INNOVATIVE PRACTICES

Promoting Inclusion by Improving Child Care Quality in Inner-City Programs

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An innovative training program to improve the quality of child care for all children including those with disabilities was developed, implemented, and evaluated over a 5-year time span with child caregivers working primarily in inner city child care programs. A total of 283 directors and child caregivers participated in 1 of 15 courses that used the infant-toddler (n = 8) or preschool (n = 7) curricula of the training program. Each training curricula presented age-specific content in didactic class sessions scheduled across a 3- to 4-month time period. These class sessions were combined with three on-site consultation visits and an out-of-class assignment. Following participation in the training program, quality of care increased in infant-toddler and preschool classrooms. Before and after training, caregivers' interactions with children were characterized as neither punitive nor detached but with only moderate levels of positive interaction and permissiveness.

Recent studies have documented the quality of child care nationally, reporting adequate quality (i.e., average mean scores ranging from 4.0 to 4.5) using early childhood environment rating scales (Harms & Clifford, 1980, 1990; Harms, Clifford & Cryer, 1990) as a measure of program quality (Cost, Quality, and Child Outcomes Study Team, 1999; Fiene et al., 2002; Jaeger & Funk, 2001; Love, Schochet, & Meckstrom, 1996). Additional studies report that children who live in poverty neighborhoods are more likely to receive poorer quality care than children from middle- and upper-income communities (Barnett & Boocock, 1998: Campbell & Milbourne, 2001, 2004; Duncan & Brooks-Gunn, 1997; 2000; Stipek, Daniels, Galuzzo, & Milburn, 1992). There also is emerging evidence that higher quality care is provided in classrooms where children with disabilities are included (Hestenes, Cassidy, & Hedge, 2004). The overall poor quality of typical child care pro-grams has been identified as a major detriment to achieving inclusive program options for young children with disabilities (Buysse, Wesley, & Able-Boone, 2001; Guralnick, 2001).

Other recent studies have linked quality child care to children's social-emotional and academic readiness for kindergarten and success in elementary grades (Bryant et al., 2003; Childs & Fantuzzo, 2002; Kagan & Yazejian, 2001). For example, young children who were enrolled in poor quality child care prior to school scored lower in academic subjects at second grade, evidenced more behavior problems, and were more likely to be receiving special education services than young children who received high quality care (Peisner-Feinberg et al., 2001). Children who received quality child care through a city-wide early childhood initiative were less likely to be identified for special education and more likely to demonstrate competent school readiness abilities than children who had not received

quality care (Bagnato, 2002; Bagnato, Suen, Brickley, & Smith-Jones, 2002).

Professional staff development has been identified as one strategy for improving the quality of child care. Relationships between the educational experiences of staff and quality of care have been reported (Campbell, Appelbaum, Martinson, & Martin, 2000; Vandell & Wolf, 2000) and have resulted in consistent recommendations to (a) increase the number of childcare centers that are accredited by organizations such as the National Association for the Education of Young Children (NAEYC) and (b) improve training opportunities for staff. Lack of staff training has been identified as a barrier to quality inclusive child care (Buysse, Wesley, and Keyes, 1998). Few studies have reported effects of professional development activities on child care quality. In one study, child care quality in family care homes improved when providers participated in a 9-month training program that combined class sessions with unspecified amounts of on-site consultation (Kontos, Howes, & Galinsky, 1996). Another study reported improved quality of care in classrooms where child caregivers were participants in the Teacher Education and Compensation Helps (TEACH) program (Cassidy, Buell, Pugh-Hoese, & Russell, 1995). Other professional development approaches include on-site consultation or mentoring as a stand-alone strategy without being tied to didactic classes. For example, the impact on the quality of urban child care programs was negligible when an average of 12 months of bi-monthly mentoring/on-site consultation visits were provided (Shlay et al., 2002). When 10 to 14 consultation visits were provided to implement an individually designed technical assistance plan that targeted low-scoring environment rating scale subtest scores, changes in classroom quality were noted for infant-toddler ($n = 6$), preschool ($n = 14$), and family day care home ($n = 4$) settings (Palsha & Wesley, 1998).

