Collaborative Teaming to Support Preschoolers With Severe Disabilities Who Are Placed in General Education Early Childhood Programs

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Researchers in 2 studies investigated the effectiveness of a general education/special education collaborative teaming process in increasing the engagement, development, and learning of preschoolers with severe disabilities who were placed in general education early childhood programs that operated under a team-teaching model. The process included monthly team meetings to develop educational and social supports for targeted preschoolers, which were then collaboratively implemented by the educational team members. Study 1 focused on 3 teams composed of early childhood and special education teachers, instructional assistants, speech–language therapists, and parents who supported a child with significant disabilities attending one of the 3 participating preschools. Study 2 extended the collaborative teaming model to include all preschoolers with disabilities attending one of the preschool programs from the first study who required intensive levels of support (4 children). The effectiveness of the collaborative development and implementation of support plans—and the extent to which the collaborative teaming process was judged to be natural to the existing classroom culture and useful in producing positive child outcomes—was evaluated in both studies.

Inclusive education has emerged as a promising educational practice for teaching young children with significant disabilities (Beckman et al., 1998; Guralnick, 2001; Hanson et al., 1998; Hanson, Gutierrez, Morgan, Brennan, & Zercher, 1997; Odom, 2002; Rafferty, Piscitelli, & Boettcher, 2003). Although a single definition of inclusion within the early education context is yet to be accepted (Odom et al., 1996), there seems to be consensus about some common features of inclusive programs. First, inclusive education occurs when young children with disabilities are members of the same classrooms and community settings as their typically developing peers and receive necessary services to accomplish the goals established for them by an educational team that includes their parents and professionals. Second, these necessary services are provided through a collaboration involving all members of the team. Last, outcome measures are collected periodically to assess whether the goals established by the team for the preschooler are being met (Odom et al., 1996; Siegel, 1996).

A considerable body of literature has documented the positive outcomes of inclusive education for young children with disabilities, including gains in cognitive, language, motor, and social development (Rafferty et al., 2003; see also Siegel, 1996, for a review). Fundamental to the attainment of these outcomes are the abilities to communicate with others and to participate in social interactions (Hanson et al., 1997). Because early intervention settings typically encourage child-initiated learning and active physical and social engagement among children and with the immediate environment, children with significant disabilities are at risk for social isolation and nonengagement. In fact, young children with moderate-to-severe disabilities have been consistently found to spend significantly less time in interaction with their typically developing peers (see Odom et al., 1996, for a review). Without appropriate communication and social supports designed to promote participation and social interaction, young children with significant disabilities are at risk of social isolation and, as a result, limited growth (Hanson et al., 1997).

Effective implementation of social and communication supports for young children with significant disabilities necessarily requires the collaboration of all the

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members of the educational team. In fact, a considerable body of literature has established collaborative teamwork as one of the most critical components of quality inclusive early childhood education (e.g., Guralnick, 2001; Lieber et al., 1997; Odom, 2002). For young children with significant disabilities, educational team members must work together to integrate an often complex array of supports for learning, mobility, and classroom participation (Odom et al., 1999).

The challenge of coordinating the contributions of all team members is heightened by two facts: first, the traditional roles and responsibilities of related service personnel are changing, and second, a number of team members have overlapping functions within the inclusive model (Lieber et al., 1997). For example, parents, classroom teachers, special educators, speech–language therapists, and instructional assistants all have important roles in teaching and supporting a wide range of communication and language skills.

Unfortunately, a frequent problem that continues to afflict inclusion teams in early childhood settings is the absence of a team process for determining necessary communication and social supports. This problem may take several forms: (a) individuals serving on the team do not have a set of shared goals; (b) related service planning, implementation, and evaluation are conducted outside of the classroom and are unrelated to the educational program; (c) team meetings are scarce and, when they do occur, concentrate on the overall Individualized Family Service Plan (IFSP); and (d) families and school personnel interact with related service personnel as "experts" rather than as peers.

The emergence of inclusion as a widespread practice for the early childhood education of young children with significant disabilities necessitates conducting research to identify the factors and processes that have a positive impact on the ability of educational personnel to provide inclusive services. The purpose of the two studies reported herein was to investigate the effectiveness of a collaborative teaming process designed to unify and integrate educational, communication, and social supports for young children with significant disabilities included in general preschool settings. Study 1 focused on three educational teams (consisting of early childhood and special education teachers, instructional assistants, speech–language therapists, and parents) who supported a child with significant disabilities attending one of the three participating preschools. Study 2 extended the collaborative teaming model to include all preschoolers with significant disabilities who were members of one of the preschool programs from the first study. The investigation focused on evaluating the impact of the collaboration process on child outcomes and on the practicality and usefulness of the collaborative model when implemented for multiple children requiring more intensive levels of support.

STUDY 1

METHOD

Setting

This study was conducted at three preschools in one of the largest and most diverse school districts in the San Francisco Bay area. Two of the preschools had been including children with significant disabilities for 12 years; the third preschool had been including these children for 18 years. The classrooms used a team-teaching model (Odom, 2002) whereby an early childhood education teacher and a special education teacher shared responsibility for the education of all the children in their classroom. The two teachers collaborated in planning and implementing all educational activities. In addition, instructional assistants assigned by the district's preschool and special education programs supported all of the children in the classroom. Preschool A had 22 typical preschoolers and 8 children with disabilities who were supported by one general education instructional assistant and two special education instructional assistants. Preschool B had 25 typical preschoolers and 5 children with disabilities who were supported by two general education instructional assistants and two special education instructional assistants. Preschool C had 16 typical preschoolers and 3 children with disabilities who were supported by one general education instructional assistant and two special education instructional assistants.

Participants

Focal Children. Ali was a 4-year-old boy of Arab American descent. He was born healthy and reached developmental milestones until a viral illness at approximately 2 years of age led to ataxia. The results were severe physical and speech impairments and moderate cognitive delays. He was in his second year of attendance at Preschool A; however, he had missed the majority of the previous school year due to surgery and illnesses. Ali developed ocular flutter with nystagmus from the viral infection but did not wear corrective lenses. His auditory abilities appeared to be in the normal range. In the previous year, he had used a wheelchair for mobility; however, he could now move around school and home environments while holding onto furniture or with assistance from others. His walking gait was slow and awkward, he had difficulty balancing, and he often fell. Ali wore a protective helmet. His fine-motor skills were limited to grasping items in his fist, and he required assistance to complete tasks in small and large groups. His primary modes of communication were pointing, being in proximity, gazing, vocalizing, leading others by the hand, and patting others for attention. He understood one-step di-

rections and was beginning to use picture symbols to request specific food and drink items at lunch. He rarely initiated interactions with others, and when he did, they were primarily with adults. He did not show interest in books but would occasionally scribble on a chalkboard. He required assistance from adults to eat and was beginning to participate in a toilet-training program at home.

Amy was a 3-year-old girl of Latino and European American descent with Down syndrome. She was in her first year at Preschool B. Amy had a cataract in her left eye that was being corrected through use of an eye patch on her right eye for 3 hours a day. Her auditory abilities appeared to be in the normal range. Her gross-motor and fine-motor skills were delayed, and she had low muscle tone. Amy's primary modes of communication were speaking, pointing, showing items to others, being in proximity, and touching. She was soft spoken, and her speech consisted of one- to two-word utterances at school; however, her speech was reported to be louder and more complex at home. Amy primarily spoke to adults. Team members stated that her receptive skills appeared stronger than her expressive skills. She would respond to requests and comments from others but rarely verbally initiated interactions at school. She could identify some letters of the alphabet and some basic colors and animals and could rote-count to 10. Amy could eat and drink independently but required some assistance to use the toilet.

Tyrell was a 4-year-old boy of African American descent. A school district psychologist had diagnosed Tyrell as having severe cognitive and speech–language delays and orthopedic impairments. Tyrell was in his second year at Preschool C. His visual and auditory abilities appeared to be in the normal range. The previous year, he had used a wheelchair or crawled to move around the classroom and had used an adapted chair for sitting. This year, he walked with an awkward gait and would often fall and then crawl on the floor. He needed assistance to maneuver stairs or to stand up from the floor. Tyrell also required adult assistance for most fine-motor tasks. His primary modes of communication were vocalizing, gesturing, gazing, being in proximity, touching others, pushing others or an item away, and leading others to an item. He would occasionally sign "more" and "finished" with adult facilitation. Tyrell followed simple requests and directions with adult assistance. He was easily distracted during both large- and small-group activities. He did not purposefully use classroom materials or toys in a typical manner. Tyrell ate using utensils with adult assistance and drank from a cup with a straw. He wore diapers and was following a toilet-training routine at school.

