redirecting was approximately one third of a child's initiations.

It is interesting to note the teacher's responses to initiations that were not redirected. Approximately one fifth of the subjects' initiations were not responded to by the teacher (R = 17% to 24%). It is probably impossible for a teacher to respond to all child initiations, given the frequency and overlapping nature of children's initiations to adults in preschool classrooms. In response to approximately half of the initiations (M = 48%; R = 43% to 54%), the teacher continued a conversation with the child but did not redirect. In these instances, she assumed the role of interlocutor, which often seemed an appropriate strategy. Some initiations would not be appropriate for a redirect. Additionally, one would not want to redirect so much that a child never had the opportunity to have a conversation with the teacher.

Responses to Redirects

Child participant responses. Given that the teacher was able to redirect the children's initiations, we were interested in the child participants' responses to the redirects. In response to a redirect, the child could uptake, override, terminate, or not respond (see Appendix for definitions and examples). Across all subjects half of the redirected initiations (57%) were responded to with an uptake; that is, after the adult redirected, the subject then initiated to a peer. This was the desired response from the child. Over the course of the study, EM had an uptake for 81 of 214 (38%) redirects, WB 30 of 53 (57%), RD 48 of 72 (67%), and BA 40 of 60 (67%; see Table 2). The child participants increased their frequency of uptakes as the teacher increased the frequency of redirects. This is illustrated for individual children in

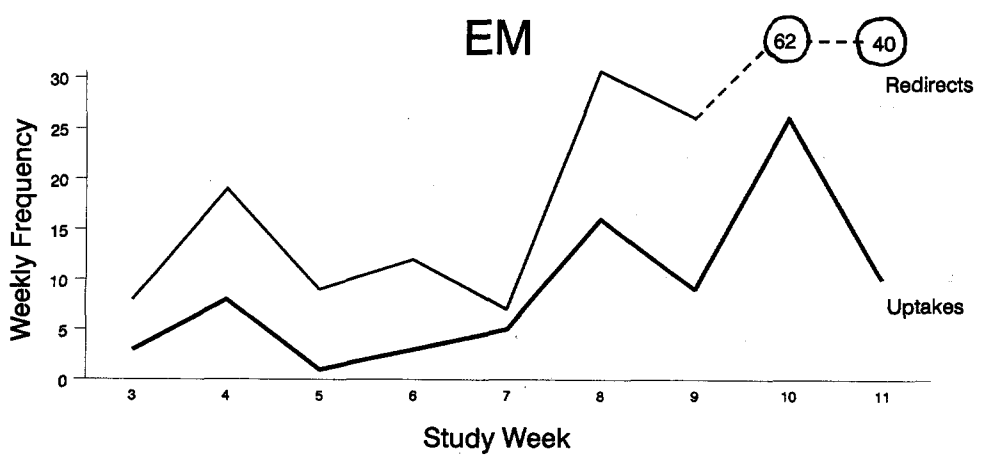

FIGURE 6. Redirects and uptakes: EM. The number of redirects for Weeks 10 and 11 exceeded the scale; thus, the total for each week is noted in the circles.

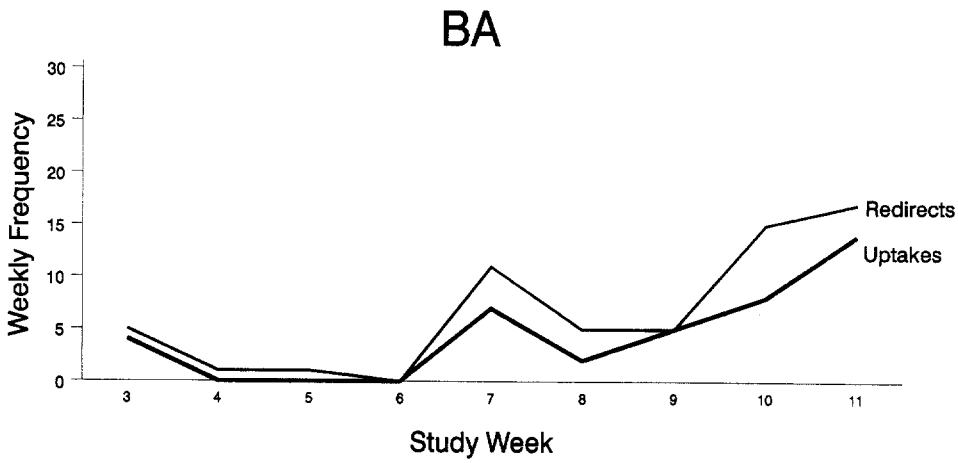

FIGURE 7. Redirects and uptakes: BA.