Increasing the quality of child care is challenging but potentially more complex in inner city programs where recommended quality improvement strategies might not be fully successful due to the context in which these programs operate. For example, accreditation, while an excellent standard, is not easily attainable for inner city child care programs due to finances, time, and staff resource limitations (Shlay et al., 2002). The marginal funding base of many inner city programs frequently results in hiring staff with less formal education and at lower wages than is possible for programs with greater financial resources. The level of compensation (i.e., wages) paid to staff might, in turn, not be sufficient to support pursuit of formal education degrees, and inner-city child care staff might not view formal education as a possibility even when financial resources are made available (Strober, Gerlach-Downie, & Yeager, 1995). Inner-city child care programs also might have limited physical resources (Campbell & Milbourne, 2001, 2004). Few child care programs in inner-city neighborhoods are located in facilities that were built exclusively as child care environments. Typically, they share facilities of churches, schools, community centers, or other existing facilities. Few have outside playgrounds or sufficient amounts of equipment, materials, or supplies. These physical settings provide additional challenges to child care staff who often do not have optimal environments for providing child care. Additionally, inner-city child care staff and the children for whom they provide care are likely to be members of culturally diverse groups. The practices used by staff and the values and beliefs held about children are likely to reflect cultural backgrounds and experiences that might be incompatible with mainstream views (Ferri, 1992).

PHILADELPHIA INCLUSION NETWORK TRAINING PROGRAM

The Philadelphia Inclusion Network (PIN) is a training program that has been offered for child care providers across the country to help them include infants and young children with disabilities (e.g., Bruder, 1993, 1998; Garland & Osbourne, 2000; Harper-Whalen & Morris, 2000; Odom, 2002; Palsha & Wesley, 1998; Wesley, Dennis, & Tyndall, 1998). The PIN training program was developed to train child

caregivers to provide quality care for all children including those with special needs and disabilities. Innovative features of the program include (a) didactic class sessions combined with on-site consultation to facilitate application of material being learned, (b) written training curricula that allow for emphasis on specific age groups, and (c) use of trained professionals from a variety of disciplines and fields to provide instruction and consultation. PIN was developed and evaluated across a 5-year time span from 1997 through 2001 with caregivers who worked primarily in inner-city child care programs with funding from both federal special education demonstration and state child care quality initiative funds. The program is approved by the state childcare quality assurance system, a state-wide training and technical assistance program that delivers training for child caregivers via certified instructors and approved training curricula, and continues to be offered through this system.

The program is outlined in a training manual for instructors (Campbell, Milbourne, & Silverman, 2002a) with an accompanying volume that provides reproducible participant handouts and materials[1] (Campbell, Milbourne, & Silverman, 2002b). The instructor manual includes information about how to recruit participants, organize and set up the training program, and deliver the training curricula. PIN uses coordinators to complete these functions each time the training program is offered. The course coordinator identifies instructors and consultants from a pool of trained individuals who work on an as-needed basis to facilitate specific class sessions or provide on-site consultation in the child care settings. These individuals are professionals with backgrounds in early intervention (e.g., early childhood, early childhood special education, occupational, physical, or speech therapy), who have received training in PIN.

PIN Curricula
PIN is made up of two different aged-based training curricula (i.e., First Beginnings and Preschool). Each includes three on-site consultation visits and completion of an out-of-class project, but differ in the number of hours of class sessions and in the content taught in the in-class training sessions. The information needed for each class session is packaged as a self-contained module. Each module focuses on a particular content area and provides information about quality practices. An emphasis on disability is infused into the module by representing disability from a strengths-based perspective as a type of diversity.

Class sessions. The First Beginnings curricula for infant-toddler caregivers is offered in five, 3-hour sessions (15 hours total) on Saturday mornings. The Preschool courses include 10 sessions offered for 2.5 hours (25 hours total) either in the early evening, during children's nap time, or on Saturday mornings. Sessions are scheduled over a 3- to 4-month time span. The class sessions for each curricula are selected from 13 training modules (see Table 1), including three core modules used in both the First Beginnings and Preschool curricula. First Beginnings includes two additional modules (*Brain Development, Relationships with Infants and Toddlers*), while the seven additional topical modules used in the Preschool program are selected from the eight possible modules listed in Table 1. Training coordinators make decisions about which modules to include, gathering input from center directors. For example, when participants in a training course were caring for children with diagnoses of pervasive developmental disorder (PDD) or autism, this module was included as one of the seven modules.