Educational Teams. Five core members of the educational teams for each of these three preschoolers participated in the study. *Core members* were defined as individuals who had substantial daily involvement with the child (Giangreco, 2000). The early childhood teacher, the special education teacher, an instructional assistant, the speech–language therapist, and one of the child's parents developed, reviewed, and collaboratively implemented plans of support for each of the children. The three early childhood teachers were African American. Two teachers had 9 to 11 years' experience teaching in inclusive preschool programs, and one teacher had 1 year of experience. The three special education teachers were East Indian American, Brazilian American, and European American and had been supporting children in inclusive preschool programs for 9 to 11 years. The three instructional assistants who participated as core team members were assigned to the classroom by the district's special education program. Two instructional assistants were African American, and one instructional assistant was Hispanic. The women had 3 to 5 years' experience supporting children with disabilities in preschool settings.

Intervention: Unified Plans of Support

Unified Plans of Support (UPS; see Hunt, Doering, Hirose-Hatae, Maier, & Goetz, 2001; Hunt, Soto, Maier, & Doering, 2003; Hunt, Soto, Maier, Müller, & Goetz, 2002) were developed for Ali, Amy, and Tyrell through the collaborative efforts of their educational teams. The teams met once a month for approximately 1 hr 30 min to develop the initial plan and for 30 to 45 min in subsequent months to continue to refine the support plans. Each UPS contained the following:

- a list of educational supports (e.g., adapted materials and modified instructional content, performance requirements, teaching methods; cf. Janney & Snell, 2000);
- communication supports to promote classroom participation (e.g., low-tech boards for requesting and commenting, speech facilitation); and
- social supports (e.g., partner systems, social facilitation by adults, small-group instruction, interactive media) to increase interaction with peers.

Examples of educational, communication, and social supports developed and implemented for each of the children appear in Table 1.

Educational adaptations and modifications were designed to support the focal children's full participation in classroom activities (i.e., small- and large-group activities and play) while working at their individual ability levels and to help them rely less on individual support from an instructional assistant. Communication and social supports were established to decrease periods of

TABLE 1. A Sample of Items From Each Student's UPS

Student	Social participation	Educational participation	Communication/language	Self-care	Preliteracy/Premath
Ali	At playtime indoors, give Ali a choice board, and at recess, initiate play Encourage Ali to play ball with other children and to ride the bike with a partner during recess Set up co-active environments outdoors to encourage Ali to play with or alongside peers	Have Ali select a preferred activity instead of working 1:1 with an adult Have Ali sit next to (the teacher) and a peer partner during circle time and encourage him to actively participate in movement activities Have Ali help with the flannel story boards and calendar	Encourage Ali to approximate sounds and words Give Ali a choice board to make selections of preferred food items during lunch	Mother and father will stop giving Ali straws to drink liquids from at home Mother, father, and school staff will continue lateralizing exercises before meals Remove diapers from Ali when he arrives at school (Mother will send extra clothes)	Peers will read adapted books with Ali
Amy	Make sure Amy sits with three selected peers at breakfast and lunch and remind her to ask them for help when she needs it When Amy asks for help, tell her to ask a peer to help her and help the peer to understand the request	Make sure Amy sits facing the teacher and next to good peer models during circle time Gently physically and verbally direct Amy to look at the teacher or activity Guide Amy to name the other children in her group during small-group instruction	Encourage Amy to use phrases from a list of phrases used at home that her parents developed Encourage Amy to use a louder voice when interacting with her peers Encourage Amy to greet others, say "Thank you," and tell peers "I don't like it" if someone is doing something she doesn't like, or to say "No, [peer's name]" when she doesn't want something		Arrange opportunities for Amy to lead in reading familiar books with her peers Put name labels on tables so Amy and the other children will find their names and sit in that seat for small-group instruction
Tyrell	Peers will show Tyrell how to play with toys and will then play with him Peers will sit on the couch with Tyrell and "read" books to him or look at photo books Peers will show Tyrell how to play modified basketball or "tee ball," and then they will play with him	During circle time, have Tyrell sit next to peers who are not distracting Make sure there is some "lively" activity (movement/singing) during circle time	Develop a "communication dictionary" for Tyrell that includes symbols representing each of his nonverbal communication behaviors, what they mean, and ways in which peers could respond Mount the "dictionary" on the wall and frequently review with the students	Mother will send in spoons and forks used at home At school, give Tyrell a regular cup like the one he uses at home	Help Tyrell to use a switch to access cause-and-effect games on the computer that he will play with peers Arrange a regularly scheduled time each morning for Tyrell and peers to play computer games together

Note. UPS = unified plan of support.

nonengagement in classroom activities, increase the children's attempts to initiate communicative interactions in the context of instructional activities (e.g., asking questions, making comments, answering questions), and increase interactions between the children and their classmates. Construction and implementation of these support items were handled as part of the collaborative teaming process, with some or all of the items on each support plan serving as the functional independent variable.

The structure of the collaborative process allowed team members to share their knowledge, experience, and skills. Each support item was developed through a process that included sharing ideas and building on the suggestions of others. This collaborative problem-solving process had four key elements:

1. identifying the learning and social profile for each of the focal children,
2. developing supports to increase each child's educational and social participation in classroom activities,
3. collaborative implementation of the plans of support, and
4. a built-in accountability system (Giangreco, Cloninger, Dennis, & Edelman, 1994; Merritt & Culatta, 1998; Salisbury, Evans, & Palombaro, 1997; West & Idol, 1990).

At the beginning of the first UPS meeting for each child, team members reviewed the development of the child in the areas of preacademics (i.e., prereading, prewriting, and premath) and self-care (e.g., eating, toileting). In addition, they described the extent and quality of participation in classroom activities (e.g., contributing to group activities, working without support from the instructional assistant, participating in large-group activities, working collaboratively in small-group activities, seeking needed assistance) and interactions with classmates (e.g., initiating and responding to interactions). The team used this assessment information to build an initial support plan through a brainstorming and consensus process. Each item on the UPS was suggested by individual members of the team. The suggestion was followed by discussion of the effectiveness and feasibility of the support strategy. If the team members agreed on the item, it was added to the child's support plan. The team used a UPS form that consisted of a sheet of paper listing each support area. A grid on the right side of the paper was used to identify which members of the team would be responsible for implementing each support. The grid also provided a rating scale that could be used each month to evaluate the extent to which each support item was being implemented (i.e., *not at all, somewhat, moderately well,* or *fully*). The monthly rating procedures prompted team members to more rigorously implement items rated as somewhat implemented and provided the opportunity for them to discuss items that were not at all implemented. The latter items were often revised or deleted from the plan because team members perceived them to be ineffectual or impractical to implement. Based on the team members' experience in implementing each UPS, individual items were sometimes refined, expanded upon as learning occurred, or dropped, or additional items were added to the plan during subsequent meetings.

During the first UPS meeting for developing the initial support plan, the senior investigators modeled the process. In subsequent meetings, the special education teachers led the discussion. Members of the university team observed the discussion but did not contribute to it. They did, however, provide some feedback to members of the team during the observation and data collection processes.

Child Performance Measures and Data Collection Procedures

Design. Child outcome variables were investigated through a combination of data sources, including (a) systematic observation of the levels of engagement and interaction patterns of the focal preschoolers utilizing a multiple baseline design across children (Kazdin, 1982) and (b) team interviews to elicit team members' perspectives on the educational growth and social participation of the children. The three team interviews were conducted once during baseline (i.e., 1 week prior to intervention implementation) and twice during the intervention condition (i.e., 1 month postimplementation and at the end of the study).

Observational Measures. The *Interaction and Engagement Scale* (IES; Hunt, Alwell, Farron-Davis, & Goetz, 1996; Hunt, Farron-Davis, Wrenn, Hirose-Hatae, & Goetz, 1997), which was designed to measure interaction and engagement variables, utilizes a partial-interval recording procedure (see Note 1). Each 10-min observational period consisted of twenty 30-s intervals. Within each interval, 15 s were allotted for observation and 15 s for recording. During each interval, the observer noted the *first* communicative interaction (e.g., speech or touching a symbol on a communication board to make a request or comment) that involved the focal child. The observer also noted the identity of the interaction partner (e.g., a teacher, another child, an instructional assistant) and of the individual who initiated the interaction (i.e., the focal child or the partner). The observer also indicated the communicative function of the interaction (i.e., a request, protest, comment, or assistance to help the

partner accomplish some outcome) and the quality of the interaction (i.e., positive, neutral, or negative). Finally, the observer measured the engagement variables, including the level of engagement (i.e., active, passive, or not engaged) and the grouping pattern (i.e., child alone or with a group), that occurred during the majority of each interval.

Each child was observed about once a week from December through May during a session of approximately 2 hours. Disruptions of this schedule occurred because of holidays, special school events, and child absences. The same instrumentation and procedures were used to observe one classmate of the focal child. Classmate data were used to identify normative patterns for each of the dependent variables. These classmates were selected by the teachers, who had been asked by project staff to identify three peers in the class who they considered to be "average socially and academically." One of the selected children was observed each session; the order of observations of each of the three children was rotated across days.