Figures 4 through 7 in which the number of redirects and uptakes is reported by week. As the teacher increased the number of redirects, for example, from Week 3 to Week 4, there was also an increase in RD's uptakes from 4 to 8 (see Figure 5). In sum, the child participants were responsive to the redirect strategy such that uptakes followed redirects and as redirects increased, so did uptakes.

An override occurred when a child verbally continued the conversation but did not respond to the redirect per se. Twenty-seven percent of the redirects received an override response (R = 13% to 47%). EM, who received the most redirects and had the lowest rate of uptakes, had the highest percentage of overrides. In a no-response situation, the child ended the interaction after the adult redirected (e.g., walked away, ignored the adult). An average of 16% (R = 7% to 30%) of the redirected initiations were not responded to by the subjects. A terminate response consisted of a verbal response specifically indicating the child did not want to comply with the redirect, for example, *"I don't want to ask Mary."* This type of response was observed only once.

When a child responded to a redirect with an override, the adult had an opportunity to redirect again. For example,

Child: *I need a spoon.* (initiation)
Teacher: *Ask Mary to get you one.* (first redirect)
Child: *I want the spoon you have.* (override)
Teacher: *I'm using my spoon. Ask Mary for her extra spoon.* (second redirect)

In this example, the child's response is an override, and both of the adult turns are redirects. In the teacher training, we alerted the adult to the possibility of redirecting after an override but suggested that redirecting more than two times within any one interaction seemed inappropriate. In our pilot observations, it appeared that if a child did not respond to the first two redirects, he or she was not likely to respond to further redirects within that interaction.

Overrides, and thus, opportunities for a second redirect, occurred rarely for WB (nine times), more often for RD (18 times) and BA (20 times), and quite frequently for EM (110 times). The adult redirected again in slightly more than one third (36%) of these opportunities. Although EM only occasionally responded to a second redirect with an uptake (19%), the other children responded with an uptake more often (40% to 67%). Whereas for 3 subjects a second redirect usually resulted in an initiation to a peer, this was not true for EM. Thus, the decision to redirect a second time may need to be sensitive to an individual child's response pattern.

Peer responses. In general, the peers' responses to the child participants' redirected initiations were positive. We divided peer responses into four categories: acknowledge; neutral; reject; or no response (see Appendix for definitions and examples). An acknowledge was a verbal or nonverbal conversationally appropriate response. It could be positive (e.g., *"I'm making a lion too"*) or negative (e.g., *"No you can't have the car"*). Two thirds (68%) of the peers' responses were classified as acknowledge (see Table 3). A neutral response, consisting of the peer looking at the subject but not overtly responding either verbally or nonverbally, accounted for approximately one fourth (26%) of the peers' responses. A no response consisted of the peer ignoring the child's initiation. This rarely (less than 1%) occurred in

TABLE 2. Redirected initiations and uptakes during intervention.

Subject	Total redirects	Percentage of initiations redirected	Total uptakes	Percentage of uptakes on redirects
WB	53	34%	30	57%
RD	72	30%	48	67%
EM	214	33%	81	38%
BA	60	30%	40	67%

TABLE 3. Peer responses to redirected initiations.

Subject	Acknowledge	Neutral	No response
WB	67%	20%	13%
RD	71%	27%	2%
EM	59%	33%	6%
BA	73%	23%	5%
Mean	68%	26%	7%

response to 3 subjects' initiations and sometimes for one subject's initiations (WB), 13%. A reject response was one in which the peer outright rejected the subject's initiation, for example, *"Get out of here, we don't want to play with you."* This occurred in only one instance across the entire period of intervention. In summary, when they initiated to peers following a redirect, two thirds of the time subjects received a response that acknowledged their initiation, and an additional 26% of the time the addressee looked at the subject, in a neutral recognition of the initiation. This pattern held across all 4 subjects and did not seem to be related in a general way to the overall accuracy of a child's articulation ability. If intelligibility was an issue it seemed to operate at the level of individual utterances and ambient noise conditions, instead of at the level of individual children.