Content for each module was based on a review of the literature pertinent to each topic to identify key concepts and successful strategies for applying these concepts in everyday practice. Each content module includes an instructor guide and an accompanying set of participant materials. The instructor guide outlines objectives, provides background content information, lists materials needed to teach the module, includes detailed instructions for each of the learning activities, and lists related references and resources. Accompanying participant materials include objectives, handouts,

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[1] PIN training manual can be downloaded from http://jeffline.jefferson.edu/cfsrp/products/materials-pi-1.html

Table 1
PIN Training Modules

Module	First Beginnings	Preschool
Core training modules		
Promoting development & learning	×	×
Resources and relationships	×	×
Welcoming all children	×	×
Additional modules		
Adaptations and accommodations		×
ADHD		×
Autism		×
Brain development: Implications for caregivers	×	
Collaborative teaming		×
Considerations for curriculum planning		×
Individualizing for families		×
Promoting full participation		×
Promoting social competence		×
Relationships with infants and toddlers	×	

written materials needed for participation in learning activities, and related readings.

Information in each content area is presented through a variety of instructional means and with a focus on training activities that require a high degree of participant participation. Several learning activities require participants to apply information they are learning to a *real-life* situation. For example, in the *Accommodations and Adaptations* module, participants work together in groups to learn about making adaptations by planning a holiday meal where each person in the group has different needs (e.g., unable to chew, lactose-intolerant, needs assistance to eat) and where the financial budget for the meal ranges from very limited to extensive. Participants discuss how they approached the meal planning task and what accommodations were made for individual differences and finances. In other modules, case study methods are used. Participants are given *real-life* stories and asked to discuss what approaches would be used, and why, to address the issues presented in the story. Hands-on experiences, such as opportunities to adapt actual toys and instructional materials or develop lesson plans, also are included. Methods for teaching session content were designed to incorporate principles of adult learning and provide par-

ticipants with in-class practice experiences that could be carried easily into their work settings.

On-site consultation visits. Three on-site consultation visits were provided as part of each curricula over the 3- to 4-month time span training sessions were provided. Consultants were drawn from a pool of trained professionals and hired to provide consultation to specifically assigned classrooms. The purpose of the on-site visits was to promote adoption of class-presented content in participants' work settings (Campbell & Milbourne, 2005). The consultation approach included a plan for addressing two identified outcomes. During the initial on-site visit, the consultant assigned to a particular infant-toddler or preschool classroom met with child care staff to develop a written consultation plan jointly that targeted two outcomes the child care provider(s) wanted to address. The plan identified (a) consultation strategies to be used, (b) steps to be completed, (c) persons responsible and dates for completion, and (d) criteria for knowing that the outcomes had been accomplished. Possible consultation strategies included modeling, providing resources, discussing challenges, brainstorming, rearranging rooms, modifying teaching strategies, making written plans, or acquiring materials. The second and

third visits were used to implement the plan and, using the criteria outlined on the consultation plan, determine the extent to which outcomes were met. In addition, each consultant maintained a visit log and recorded who was present, how long the visit lasted, focus of the visit, overall tone of the classroom, and degree of interest and staff response to the visit.

Out-of-class child portfolio project. A child-portfolio activity was completed by participants outside of class (Campbell, Milbourne, & Silverman, 2000). This activity was designed with two purposes: (a) encourage child caregivers to interact with and form collaborative relationships with families; and (b) provide an activity to help caregivers construct representations of children that are based on children's strengths rather than their needs, deficits, or inabilities. During the second class session, participants were asked to identify a child with special needs or disabilities and write a one-page story about the child as an initial part of their portfolio projects. Each participant was provided with a disposable camera, worksheets, and a template for putting together the child portfolio. Worksheets required child caregivers to interact with families to identify children's strengths such as what the child likes to do, who the child spends time with outside the child care program, what the child does best, or new things the child is learning. Participants completed the portfolio by taking photographs of the child in various situations and pasting them into the portfolio template. During the final class meeting, participants shared their portfolios with each other in a poster format and wrote a second story about the same child so that their pre- and post-project representations of the child could be compared.

EVALUATION OF THE PIN TRAINING PROGRAM

A total of 337 child caregivers, directors, or other child care staff participated in First Beginnings ($n = 178$; 53%); or Preschool ($n = 159$; 47%) training curricula during the development of the training program. Of these participants, 283 (84%) completed all pro-

gram requirements and received state child care continuing education credits and a $100 stipend. Participants completed all requirements if they (a) missed no more than one class session and completed a make-up assignment for the missed session, (b) received three consultation visits, and (c) completed the out-of-class assignment. A total of 54 (First Beginnings, $n = 24$; Preschool, $n = 30$) participants dropped out before completing all program requirements.