Ten 10-min observations (5 for the focal child and 5 for the classmate) were spaced across the 2-hr session, with each period separated by a 2-min break. The observations were alternated between the focal child and his or her classmate, and the order of observations (i.e., the first child to be observed) was systematically rotated across sessions. The observational period was scheduled during morning small- and large-group activities and recess. Children in each of the three classrooms quickly adjusted to the presence of the data collectors, who were introduced by their teacher as visitors who would be observing in their classroom during the school year.

During baseline and after each UPS was implemented, an independent observer (one of the senior investigators) joined the data collectors on an average of 32% of the sessions (33% for Ali, 32% for Amy, and 32% for Tyrell). The level of agreement between the primary data collector and the independent observer was calculated by dividing the number of agreements on the occurrence of variables during each observational interval by the total number of agreements plus disagreements, multiplied by 100. The mean percentage of interobserver agreement on the presence of each of the interaction and engagement variables targeted by the IES was 96% (range = 93%–99%), broken down as follows:

- 97% for communicative partner (range = 94%–100%),
- 96% for initiation of an interaction (range = 90%–100%),
- 95% for acknowledgment of the initiation (range = 86%–99%),
- 93% for communicative function (range = 80%–98%),
- 98% for quality of the interaction (range = 95%–100%),
- 95% for level of engagement (range = 87%–100%), and
- 99% for child grouping patterns (range = 94%–100%).

Data from the IES observations can be analyzed in a variety of ways; however, the predicted outcomes for the current study were as follows:

1. decreases in the levels of nonengagement (not actively or passively engaged in activity, that is, not attending to ongoing activity, not being attended to by staff or classmates, or not assigned to a task or given materials);
2. decreases in the time the child is alone or is working one-on-one with an instructional assistant;
3. increases in interactions with peers that were neutral or positive in nature; and
4. increases in interactions initiated by the focal children (e.g., making comments, asking questions).

Team Interviews. Team members' perceptions of changes in the social and other classroom behaviors and the educational progress of the three focal children were assessed through an open-ended interview process implemented three times in the course of the study: approximately 1 week before implementation of the UPS, 1 month after implementation, and at the end of the study. The question "How is _____ doing?" was asked across the areas addressed by each UPS (i.e., preacademics and self-care, classroom participation, and social interaction with peers). Responses were audiotaped and transcribed verbatim for later analysis.

Intervention Fidelity: Item Implementation

The extent to which items on the UPS were implemented (LeLaurin & Wolery, 1992) was evaluated during each monthly UPS meeting that followed development of the original support plan. Team members and university project staff who observed in the classroom were asked to rate the extent to which each item on the support plan was being implemented. As noted previously, rating options were *not at all, somewhat, moderately well,* and *fully.* A consensus process was used in which each of the educational team members and the classroom observers reported their rating for each item. All members of the team agreed on an implementation rating for all UPS items

across each of the monthly meetings; however, if consensus was not reached, the majority opinion was used to rate an item.

Ecological Validity: Participants' Perspectives

The ecological validity of the UPS process—that is, the extent to which the collaborative teaming process was natural to the existing school culture and useful to the school community (Gaylord-Ross, 1979)—was evaluated through a group interview conducted at the end of the study. Questions were designed to elicit perceptions of the process in terms of the following topics: (a) the ways in which the UPS process was helpful, (b) characteristics of preschoolers who could benefit from the process, and (c) support items that they used with other preschoolers.

A senior investigator moderated the group interview. During the interview, the moderator would ask speakers to clarify their responses or provide more detail. Team members' responses were audiotaped and transcribed verbatim for later analysis.

Data Analysis

Behavioral Measures. At the end of each observational session, data collectors summarized for each of the three children and their classmates the percentage of total intervals of observation (there were five sets of 20 intervals for each child) in which the targeted behaviors occurred.

Interviews. The four members of the university team used a group discussion and consensus process to analyze the transcripts from each of the interviews conducted during three UPS meetings. Team members read each transcript and, using a line-by-line analysis (Strauss & Corbin, 1990), identified themes representing the perceptions of the interviewees on the categories of prereading, prewriting, premath, self-care, small- and large-group participation, and social interaction with peers. This was followed by a discussion of agreements and discrepancies in the analyses. The team members then developed a summary listing of themes within each category for each of the three interview periods. Finally, they reviewed the identified themes; eliminated redundancy; and identified and interpreted patterns across categories, interview periods, and children (Krueger, 1998; Morgan, 1993). All members of the three educational teams provided member checks of analysis accuracy (Lincoln & Guba, 1985) by reviewing tables that presented all of the identified themes and subthemes. All participants indicated that the outcomes described on those tables accurately represented their discussions.

These procedures were also used to analyze the transcripts from the interviews of the three educational teams at the end of the study to establish the ecological validity of the intervention. The categories for the initial analysis corresponded to the structure of the interview questions. Member checks of the accuracy of the final analysis were provided to all members of the three educational teams.

Results

Child Outcomes

Observation. The results of the analysis of observational data indicate that changes in preschooler performance associated with implementation of the UPS occurred in four areas:

1. decreased levels of nonengagement in classroom activities,
2. decreased occurrences of the targeted preschoolers' working alone or with an instructional assistant in a one-on-one context,
3. increased interactions between the focal children and their classmates, and
4. increased focal child–initiated reciprocal interactions with the teacher or other preschoolers (see Figures 1 and 2).

Before implementation of the UPS, the percentage of intervals in which the three focal children were not engaged in classroom activities was substantially higher than the average levels for the typical preschoolers (see Figure 1). Following implementation, nonengagement levels decreased from an average of 36.3% (18%–55%), 20.1% (8%–33%), and 45.2% (25%–58%) for Ali, Amy, and Tyrell, respectively, to 4.1% (0%–22%), 3.7% (1%–10%), and 14.2% (5%–31%), respectively. Ali's and Amy's levels of nonengagement were commensurate with those of their peers for the majority of the intervention condition. Tyrell's nonengagement level, although substantially reduced, remained above that of his peers. Additional supports will be needed to promote full participation for Tyrell.

The percentage of intervals in which the children were alone or working one-on-one with an instructional assistant during the baseline condition was also substantially higher than the average levels for the "typical" peers (see Figure 1). This was most dramatically the case for Ali and Tyrell. Following implementation of their support plans, levels of being alone decreased from 43.3% (25%–58%) for Ali and 37.5% (30%–51%) for Tyrell to 4.1% (0%–15%) for Ali and 12.2% (1%–24%) for Tyrell. The