Changes in Teacher's Use of Prompted Initiations

The coding system was designed to track prompted initiations as well as redirects. During the baseline week, the teacher prompted an initiation an average of 1.33 times per session (i.e., 30 min of center time activities), across all children in the class. Following the training session, the teacher's rate of prompted initiations to all children in the class averaged 4.04 prompted initiations per session (noted in Weeks 3 through 6). Thus, training this teacher to redirect was accompanied by an increase in prompted initiations as well as redirects.

There were no prompted initiations to the target child participants during baseline. However, after teacher training, the subjects did receive prompted initiations from the teacher. Across the 9 weeks of intervention, the target children received an average of 2.1 prompted initiations per session. RD received the lowest rate of prompted initiations, 1.6 per session and BA received the highest rate, 2.7 per session. Thus, the teacher training resulted in the teacher facilitating the subjects' initiations to peers through the strategies of redirects and prompted initiations.

During the intervention weeks, the teacher provided each child participant an average of 2.1 prompted initiations per session and 3.2 redirects per session. However, this pattern of more redirects than prompted initiations was true for only 2 of the children (RD, EM); WB and BA received more prompted initiations than redirects. Overall, the likelihood of an uptake on a prompted initiation, 61%, was similar to that on a redirect, 57%. Individually, 1 of the 4 child participants did not follow this pattern and was more likely to uptake on redirects (WB). However, the within-subject difference of uptakes on redirects versus uptakes on prompted initiations was never greater than 11%.

Changes in the Target Children's Proportion of Spontaneous Peer Initiations

In the non-intervention semester there was little change in the subjects' mean proportion of peer initiations (see Table 4). Individually, the proportion increased slightly for 2 subjects but decreased slightly for 2 subjects. Thus, in the absence of an intervention specific to facilitating peer initiations, no systematic change was observed across the 4 subjects.

In the intervention semester there was an increase in the mean proportion of peer initiations when comparing the pre- and post-SICS data for WB, who changed from .37 at the outset of intervention to .76 at the conclusion; virtually no change for RD, who remained at the .50 level at both times; EM increased from .18 to .43, which is .13 higher than his initial proportion in the non-intervention semester; BA increased from .34 at the outset of intervention to .65 at the end of the intervention semester, but the interpretation of this gain is complicated by the fact that a similar pattern was evident in the fall non-intervention semester. Thus, the outcomes on the generalization measure showed considerable individual variation, with unequivocal positive change for 2 children, no change for a third, and clear change for the fourth child that may or may not be fully attributable to training effects.

Discussion

Three broad questions were addressed in this study. First, was training the teacher effective in increasing her ability to redirect children's initiations? Second, are redirects effective; that is, did a target child initiate to a peer when the teacher redirected the initiation? Did a peer acknowledge the child's initiations? Third, were the weeks of intervention associated with an increase in the proportion of children's spontaneous initiations to peers?

Teacher's Use of Redirects

Baseline data indicated that prior to training the teacher rarely redirected the children's initiations. However, after a 2-hour training session the teacher increased her rate of

TABLE 4. Proportion of spontaneous peer initiations.

	Time of SICS data collection			
Subject	Fall-1	Fall-2	Spring-1	Spring-2
WB	.38	.26	.37	.76
RD	.42	.58	.50	.53
EM	.30	.14	.18	.43
BA	.48	.62	.34	.65
Mean	.40	.40	.35	.59
(*SD*)	(.08)	(.24)	(.13)	(.14)

redirects, although this rate fluctuated throughout the intervention weeks as did the number of opportunities to redirect. In sum, the teacher training was effective in increasing the teacher's ability to redirect children's initiations.