Recruitment

Participants were recruited using one of three approaches. Training was not advertised as having a sole focus on children with disabilities. Rather, the focus was on improving the quality of care for all children including children with disabilities. Lists of state licensed day care programs within specifically selected zip codes were obtained and invitations to attend a training meeting were mailed to child care directors, followed by phone calls and meeting reminders. At the meeting, training information was distributed and input was solicited from directors who, in turn, recruited staff. A second recruitment approach was used with companies or organizations (e.g., community groups such as the YWCA) with multiple centers and sufficient numbers of staff (e.g., 20–25) for training. The PIN training coordinator met with the program administration and center directors who, in turn, recruited staff. The third strategy involved collaboration with the local Child Care Information Services Resource and Referral (R & R) agencies. These publicly financed resource and referral agencies have been established in all states to provide information to families who are seeking child care. Outreach coordinators with on-going contact with child care programs used R&R child care program lists to mail information about the training program. Interested caregivers registered directly with PIN.

Participants

Participants completed the training program in one of 15 courses that used the infant-toddler ($n = 8$) or preschool ($n = 7$) curricula and

Participant Background Information by Group

Characteristic	Total (*N* = 228)	First Beginnings (*n* = 142)	Preschool (*n* = 86)
	%		
Female	98	98	98
Ethnic background			
African-American	72	89	42
Caucasian	23	4	54
Latino	5	5	5
Highest educational level			
< High school	3	1	7
High school or GED	53	76	15
Associate's degree	11	12	10
Bachelor's degree	22	9	43
CDA credential	6	4	7
Teacher certificate	12	18	5
Reporting children with disabilities in their rooms	8	0	8
Reporting early intervention services provided to children in their rooms	5	0	5
Family member with disability	25	20	31
Attended school with children with disabilities	37	34	43
Agreeing with statement: All children can be included in child care	76	84	62
	M years		
Age	39.86 (16–82)	40.46 (19–82)	38.82 (18–69)
Experience in child care	10.57 (.1–30)	9.60 (.1–30)	12.07 (.8–30)
Experience in current position	5.16 (.1–26)	3.86 (.1–20)	6.91 (.3–26)

Note. Teacher certificate = percent reported is the percent of individuals holding bachelor's degrees and a teaching certificate; CDA = Child development associate credential; ( ) = range.

included directors and other nonteaching child care staff, teachers, and classroom assistants. Classroom assistants were encouraged to enroll in the training program when the primary (i.e., lead) caregiver also was enrolled. Demographic forms were completed by 228 (81%) of the 283 participants who completed requirements. Characteristics are shown in Table 2 for the total group and for participants who completed each of the training curricula. The majority of participants in both training programs were females of African-American or Latino backgrounds, reflecting typical racial-ethnic patterns for northeastern United States inner-city areas. The total group of PIN participants were middle age (*M* = 40 years), child care staff who worked in child care for

an average of 10 years. These participants were less educated, as a whole, than typically described child care providers (e.g., Morgan, 2003): 11% had associate's degrees, 22% had bachelor's degrees (12% of those with degrees had teaching certification). The highest level of education for a majority (53%) of the group was high school (or an equivalent GED). A higher percentage of the Preschool participants had associate's or bachelor's degrees. The Preschool group included a higher percentage of participants who reported their racial-ethnic background as Caucasian. Participants were asked to report the number of children with disabilities in their classrooms and whether these children received early intervention (EI) services. Children with disabili-

ties were reported only by the Preschool participants.

Three questions about individuals with disabilities were included on the demographic form. Approximately one-third of both groups reported having a family member with a disability and having gone to school with children with disabilities. A higher percentage of First Beginnings participants agreed that all children with disabilities could be included in child care.

Classroom Observation Instruments

To determine the effects of training on the quality of child care environments, the infant-toddler rooms or preschool classrooms of participants were observed in the month before and after each training course. The initial and post-training observations provided information about the quality of the classroom environment and the relationships that individual caregivers had with infants and children. The widely used Early Childhood Environment Rating Scale (ECERS; Harms & Clifford, 1980) and the Infant Toddler Environment Rating Scale (ITERS; Harms, Clifford, & Cryer, 1990) were used to measure classroom quality. For each scale, observers spent 2 to 3 hours observing and rating the classroom environment on a number of dimensions or subscales including areas such as space and furnishings, learning activities, and social development.