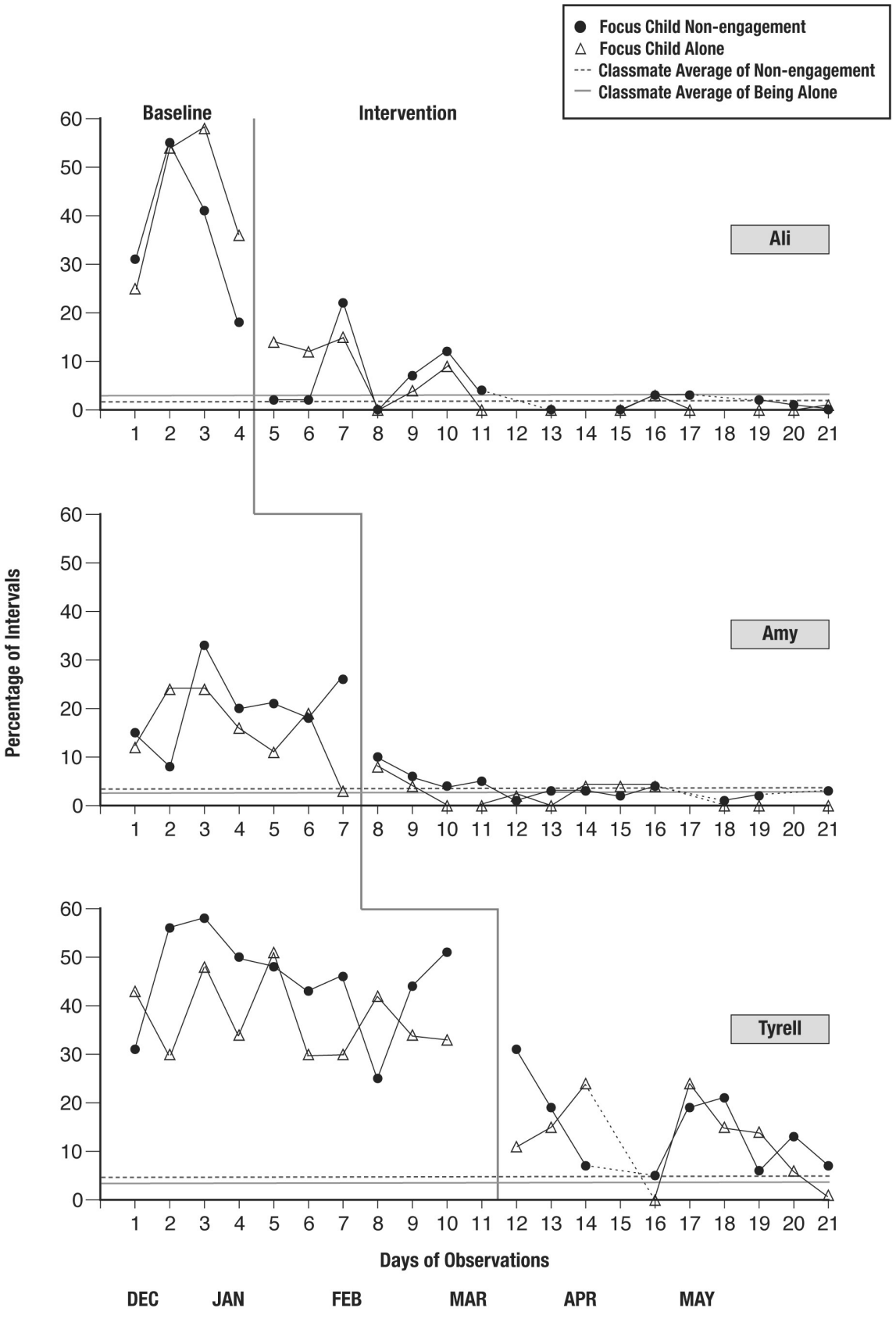

FIGURE 1. Study 1: Percentage of intervals of (a) nonengagement and (b) being alone or working one-on-one with an instructional assistant.

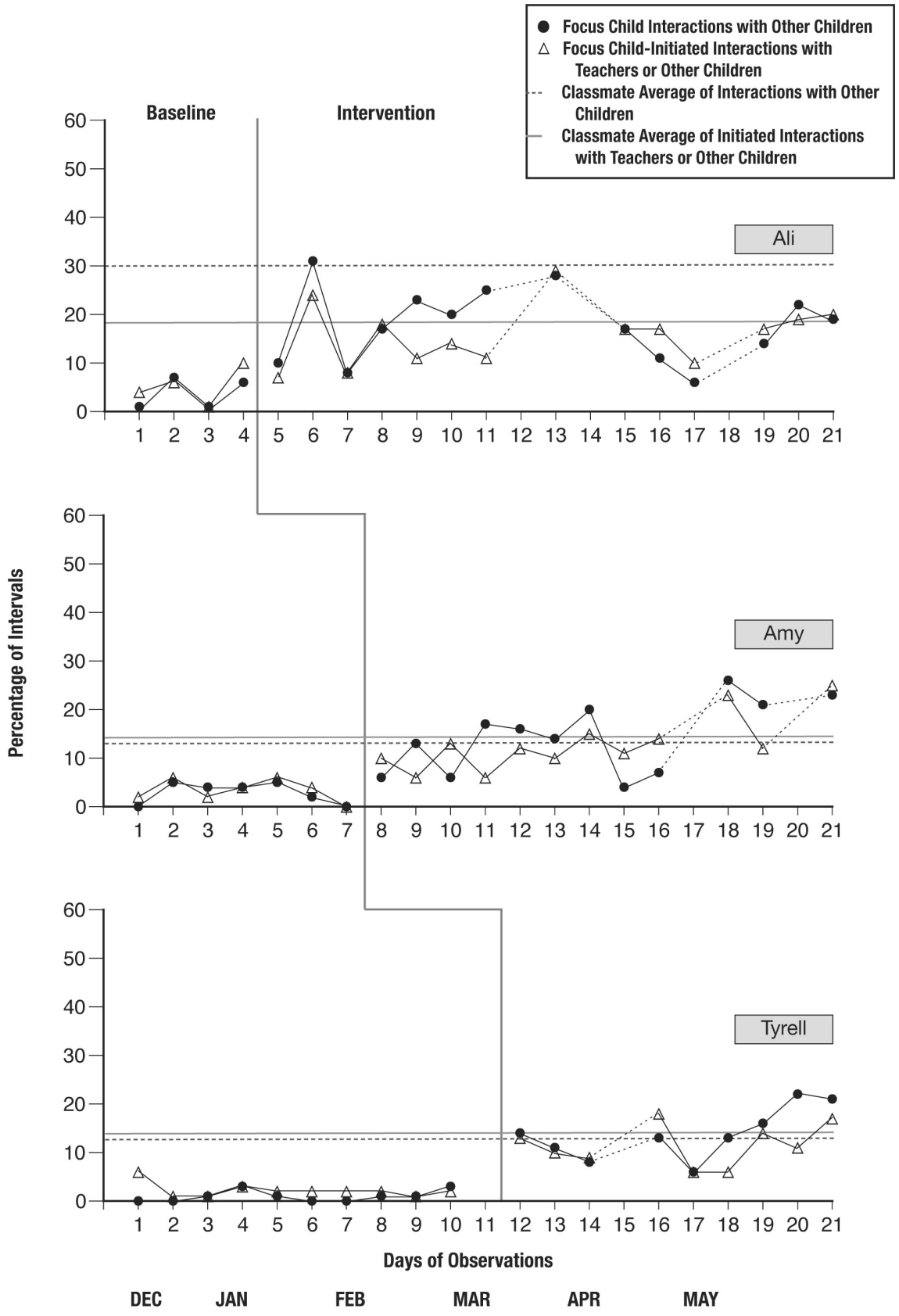

FIGURE 2. Study 1: Percentage of intervals of (a) interactions with other children and (b) child-initiated reciprocal interactions with teachers or other preschoolers.

average percentage of intervals of being alone for Amy decreased from 15.6% (3%–24%) during baseline to 2.2% (0%–8%) during intervention; however, the abrupt drop in the percentage of intervals in which Amy was alone during the final baseline session weakens the demonstration of a functional effect. Ali's and Amy's levels of being alone after the plans of support were implemented were similar to those of their peers; however, Tyrell's level of being alone, although substantially reduced, was higher than the levels of the typical preschoolers, thus indicating a need for additional strategies to include him in activities with peers.

Before implementation of the UPS, the children's levels of interactions with other preschoolers were very low: 3.8% (1%–7%) for Ali, 2.9% (0%–5%) for Amy, and 1% (0%–3%) for Tyrell (see Figure 2). After implementation of the UPS, which included communication and social participation supports, levels of interaction with peers increased to 17.90% (8%–31%) for Ali, 14.4% (4%–26%) for Amy, and 13.8% (6%–22%) for Tyrell. The levels of interaction for Amy and Tyrell increased to levels similar to those of the typical peers. The level of interaction for Ali did not reach the levels of his peers but did increase substantially. It is interesting to note that the interaction levels for Ali's peers were twice as high as those of the typical preschoolers in the other two settings. This difference in peer levels of interactions across preschool programs may be due to the structure and type of activities for each program or to the characteristics of the peers.

In addition to interacting more with the other preschoolers, the children more often *initiated* interactions with their peers and teachers (see Figure 2). During baseline sessions, the average percentage of intervals of initiated interactions were 5.3% (1%–10%) for Ali, 3.4% (0%–6%) for Amy, and 2.2% (1%–6%) for Tyrell. After UPS implementation, initiated interactions increased to 15.9% (7%–29%) for Ali, 13.1% (6%–25%) for Amy, and 11.6% (6%–17%) for Tyrell. These levels were commensurate with those of the typical preschoolers.

Interview. Educational team members' perspectives regarding the preschoolers' performance during the baseline condition, 1 month after implementation of the UPS, and at the end of the study in three of the five targeted areas (social participation, educational participation, and communication and language development) are presented in Table 2 (see Note 2).

Ali's team members described the following changes in skill development and interaction patterns that they associated with implementation of his support plan: (a) interaction with peers without adult facilitation through the use of multimodal systems of communication, (b) active participation in all educational and play activities, (c) expanded functional communication with the support of communication boards, (d) development of friendships with peers, (e) independent use of the toilet at school at scheduled times, and (e) an increased interest in books and storytelling.

Amy's team members identified the following changes in her performance after implementation of the UPS: (a) increased initiated communication with peers and adults using a louder voice and more complex sentence structures, (b) active participation in small-group activities with peers in class and at recess, (c) increased attention during large-group activities, (d) participation in small-group activities without adult facilitation, (e) increased social assertiveness, and (f) turn-taking with peers in narrating a story.

Finally, the team members described the following changes in Tyrell's skill development and interaction patterns: (a) interaction and play with peers, who now understood and responded to his nonverbal communicative behaviors; (b) increased responsiveness to staff requests and directions within the structure of familiar small- and large-group activities; (c) initiated interaction with peers for attention, play, and assistance; (d) increased responsiveness to peer interactions; (e) increased interest in books and storytelling; and (e) enjoyment in playing computer games with peers.