The teacher training time was minimal. Further, because implementation occurred within the usual routine activities, the teacher did not have to alter the day and identify a period of time to work on social skills. Odom, McConnell, and Chandler (1994) reported on teachers' perceptions of why implementing classroom-based social interaction interventions was difficult. These barriers included the time, the staff, and space in the classroom to conduct the intervention. The redirect strategy minimizes each of these barriers since its use can be overlaid on interaction activities already in place in the curriculum.

The frequency of the subjects' initiations to the teacher varied from week to week. Overall, approximately one third of the initiations from each child were redirected over the course of the intervention semester. It appears as if the teacher adjusted her rate of redirecting according to the rate of each child's initiations, perhaps as some sort of an informal calibration of a "fair share."

The teacher reported during the intervention and again at the conclusion of the intervention that redirecting the children's initiations was a strategy that did not come easily. She found that she had to consciously think about what she was doing, which also had the effect of heightening her awareness as to what the entire group of children around her was doing. For example, as she implemented the redirects, she realized that it was easier to redirect a child if she had an idea ahead of time of where she might redirect that child. Hence, she found herself checking out what the other children around her were doing and locating children who might be receptive to the initiation of another child.

This enhanced monitoring capacity may be implicated in the teacher's increased use of prompted initiations. As the teacher became more aware of the discourse dimensions of the classroom, she may have become more astute in detecting nonverbal indicators of joint attention patterns or times when a target child may have had a conversational interest in initiating a verbal interaction with another child but did not do so. In short, the teacher may have learned to watch for naturalistic occasions of conversational initiations, and acted upon these observations with prompted initiations. Our sense is that, in the context of the redirect training, the prompted initiations were likely to be attuned to children's communicative intent, which may not be the case in other ways to implement prompted initiations.

One concern the teacher reported in implementing the redirect strategy was a worry that she was pushing away children who needed her attention. What she seemed to convey with this concern was her (and perhaps other teachers') assumptions about what constitutes valuable conversational exchanges. Perhaps she regarded adult-child conversation as more valuable in the language learning process than child-child conversation. Further, there seemed to be a need to find a balance between redirecting and responding to children. The data, however, do not support a push-away effect. For all subjects, as the frequency of redirects increased, the frequency of uptakes likewise increased. There was no evidence of children's resisting the teacher's redirects, though it is plausible that at some higher rate of redirects this would be apparent.

In Week 7 of the intervention semester, when the teacher's attention was drawn specifically to redirecting the 4 targeted child participants, the teacher redirected the children at a higher rate than she did in the initial 3 weeks of intervention. It was not possible with the available evidence to determine whether there was a simultaneous decrease in redirects to the other children. The first several weeks of the intervention demonstrated that redirects can be implemented as a classroom-wide strategy to facilitate peer initiations. In the latter weeks of the intervention, the results suggested that if a teacher focuses on redirecting a small number of children, the rate of redirects is likely to be proportionately higher. It also may have been true that in the latter weeks of intervention it became easier for the teacher to redirect, and all children in the classroom received a higher proportion of redirects. Nevertheless, the redirect strategy can be implemented as a classroom-wide strategy or one to be used with a select group of children.

Children's Responses

In the weeks of intervention, the targeted child participants were likely to initiate to a peer following a redirect. Individual data graphs document a strong relationship between redirects and uptakes over the course of the intervention period. Overall, a little more than half of the redirects led to the target child initiating to a peer. The conclusion is that during the weeks of intervention, the redirects were effective in eliciting initiations to peers.

Peers responded overtly to about two thirds of these initiations, and an additional 26% of the initiations received a discourse-allowable neutral response, accounting for over 90% of the initiations. Ignoring the initiation or an overt rejection were rare responses on the part of peers. This is important evidence with regard to the possible risks for a child-initiator. Peers reacted to the initiations in a discourse appropriate manner, which would provide the child-initiator with valuable conversational experience.

A teacher's participation in the redirect strategy can lessen the risk of possible peer rejections in subtle ways. In our observations, there were many occasions in which it seemed likely that the peer overheard the teacher redirect a target child's initiation. The overheard redirect would provide valuable cues as to the possible meaning of an impending initiation, which would lessen possible intelligibility problems. It also would suggest to the peer that the teacher was monitoring, from a distance, the outcome of the target child's initiations, which may have helped reduce negative social consequences, and would, at the very least, suggest that the target child's initiation had implicit teacher support.