A total score for each subscale results from scoring individual items on a scale of 1 to 7 where 1 = *inadequate* (i.e., does not meet children's needs), 3 = *adequate,* 5 = *good,* and 7 = *excellent or highly personalized care.* Score values between these markers (e.g., 2, 4, 6) represent midpoints in the quality ratings. Because even small changes in total mean scores of the environment rating scales can result in statistically significant differences, we used an approach where scores were further analyzed to identify observable change (Kontos, Howes, & Galinsky, 1996). In this approach, a setting was judged as having made observable change if the post-test score resulted in a change in category (e.g., rated initially as *inadequate,* rated on follow-up as

adequate) or if the program was rated initially as *good* and the total mean score increased by one point (but the category remained *good*). We also identified the number of classrooms where mean score differences were equal to or exceeded .50 of a point, another measure of meaningful change used in other studies (e.g., Cassidy et al., 1995).

Child-caregiver interactions for participants in the First Beginnings curricula were rated using the Caregiver Interaction Scale (Arnett, 1989), another widely used measure in child care studies. This 26-item scale rates interactions in four areas: positive interactions; permissiveness; punitiveness; and detachment. Each item is rated on a four-point scale where 1 = *not at all,* 2 = *somewhat,* 3 = *quite a bit,* and 4 = *most of the time.* Items are regrouped into the four areas with mean scores calculated for each factor.

Session Facilitators, Consultants, and Observers

Session facilitators for the 15 training courses on which the evaluation is based were drawn from a pool of 20 individuals who represented a variety of discipline backgrounds, had been approved through the state's Trainer Quality Assurance System as TQAS-certified, and were trained to deliver the content of one or more PIN training content modules. These individuals were employed to facilitate assigned sessions. Fourteen facilitators were used in the First Beginnings curricula. These included 1 parent, 3 early childhood/special education teachers, 6 occupational therapists, and 4 early intervention specialists. Seventeen class facilitators were used in the Preschool curricula. Discipline backgrounds included 2 parents, 5 early childhood/special education teachers, 4 occupational therapists, and 6 early intervention specialists.

Observers and on-site consultants were selected from a pool of 14 individuals who were trained to conduct observations and to provide consultation. The pool included occupational therapists ($n = 10$) and early childhood/special education teachers ($n = 4$) who were employed to conduct assigned classroom observations or provide consultation to assigned

classrooms. These consultants were assigned separately for the pre- and post-training observations so that the same person who completed the pre-training observation did not complete the post-training observation on the same classroom, nor did the post-training observer have knowledge of the pretraining scores. Consultants were assigned to classrooms so that an individual who served as a consultant for a particular classroom did not conduct the observations for that room. An individual consultant provided on-site visits to no more than six classrooms at a time. Prior to each training course, the individuals who were assigned as consultants attended a 3-hour training meeting during which the completion of recording forms and the process for providing consultation were reviewed. Ways to use a variety of strategies during the consultation process such as providing resources or modeling practices also were discussed during this meeting.

Evaluation Procedures

Participant classroom settings were observed in the month before and after the delivery of the training program using the appropriate environment rating scale. All 14 individuals who served as observers were trained to reliability with the ECERS and ITERS prior to conducting any observations. This was achieved by using the videotapes produced for this purpose (Harms & Cryer, 1991; Harms, Fleming, Cryer, 1992), followed by each observer conducting on-site observations with a trained rater for a minimum of three observations or until inter-rater agreement of greater than 85% on each subscale was achieved. Inter-rater agreement was calculated using a system of agreements divided by agreements + disagreements and multiplied by 100. Two staff people served as the trained raters against which agreement was established with other observer-raters prior to each of the 15 PIN training courses.

Attempts were made to observe the child care setting of all participants; however, pretraining and post-training measures were not obtained for the classrooms of all participants. Post-training measures were not obtained for

a number of reasons including mobility of the caregivers, noncompletion of the course by a lead teacher but completion by a classroom assistant, or scheduling issues such as absence of the participant from the work setting during three or more scheduled post-observation visits. When caregivers completed the course requirements but were no longer working in the same center or with the same age group of children (e.g., infant-toddler or preschool), post-training observations were not completed since the classroom setting of the participant was significantly different than the environment where pretraining observations had been completed. Similarly, if a classroom lead teacher did not complete course requirements, post-test measures were not obtained in classrooms where only the classroom aide completed all course requirements.