Intervention Fidelity: UPS Implementation

The team held four meetings for Ali and Amy and three meetings for Tyrell during the intervention condition. After the support plan was developed, the following implementation ratings for items on each child's UPS were gathered at the first meeting: (a) For Ali, 80% of the supports were fully implemented, 6% were implemented moderately well, and 13% were somewhat implemented; (b) for Amy, 80% of the supports were fully implemented and 20% were implemented moderately well; and (c) for Tyrell, 80% of the supports were fully implemented, 10% were implemented moderately well, and 10% were not implemented. Implementation ratings of items on each UPS gathered at the last meeting indicate that 100% of the supports for Ali, Amy, and Tyrell were fully implemented. These implementation ratings suggest a high degree of intervention fidelity throughout the intervention condition.

Ecological Validity: Participants' Perspectives

Benefits. Participants across educational teams suggested that the collaborative process allowed team members to share their expertise and perspectives in developing a holistic view of the child. In addition, they suggested that regularly scheduled team meetings increased account-

TABLE 2. Team Members' Perspectives on Child Progress: Social and Educational Participation and Communication and Language Development

Student	Educational area	Preintervention performance	Postintervention 1 performance	Postintervention 2 performance
Ali	Social participation	Primarily initiated interactions with adults Stayed with an adult, sometimes holding her hand Occasionally attempted to initiate interactions with peers but failed to sustain them	Initiated interactions with peers more frequently using touch, gestures, and vocalizations Engaged in interactive play with peers	Developed friendships with four peers Initiated and sustained peer interactions without adult facilitation
	Educational participation	Did not stay with peers during large-group activities unless supported by adults Was easily distracted during circle time Worked one-on-one with an adult for small-group activities	Began to display disruptive behaviors across structured and unstructured activities Remained independently engaged in circle time when UPS items were implemented (e.g., sat next to an assigned peer and was given an active role in the activity) Participated in small-group activities if facilitated by an adult	Was an active member of large-group activities Remained with the group throughout the activity Remained in small-group activities without facilitation
	Communication/ Language	Communicated with touch, proximity, pointing, vocalizations, and speech approximations Said "No" and "Yes" to request or reject food or drink; said "water" (in Arabic) and his grandfather's name Made food choices by pointing to a picture symbol from an array of five	Continued to use nonverbal communication to make requests, choices, and to initiate interactions Used communication boards with adults and peers across large- and small-group activities to make requests and choices	Communicated with peers and adults using a variety of vocalizations and gestures Used a communication board with a subject–verb–object layout to make requests during lunch Expanded use of communication boards in a variety of settings with peers and adults Said "ball" and "water" (in Arabic) and some numbers
Amy	Social participation	Interacted primarily with adults at school Infrequently initiated interactions with either adults or peers Did not engage in extended play with peers at school Sought out one friend for play	Preferred to interact with adults and was shy with peers Responded to peer questions and engaged in conversations that they initiated Engaged in parallel play at recess Observed and imitated what peers were doing at recess	Enjoyed participating in small groups with children during class activities and recess Was verbally interacting with peers

(table continues)

(Table 2, continued)

Student	Educational area	Preintervention performance	Postintervention 1 performance	Postintervention 2 performance
Amy *(cont.)*	Educational participation	Did not like to participate in large-group activities except when she had an active role Removed herself from circle time activities Participated in small-group activities facilitated by an adult	Was able to participate in large-group activities when the UPS items were implemented (e.g., sat next to an assigned peer, given an active role, and redirected by an adult)	Watched and imitated peer models during large- and small-group activities Participated in small-group activities without adult facili tation
	Communication/ Language	Seldom initiated comments or conversations but was responsive to the initiations of others Communicated primarily with adults at school Spoke in a soft voice at school and used a louder voice at home Communicated much more frequently with family members than with school staff or peers Used a variety of communication functions and language structures at home but not at school	Primarily used single words at school More often used whole sentences at home Initiated some requests at school With adult facilitation, combined words to make a request or comment	Spoke louder at school and was easier to understand Initiated more often to peers using speech More frequently stated complete sentences without facilitation and correctly used "I" and "me" Expanded her vocabulary
Tyrell	Social participation	Was affectionate with peers and adults at school and at home Watched peers but did not initiate interactions Seldom interacted with peers in class or at recess	Responded to peers who were more frequently initiating interactions More often used nonverbal behaviors to get peer attention and to play with a peer Actively participated in play with peers without adult facilitation for short periods of time	Approached students and enjoyed playing with them across a variety of interactive activities Was able to successfully communicate with peers because they now understood the intent of his nonverbal behaviors Was more responsive to peer assistance Took turns with peers during simple, interactive computer games
	Educational participation	Only attended to large-group activities if there was music and singing Only remained in circle with adult facilitation	Attended to and participated in more large-group activities when UPS items were implemented (e.g., active activities, music, rhyming stories, sitting next to positive peer models)	Followed directions within the structure of small- and large-group activities Participated in "calendar" activities during circle time

(table continues)

(Table 2, continued)

Student	Educational area	Preintervention performance	Postintervention 1 performance	Postintervention 2 performance
Tyrell *(cont.)*		Was easily distracted by peers	More often watched peers during small group activity	
		Participated in cooking and some art activities with adult facilitation		
		Watched students at the computer		
	Communication/ Language	Waved to say "Hi"	Approached adults for assistance	Was more responsive to peer initiations
		Reached for what he wanted		Approached peers for assistance
		Signed "more" and "finished" with adult facilitation		Signed "more" and said "ha" for "hi"
		Took adults by the hand to make requests		
		Said "ee" for eat"		

Note. UPS = unified plan of support.

ability and helped them to consistently implement the plans of support.

Participants from two of the three teams thought that the team meetings provided the opportunity to reflect on their professional practices. One early childhood education teacher remarked, "Now, when we are meeting, I can look back and think, 'How can I improve on this?' It has helped me as a person. You know, if we grow, the children grow. Once the teachers stop growing, children stop, too."

Team members across the three preschools commented that the UPS meetings gave parents the opportunity to provide input to other members of the educational team and hear reports concerning their child's progress at regular intervals. They also noted that the meetings helped them in establishing a pattern of home–school collaboration. One parent commented, "As a parent, I like the meetings because I get to hear how much Tyrell has improved. It is nice to hear the improvements that he made, and I need to hear that." Other members of Tyrell's team pointed out that the UPS meetings gave them a chance to celebrate his progress. The early childhood education teacher commented, "It has given us a chance to embrace Tyrell and the things that he has been learning."

Preschoolers Who Can Benefit From a UPS. Participants from each of the groups identified children at risk for academic and social problems (in addition to the preschoolers with significant disabilities) as prime candidates for the development of academic and social plans of support implemented by general education and special education staff in inclusive educational programs. They described these children as having difficulty accessing the preschool curriculum or adjusting to school or as having behavioral, social, communication, or emotional needs. These participants believed that the children who were at risk would benefit from curricular modifications and adaptations and social and behavioral supports developed and implemented through a general and special education collaborative teaming process.

Ideas for Other Preschoolers. Amy's team members commented that developing the UPS for her increased their awareness of the need to develop adaptations and supports to meet the individual needs of all the children. The special education teacher said, "Every time you are working with one specific child, it helps the entire group, because if you do that for Amy, you have to do that for Johnny, and Peter, and all children. And somehow you broaden your perspective of what needs to be done." Team members mentioned that specific supports they also used with other children included communication boards, interactive activities to facilitate social interaction, social facilitation strategies, and computer software (Tyrell's team).

Discussion

Three educational teams consisting of educators and parents collaboratively developed and implemented plans of

support for the educational, social, and communication and language development of three preschoolers who experienced significant disabilities. The collaborative teaming process provided a structure for parent–professional partnerships that placed parents in a central decision-making role and gave all team members the opportunity to share their expertise and experience. In addition, the collaborative teaming process promoted consistent implementation of the plans of support by all team members in both home and school settings.

Child performance outcomes—which were based on behavioral observations conducted across the school year and team members' perceptions of child progress that they associated with implementation of the support plan—documented changes in areas critical to full participation, development, and learning in preschool settings by the three children with disabilities. These areas included increased participation and engagement in large- and small-group educational activities and recess play, increased interactions with peers during class activities and at recess, increased initiated functional communication, and increased engagement in literacy activities. Educational and social supports that may have been associated with these positive child outcomes included specific educational modifications and adaptations, social and communication supports, facilitation of active participation by all team members, carryover of supports to the child's home, and peer partnerships.

STUDY 2

The second study extended the collaborative teaming model to four preschoolers with severe disabilities who had attended Preschool B during the first study. A major focus of this investigation was on the ecological validity of the UPS process when it was implemented by educational team members for multiple children who required more intensive levels of support; therefore, the focus of the investigation was not only on evaluating the impact of the collaboration process on child outcomes but also on the practicality and usefulness of a collaboration model built upon regularly scheduled team meetings for each of the children, implementation by team members of multiple support plans, and full parent participation.