Was the Training of Redirects Associated With a Change in Children's Spontaneous Initiations Toward Peers?

For some children, there was evidence strongly suggesting that the implementation of the redirect strategy was associated with an increase in the proportion of spontaneous initiations toward peers in interactions beyond the teacher's immediate participation. This is most clear in the case of WB, who increased from previous levels of .37 to a level of .76, and who also demonstrated consistent uptake on redirects. A good case could also be made for EM, who increased from .18 to .43 and who also showed consistent follow-through on the redirects. On the other hand, RD clearly made no change in spontaneous proportions, remaining in the .50 range for three subsequent samplings. And the picture is ambiguous for BA, who did change from .34 to .65 in the intervention semester, but who also demonstrated a similar shift over the course of the non-intervention semester.

Two observations bear on these results. One is that there may be some effect of an optimal level of initiations toward peers. The child who seemed most stable was RD, who hovered around the .50 level for three of the samplings. This child also showed a strong response to the teacher's use of redirects, with consistent follow-through to initiate toward peers. Given that there is no clear "best level" of proportion of initiations toward peers, perhaps there is a sense in which the .50 level can be considered discourse-stable or consistent with an individual child's style of interaction. If so, perhaps there is a point beyond which it is difficult to change. That is, for this particular child, the point where he began the semester, .50, may represent the upper limit of his proportion of initiations that will be directed to peers. This upper limit may be different for other children. The cross-sectional data collected over several years in LAP suggests that for the normally developing children, the proportion of peer initiations averages approximately 60% but rarely exceeds 75% for an individual child (Rice & Wilcox, 1993). This range of proportions may be a good target for children to achieve, but may, in fact, be individually quite variable.

The case of BA presents a different picture. This child showed an increase of the same magnitude and same range for the non-intervention as well as the intervention semester. One possible scenario is some kind of a "warm-up" effect, in which, as the semester proceeds, he increases the proportion of initiations toward peers. Even though his response to the teacher's redirects showed a high probability of uptake, it is not possible to rule out change due to "warm-up," or change attributable to different influences in the non-intervention and intervention semesters. For example, it could be that the final sample for the fall semester yielded an artificially high estimate of BA's proportion of initiations by virtue of a chance sampling of interactions with a peer friend, and the return to a lower level of performance at the beginning of the second semester was a return to a more "true" proportion. Although there is no way to determine that possibility, it is worthy of consideration.

What these data point toward is the need to document generalized training effects, as a way of adding to what is known about the dynamics and effectiveness of techniques designed to facilitate peer interaction. Clearly, the goal of such teaching techniques is to go beyond the interactions of child with teacher. The findings from this study indicate that it is feasible to capture generalized changes in a child's tendency to initiate toward peers, following the implementation of a specialized teaching technique in the classroom, but that such changes can be influenced by a possible range effect (i.e., changes are more likely in proportions below .50 than at that level or above) and the measurement of change can be influenced by the vagaries of sampling or other extraneous factors.

Caveats and Conclusions

One unforeseen outcome of this study was that when a teacher was instructed in the use of a redirect strategy, she also altered her interactions with the target child to include prompted initiations as well. At no time was she instructed to curtail her prompted initiations. This technique seemed to be a natural extension of the idea that she would notice a child's intent to communicate, and would build on that observation to suggest that the child initiate toward peers. In a narrow sense, then, any generalized effects of training could be attributable to this combination of techniques rather than to an isolated effect of the redirect strategy.

In this study we did not examine qualitative aspects of the interactions. Nor did we document the length of interactions that resulted from the redirected initiations. Moreover, we have not examined any language changes in children's initiations after intervention, such as longer initiations. Further investigations might explore these aspects of redirects.