METHOD

Setting and Participants

During the second year of involvement in research activity, Preschool B had 22 typical preschoolers and 6 children with disabilities who were supported by two general education and two special education instructional assistants. Three of the children—in addition to Amy, who had participated in the first study—required more intensive support to fully participate in and benefit from the preschool program. They thus became the focus of our second study. The three additional participants were Derrick, Joe, and Sonia.

Derrick was a 3-year-old boy of African American descent. A school district psychologist had diagnosed Derrick as having a significant intellectual disability. This was his first year in preschool. He primarily communicated with one- to two-word utterances and some speech imitation, as well as by occasionally touching adults for attention. Derrick could follow one-step directions but had difficulty attending to and completing tasks of low interest, and he was disruptive during both small- and large-group activities when he was not actively participating.

Joe was a 4-year-old boy of African American descent who had also been diagnosed with a significant intellectual disability. This was his first year in preschool. Joe had significant receptive and expressive language delays. There was also a reported significant discrepancy between his cognitive and language abilities. Joe primarily communicated with a few words, pointing, pulling, and grabbing (materials, adults, and peers). He had difficulty attending to and completing tasks in both large- and small-group settings and would leave a group if not supervised.

Sonia was a 5-year-old Latina–Asian American who had Down syndrome. This was her third year in preschool. Her visual and auditory abilities appeared to be in the normal range. She had delays in both gross-motor and fine-motor skills and needed some assistance to climb stairs and perform fine-motor tasks, such as hanging up her coat, zipping, and drawing. She communicated with gestures, vocalizations, and a few words ("Hi," "Bye," "No"). Sonia could follow simple one-step directions and participated in class routines when interested. She seldom initiated interactions with other persons except to greet a few select adults. Sonia often attempted to avoid participation in large- and small-group activities and needed adult assistance to participate successfully in class activities.

The early childhood and special education teachers continued to participate as core members of each child's educational team. One general education and two special education instructional assistants, who supported all four of the children, were also members of the team. One parent participated in each of his or her child's monthly team meetings. Unfortunately, the newly assigned speech–language therapist was not able to continue working after the first few weeks of our study and left before the support plans were developed, and this person was not replaced by the district for the remainder of the year. The loss of a team member with expertise in language development and augmentative and alternative communication affected to some extent the team's efforts to support children with significant speech and language delays.

Intervention: UPS Development and Implementation

The collaborative teaming process described in Study 1 was implemented during the intervention condition for this study. All aspects of the intervention were the same, including the structure of the UPS, the organization of the UPS meetings, and the development of support items for each of the four preschoolers.

Typically, UPS meetings focused on two of the preschoolers, with parents attending only that portion of the meeting that pertained to their child. Meetings were scheduled at times when parents were able to attend, and they received reminder calls about meeting dates and times 1 day to 2 days before each meeting.

Performance Measures and Data Collection Procedures

Design. Child outcomes were again investigated using (a) systematic observation of the levels of engagement and interaction patterns of the four preschoolers and (b) team interviews to elicit team members' perspectives on the educational growth and social participation of the children. Team interviews were conducted once during the baseline condition and again at the end of the study.

For Derrick, Joe, and Sonia, the observational measures were collected in the context of a multiple baseline design. For Amy, the data represented maintenance and further development of skills acquired during the intervention condition implemented in Study 1.

Observational Measures. The IES was used to measure interaction and engagement variables. Predicted behavioral outcomes for Study 2 included (a) decreases in the levels of nonengagement in ongoing classroom activities, (b) increases in interactions with peers that were neutral or positive in nature, and (c) increases in interactions initiated by the focal children. The variable "child alone or working one-on-one with an adult" that had been identified for Study 1 was no longer relevant for Study 2 because preschool staff members now arranged instructional and play contexts to ensure that children were not isolated or working only with an adult.

The data collection procedures remained the same. Each child was observed approximately once a week from October through March. Derrick and Sonia, along with a typical classmate, were observed on 1 day, and Joe and Amy, along with a typical classmate, were observed on the next day. Preschool curriculum and activities for the 2 days were the same. Nine 10-min observations (three for the two focal children and three for the classmate) were spaced across an approximately 2-hr and 15-min session.

During baseline and intervention conditions, a senior investigator once again joined the data collectors on an average of 33% of the sessions (31% for Derrick and Sonia, 35% for Joe and Amy). The level of agreement between the primary data collector and the independent observer concerning the presence of each of the interaction and engagement variables targeted by the IES was 96% (range = 92%–99%) For communicative partner, it was 96% (range = 88%–100%); for initiation of an interaction, it was 93% (range = 86%–98%); for acknowledgment of the initiation, it was 93% (range = 86%–100%); for communicative function, it was 93% (range = 81%–100%); for the quality of the interaction, it was 99% (range = 94%–100%); for the level of engagement, it was 95% (range = 70%–100%); and for child grouping patterns, it was 99% (range = 95%–100%)].

Team Interviews. Procedures for conducting team interviews to elicit team members' perceptions of changes in the educational progress, engagement levels, and interaction patterns of the focal children were the same as those implemented in Study 1. All interviews were led by the special education teacher, and all members of the team were encouraged to contribute their perspectives.

Intervention Fidelity: Item Implementation

The extent to which items on the UPS were implemented consistently and accurately was again evaluated using the rating scale on the UPS and the consensus process described in Study 1.

Ecological Validity of the UPS Process

As in Study 1, ecological validity was evaluated through a team interview conducted at the end of the study. The following interview questions were used in Study 2:

- In what ways has the teaming process (meetings, development and implementation of support plans) contributed to the progress that the children have made?
- How practical (difficult or easy) was the teaming process?
- What has been your role in participating in this collaborative teaming process?
- Do you have suggestions for changing the teaming process?

Data Analysis

Data analysis procedures for analyzing both behavioral measures and qualitative data were identical to those used in Study 1.

Results

Child Outcomes

Observation. The results of the analysis of observational data documented decreases in the levels of nonengagement in classroom activities for Derrick, Joe, and Sonia. Before intervention, the percentage of intervals in which they were not engaged was substantially higher than those of their peers (see Figure 3). Following implementation of the support plans, nonengagement levels decreased from an average of 19.8% (15%–22%), 27.2% (14%–40%), and 24.1% (2%–48%) for Derrick, Joe, and Sonia, respectively, to 8.1% (2%–33%), 4.5% (0%–17%), and 4% (0%–8%), respectively. During the final months of the study, nonengagement levels for each of the children approximated those of their peers. Amy's levels of nonengagement remained low and represented a substantial change from her baseline levels in Study 1.

The average levels of child-initiated interactions increased from 7.3% (3%–10%), 3.2% (2%–7%), and 2.6% (0%–8%) for Derrick, Joe, and Sonia, respectively, during the baseline condition to 10.8% (0%–23%), 10.6% (5%–17%), and 7% (0%–17%) respectively, during intervention; however, variability in the performance of Derrick and Sonia during the intervention condition makes it difficult to draw conclusions about intervention effects. In addition, a review of the levels of one-on-one interactions between Derrick, Joe, and Sonia and their classmates did not reveal significant changes in performance from baseline to intervention. Failure to demonstrate the impact of the intervention on these two communication-based dependent measures may be due to the unfortunate absence of a speech–language therapist from the educational team meetings for Study 2.

Amy maintained the gains that she made during the Study 1 intervention condition throughout Study 2. Her average level of nonengagement was 3.6% (0%–14%), and the average percentage of intervals of being alone or working one-on-one with an instructional assistant was 2.2% (0%–15%). The average percentages of intervals of interactions with other children and focus child-initiated interactions with the teacher or other preschoolers were 11.5% (2%–23%) and 11.6% (2%–18%), respectively.

Interview. Team members' perspectives regarding the educational and social progress of each of the four preschoolers that they associated with implementation of the UPS included (a) attending to and actively participating in large- and small-group activities, with decreased displays of disruptive and avoidance behaviors; (b) joining peers for play during recess; (c) increasing communicative competency in a variety of contexts and routines; and (d) enjoying books and literacy activities and developing a range of emerging literacy skills (see Note 3).

Intervention Fidelity: UPS Implementation

The team held six meetings for Derrick and Amy, five for Joe, and four for Sonia during the intervention condition. Implementation ratings for items on each child's UPS gathered at the first meeting following development of the support plan indicated that for Derrick, 91% of the supports were fully implemented; for Amy, 88% were fully implemented; for Joe, 92% were fully implemented; and for Sonia, 90% were fully implemented. Implementation ratings gathered at the last meeting indicate that 100% of the supports for Amy, Joe, and Sonia were fully implemented. For Derrick, 82% were fully implemented and 11% were implemented moderately well. These implementation ratings suggest a high degree of intervention fidelity throughout the intervention condition.

Ecological Validity: Participants' Perspectives

Contributions of Team Collaboration to Child Progress. Team members once again emphasized the key role that regularly scheduled team meetings with a built-in accountability system played in the progress of each of the four preschoolers. One team member commented, "We take the time, and at that time, the child is the most important thing in the world." Another member said, "If we didn't have these meetings, it would be very scattered; and we would say, 'Oh, yes, I'll try that,' but we never would."

Team members also emphasized that their experience of shared ownership in developing and implementing the plans of support increased their creativity and commitment. One member commented, "Everybody wants the children to succeed, and they are all giving 100% because they have ownership in the idea, and they want the children to learn." In addition, according to team members, team meetings gave them the opportunity to experience pride when their implementation of the plans was successful, and they all shared in the accomplishments of the children.

Team members talked about the opportunity to not only share their ideas and expertise and listen to the ideas of others but also reflect on their professional growth. The early childhood teacher said, "What I personally gained from this was to look at my teaching skills, to the personal growth that I received. It helped me be more observant about every detail, so I felt growth."

Team Member Roles. All team members viewed themselves and others as equals on the team. Parents described the importance of their role in bringing information about their child to the team and implementing the support plan at home. One parent commented, "Part of my role is to share what Amy is doing at home and bring

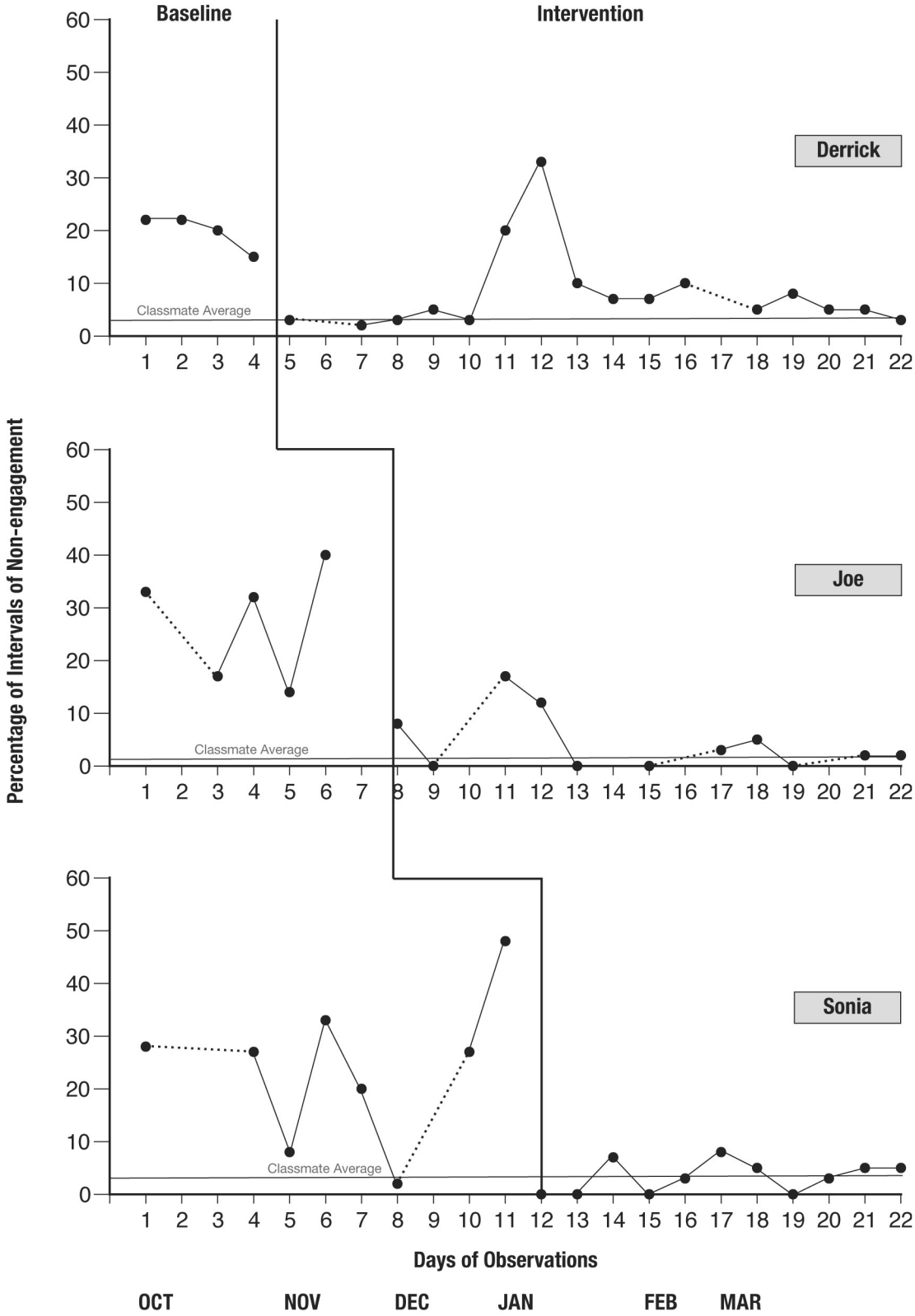

FIGURE 3. Study 2: Percentage of intervals of nonengagement.

it to the team . . . to kind of contribute as a 'tag team': what we are trying at home, what you are trying at school, and how we can build on these bridges."

Team members also described the ways in which they supported each other to implement the plan, with different members at times taking a dominant role by modeling implementation of support items, developing materials, and reminding other team members to implement items on the support plan.

Practicality of the Teaming Process. All team members agreed that the collaborative teaming process was practical and that it was not difficult to collaboratively develop support plans for a range of children with diverse needs. They had no suggestions for changing the teaming process but agreed that it was challenging for staff and parents to find time to meet each month with no district-wide system in place to support team meetings. All members agreed, however, that regularly scheduled team meetings were essential.

Discussion

Study 2 once again documented the effectiveness of the general and special educational collaborative teaming process, with full parent participation, in increasing the educational and social progress of four preschoolers with significant disabilities who were members of general education early childhood programs. In addition, the team interview conducted at the end of the study provided team members with perspectives on the practicality and usefulness of the collaboration model and the role that each member played in the process. Although team members agreed that regularly scheduled team meetings and collaborative, consistent implementation of the support items contributed substantially to the progress of each child and to the professional growth and effectiveness of educational staff who were members of the team, they also noted that resources for explicitly creating opportunities, incentives, and training for such collaboration were needed.

General Discussion

A general and special education collaborative process was used to develop and implement plans designed to support the participation of young children with significant disabilities in typical preschool activities, such as circle time, arts, preliteracy and premath centers, free play, and shared storybook reading. Each UPS included a listing of educational, communication, and social supports. Among the educational supports the teams used were adaptations to materials and activities, instructional modifications, and peer supports. Communication supports included low-tech communication boards such as choice-boards, communication dictionaries, and photo albums, as well as the provision of verbal modeling and scaffolding. Social supports included peer supports and interactive activities and games, such as social toys and cooperative play. As Odom and Bailey (2001) noted, learning and development are thought to occur through supported active participation in the social and educational activities and routines in the preschool classroom.

The documented effectiveness of the collaborative teaming process in increasing the educational progress and social participation of the preschoolers was dependent upon the quality and fidelity of the support items identified for each child by the educational team; in turn, the quality of the individual supports was increased by a process that provided a structure for melding and actualizing the expertise of teachers, specialists, and parents. The high level of consistent implementation of items on the support plan was facilitated by the process's built-in accountability system and the sense of ownership regarding the process and individual support items experienced by team members.

All the teams that participated in these studies included parents as equal and full partners. In fact, parent participation was instrumental to the development and implementation of the UPS. Parents provided crucial information and ideas about how to better support their children in the classroom, and that information was used throughout the UPS. The UPS process provided a format for the parent–professional partnership mandated by federal law and recommended by best practices. Indeed, family–professional partnership is a basic principle that has guided service delivery for young children with disabilities since the 1980s (Erwin, Soodak, Winton, & Turnbull, 2001). All of the families in our studies were members of non–Anglo-European cultures. The collaborative process afforded by the UPS provided the parents with focused, respectful, appropriate, and effective opportunities for shared decision-making (Hanson & Zercher, 2001; Kalyanpur & Harry, 1999). Meetings were held at times when parents were able to attend, and—as a result—parents attended all UPS meetings. As documented by Erwin et al. (2001), parent participation in inclusive preschool programs can be shaped by many factors, such as entry experiences, school climate, personal perspectives, and parent–professional relationships. According to these authors, these factors interact with one another and influence the nature and quality of parents' participation in their child's education. Meaningful participation occurs when the parent feels like a valued member of the education team. The fact that the UPS form included their ideas and suggestions gave parents a tangible way to see that their contributions were valued.