In conclusion, the redirect strategy appears promising for facilitating peer interactions in preschool classrooms. Training the teacher to redirect can put a chain of interactive events into action in which children initiate to peers more frequently. The events have the potential for influencing children's patterns of spontaneous initiations. With respect to providing intervention in a LRE, a redirect strategy that has high naturalistic validity and implementations is minimally intrusive to the usual classroom routine (e.g., no special activities). Although we evaluated redirects during center time activities, their use need not be restricted to this part of the day. The redirect strategy can be used throughout the day (e.g., at snack time, during outside play) so that peer interactions are facilitated at the most opportune times. Training with the teacher requires only a few hours, adding to the likelihood that this intervention strategy will be used by preschool teachers. Redirecting can involve all children in a classroom. Any child can be redirected and any child can be the recipient of a redirected initiation. Nonetheless, our experience suggests that teachers may present some resistance to implementing redirects. Thus, it is important to ensure that teachers recognize that verbal interactions among peers is at least as, if not more important than, adult-child verbal interactions, and that a child's peers are likely to be receptive to verbal initiations.

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Appendix

Redirect Study

Definitions of Codes

Teacher Codes:

RDW (redirect, direct, provide words): Teacher redirects child's initiation by providing the child with the words he or she might use when initiating to the peer.

Example: *"Tell Mary, It's my turn."*

RD (redirect, direct): Teacher redirects by specifically telling the child what he or she might do but not providing the child with the specific words to use.

Example: *"Tell Johnny that you want the truck."*

RD+ (redirect, direct): The teacher uses several of the above types of utterances, without intervening child turns and/or the teacher provides some added assistance to ensure the uptake on the redirect (e.g., turning the child toward a peer, showing where the peer is).

Example: *"Maybe you can ask Billy to cook that fish with you. Ask Billy. He's over by the pond. Go ahead and ask Billy to cook with you."*

RI (redirect, indirect): Teacher redirects by suggesting in an indirect or hinting manner that the child initiate to a peer. The child might just as easily interpret this type of redirection as a comment by the teacher.

Examples: *"Hmm, William might like to see that book."*
"You gonna eat with Andre?"

R (response): In response to the child's initiation the teacher provides an appropriate response but does not redirect the initiation.

NR (no response): The teacher ignores or otherwise does not respond to the child's initiation.

Child Codes:

I (initiate): The child verbally initiates to a teacher. Initiation can be a one-word or multiword utterance.

Example: Child: *Do you want a pizza?* (I)

R (response): The child responds to a teacher response. The previous teacher turn is an R.

U (redirect uptake): The child follows the teacher's redirect by initiating to a peer.

Example: Child: *Do you want a pizza?*
Teacher: *No, but you might ask Joey if he wants one.* (RI)
Child: *Joey, want a pizza?* (U)

O (conversational override): The child ignores the teacher's redirect and instead continues the conversation with the teacher. If appropriate, the teacher can try to redirect the child's subsequent utterance.

Example: Child: *Do you want a pizza?*
Teacher: *No, but you might ask Joey if he wants one.* (RI)
Child: *You owe me five dollars.* (O)

T (termination): The child overtly rejects the teacher's redirect. This could be either verbal or nonverbal. In either case the teacher does not have a second opportunity to redirect and must wait again until the child initiates to the teacher.

Example: Child: *Do you want a pizza?*
Teacher: *No, but you might ask Joey if he wants one.* (RI)
Child: *No, this pizza is for you not Joey.* (T)

Peer Codes:

A (acknowledge): The peer acknowledges/affirms/recognizes child's initiation by responding either verbally or nonverbally in a conversationally appropriate manner to the child's initiation.

Example: Child: *Do you want a pizza?* (I)
Teacher: *No, but you might ask Joey if he wants one.* (RI)
Child: *Joey, want a pizza?* (U)
Peer: *Yea, let's eat it.* (A)

R (reject): The peer overtly rejects the child's initiation either verbally or nonverbally. This type of response is a rejection of the child, not just a rejection of the initiation.

Example: Child: *Do you want a pizza?* (I)
Teacher: *No, but you might ask Joey if he wants one.* (RI)
Child: *Joey, want a pizza?* (U)
Peer: *I'm not playing with you.* (R)

N (neutral): The peer responds only by looking. He or she provides no verbal or gestural response to the initiation.

Example: Child: *Do you want a pizza?* (I)
Teacher: *No, but you might ask Joey if he wants one.* (RI)
Child: *Joey, want a pizza?* (U)
Peer: [looks at child] (N)

NR (no response): The peer does not respond to the child's initiation and does not look at the child in response to the initiation.