All team members involved in both studies expressed satisfaction with the collaborative process because it al-

lowed them to support one another and contribute to the development of educational and social supports for the focus preschoolers, regardless of the member's professional status. The contributions of parents, teachers, instructional assistants, and specialists were equally regarded and used in the development of supports. The UPS process empowered all team members to contribute their knowledge and ideas to the development of a support plan while providing an ongoing opportunity for making revisions to the plan if this was considered to be appropriate by the team. A strength of the UPS noted by most teams was that the plan was child centered and integrated supports based on classroom activities. The preschool curriculum became the context for intervention; educational and social participation became the ultimate goals. Another strength noted by the teams was that the teaming process and product reflected what the teams were doing to support the child's participation rather than dwelling on what was preventing the child from participating. The UPS allowed team members to shift from barriers to supports and to move forward in that direction.

Limitations

Despite the general benefits of collaborative teaming on child outcomes described in our studies and further documented in the literature, some considerations need to be addressed (Odom & Bailey, 2001). Although the results of the study indicate that the UPS process provided a practical structure to support collaborative practices, the financial resources for this effort were provided by a university research project. No program can be successful unless adequate resources are in place (Rafferty et al., 2003). To plan a quality inclusive program for children with disabilities, early childhood educators require the support of and collaboration with parents and specialized staff. A frequently identified major barrier is finding the time and resources necessary for establishing a positive and effective working relationship (Odom & Bailey, 2001). Building an inclusive community requires a commitment of resources to establish regularly scheduled team meetings. West and Idol (1990) outlined a number of strategies for increasing collaborative planning time, including (a) having the principal or other support staff teach a period a day to release teachers for planning meetings, (b) hiring a "floating" substitute teacher to release teachers (perhaps funded by the business community), and (c) altering the school day once a week to provide time for staff to collaborate without students.

A second consideration is the small sample size of both studies. This investigation restricted its focus to a total of four educational teams and six preschoolers; although it provides insight into the collaborative process, the ability to generalize beyond the small sample is limited.

Conclusions

Implementing inclusive education for preschoolers with significant disabilities requires a collaborative effort by members of educational teams who share a vision of the full social and educational participation of children with disabilities in their school community. Successful collaborative teaming, however, is dependent upon regularly scheduled opportunities for members of educational teams, including parents, to share their expertise, identify common goals, build plans of support, and determine responsibilities. Identifying and implementing structures for regularly scheduled planning time requires both administrative support and staff motivation (West & Idol, 1990). Further research is needed to document the links between effective implementation of models of collaborative teaming and positive outcomes for preschoolers. ◆

AUTHORS' NOTES

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2. The authors would like to thank the children and educational team members who participated in this study.

NOTES

1. A copy of the IES is available from the first author.
2. A similar analysis of team members' perceptions of the progress the children made in the areas of preliteracy and premath is available from the first author upon request.
3. A table presenting emergent themes representing the perceptions of team members regarding the progess of each of the children within the categories of participation in large- and small-group activities; social interaction with peers; and prereading, writing, and math is available from the first author upon request.

REFERENCES

Beckman, P. J., Barnwell, D., Horn, E., Hanson, M. J., Gutierrez, S., & Lieber, J. (1998). Communities, families and inclusion. *Early Childhood Research Quarterly, 13,* 125–150.

Erwin, E. J., Soodak, L. C., Winton, P. J., & Turnbull, A. (2001). "I wish it wouldn't all depend on me": Research on families and early childhood inclusion. In M. J. Guralnick (Ed.), *Early childhood inclusion: Focus on change* (pp. 127–158). Baltimore: Brookes.

Gaylord-Ross, R. J. (1979). Mental retardation research, ecological validity, and the delivery of longitudinal education programs. *The Journal of Special Education, 13,* 69–80.

Giangreco, M. F. (2000). Related services research for students with low incidence disabilities: Implications for speech-language pathologists in inclusive classrooms. *Language, Speech and Hearing Services in the Schools, 31,* 230–239.

Giangreco, M. F., Cloninger, C. J., Dennis, R. E., & Edelman, S. W. (1994). Problem–solving methods to facilitate inclusive education. In J. S. Thousand, R. A. Villa, & A. Nevin (Eds.), *Creativity and collaborative learning: A practical guide to empowering students and teachers* (pp. 321–346). Baltimore: Brookes.

Guralnick, M. J. (Ed.). (2001). *Early childhood inclusion: Focus on change.* Baltimore: Brookes.

Hanson, M. J., Gutierrez, S., Morgan, M., Brennan, E. L., & Zercher, C. (1997). Language, culture, and disability: Interacting influences on preschool inclusion. *Topics in Early Childhood Special Education, 17,* 307–336.

Hanson, M. J., Wolfberg, P., Zercher, C., Morgan, M., Gutierrez, M., Barnwell, D., et al. (1998). The culture of inclusion: Recognizing diversity at multiple levels. *Early Childhood Research Quarterly, 13,* 185–209.

Hanson, M. J., & Zercher, C. (2001). The impact of cultural and linguistic diversity on inclusive preschool environments. In M. J. Guralnick (Ed.), *Early childhood inclusion: Focus on change* (pp. 413–432). Baltimore: Brookes.

Hunt, P., Alwell, M., Farron-Davis, F., & Goetz, L. (1996). Creating socially supportive environments for fully included students who experience multiple disabilities. *Journal of the Association for Persons with Severe Handicaps, 21*(2), 53–71.

Hunt, P., Doering, K., Hirose-Hatae, A., Maier, J., & Goetz, L. (2001). Across-program collaboration to support students with and without disabilities in a general education classroom. *Journal for the Association for Persons with Severe Handicaps, 26,* 240–256.

Hunt, P., Farron-Davis, F., Wrenn, M., Hirose-Hatae, A., & Goetz, L. (1997). Promoting interactive partnerships in inclusive educational settings. *Journal of The Association for Persons with Severe Handicaps, 22,* 127–137.

Hunt, P., Soto, G., Maier, J., & Doering, K. (2003). Collaborative teaming to support students at risk and students with severe disabilities in general education classrooms. *Exceptional Children, 69*(3), 315–332.

Hunt, P., Soto, G., Maier, J., Müller, E., & Goetz, L. (2002). Collaborative teaming to support students with AAC needs in general education classrooms. *Augmentative and Alternative Communication, 18,* 20–35.

Janney, R. E., & Snell, M. E. (2000). *Teachers' guides to inclusive practices: Modifying schoolwork*. Baltimore: Brookes.

Kalyanpur, M., & Harry, B. (1999). *Culture in special education: Building reciprocal family–professional relationships*. Baltimore: Brookes.

Kazdin, A. (1982). *Single-case research designs*. New York: Oxford University Press.

Krueger, R. A. (1998). *Analyzing & reporting focus group results*. Thousand Oaks, CA: Sage.

LeLaurin, K., & Wolery, M. (1992). Research standards in early intervention: Defining, describing and measuring the independent variable. *Journal of Early Intervention, 15,* 275–287.

Lieber, J., Beckman, P. J., Hanson, M. J., Janko, S., Marquart, J. M., Horn, E., et al. (1997). The impact of changing roles on the relationships between professionals in inclusive programs for young children. *Early Education and Development, 8,* 67–82.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Beverly Hills, CA: Sage.

Merritt, D. D., & Culatta, B. (1998). *Language intervention in the classroom.* San Diego, CA: Singular.

Morgan, D. L. (1993). *Successful focus groups: Advancing the state of the art*. Thousand Oaks, CA: Sage.

Odom, S. L. (Ed.). (2002). *Widening the circle: Including children with disabilities in preschool programs*. New York: Teachers College Press.

Odom, S. L., & Bailey, D. (2001). Inclusive preschool programs: Classroom ecology and child outcomes. In M. J. Guralnick (Ed.), *Early childhood inclusion: Focus on change* (pp. 253–276). Baltimore: Brookes.

Odom, S., Horn, E., Marquart, J. M., Hanson, M. J., Wolfberg, P., Beckman, P., et al. (1999). On the forms of inclusion: Organizational context and individualized service models. *Journal of Early Intervention, 22,* 185–199.

Odom, S., Peck, C. A., Hanson, M. J., Beckman, P. J., Kaiser, A. P., Lieber, J., et al. (1996). Inclusion at the preschool level: An ecological analysis. *Social Policy Report, 10*(2-3), 18–30.

Rafferty, Y., Piscitelli, V., & Boettcher, C. (2003). The impact of inclusion on language development and social competence among preschoolers with disabilities. *Exceptional Children, 69,* 467–479.

Salisbury, C. L., Evans, I. M., & Palombaro, M. M. (1997). Collaborative problem-solving to promote the inclusion of young children with significant disabilities in primary grades. *Exceptional Children, 63,* 195–209.

Siegel, B. (1996). Is the emperor wearing clothes? Social policy and the empirical support for full inclusion of children with disabilities in the preschool and early elementary grades. *Social Policy Report, 10*(2-3), 2–17.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.

West, J. F., & Idol, L. (1990). Collaborative consultation in the education of mildly handicapped and at-risk students. *Remedial and Special Education, 11,* 22–31.