EVALUATION RESULTS

The extent to which completion of a PIN training program curricula impacted child care quality was determined by comparing pre- and post-training scores on the environment rating scales. Caregiver Interaction Scale scores also were compared for those participants in the First Beginnings infant-toddler curricula.

Infant-Toddler Child Care Quality

Eight courses of First Beginnings were provided during the 2-year span the training curricula were developed. A total of 154 participants from 70 classrooms in 45 centers completed all requirements. Of these, 145 provided care for infants and toddlers. Nine were program directors who did not work in a classroom and were not observed with the ITERS. Of the 145 caregivers who completed requirements, 100 were teachers and 45 worked as classroom assistants with the 100 teachers. Both pre- and post-training ITERS scores were obtained in 70 (80%) classrooms in 35 centers that employed 116 (80%) of the 145 caregiver staff. Post-training observations were not completed in 18 classrooms with 29 caregivers for reasons including the caregiver leaving the center where they were working when they began the course, being reassigned

Table 3
Pre- and Post-Training Mean Subscale Scores for the ITERS and ECERS

	First Beginnings group n = 70 infant-toddler rooms n = 116 staff		Preschool group n = 71 preschool classrooms n = 98 staff	
	Pretraining	Post-Training	Pretraining	Post-Training
Adult needs	3.47 (1.25–5.25)	3.47 (1.5–5.25)	3.50 (1.5–6.5)	3.55 (1.5–6.50)
Furnishings	3.05 (1.4–5.8)	3.33 (1.6–6.20)	3.28 (1.0–7.0)	3.45 (1.0–7.0)
Personal care	3.33 (1.4–5.78)	3.63 (1.75–6.33)	3.25 (1.8–7.0)	3.50 (1.0–5.5)
Listening & talking	3.41 (1.5–7.0)	3.82 (1.0–7.0)		
Language & reasoning			2.90 (1.0–7.0)	3.13 (1.0–6.50)
Learning activities	2.66 (1.38–5.0)	2.99 (1.38–5.50)		
Creative activities			2.98 (1.0–6.14)	3.20 (1.0–6.14)
Interaction	3.65 (1.0–6.0)	4.06 (1.33–7.0)		
Social development			2.83 (1.0–6.67)	3.03 (1.0–5.67)
Program structure	3.67 (1.5–7.0)	3.98 (1.5–7.0)		
Motor skills			3.44 (1.4–5.0)	3.65 (1.8–6.33)

Note. ITERS = Infant/Toddler Environment Rating Scale; ECERS = Early Childhood Environment Rating Scale; ( ) = range.

to another age group within the same center, or absent for three scheduled observations. As part of the environmental rating scale observations, observers identified children with disabilities in 19 (27%) of the classrooms. The number of children with disabilities per infant-toddler room ranged from one (17%) to four (3%).

Differences between pre- and post-training total ITERS mean scores in the 70 classrooms were statistically significant (pretraining $M = 3.20$; post-training $M = 3.48$; $t(69) = -4.309$, $p = .001$). Effect size was calculated at $d = .52$ showing medium effects. Mean scores and ranges before and after training for each of the seven subscales are shown in Table 3. Subscales with the largest differences between pre-and post-training mean scores include listening and talking and interaction. There were no changes on the adult needs subscale. As illustrated in Figure 1, the number of classrooms rated as inadequate before training ($n = 27$; 37%) was reduced following training ($n = 20$; 29%). The number of classrooms rated as adequate increased from 41 (59%) to 46 (66%) and as good from 2 (3%) to 4 (6%). Observable change was noted in 15 (22%) of the classrooms where differences in the post-test mean score resulted in a change in quality category rating. A total of 21 (30%) of the infant-toddler room mean total scores increased by .50 or greater between pre- and post-training observations.

Pre- and post-training observations with the Caregiver Interaction Scale were available for 100 of the 145 (69%) caregivers who completed the First Beginnings Infant-Toddler curricula. There were no noteworthy differences before and after-training on caregiver-child interaction scores. Items related to punitiveness (M pretraining score = 1.48; M post-training score = 1.49) and to detachment (M pretraining score = 1.49; M post-training score = 1.52) reflected scoring of *not at all true,* indicating that caregivers were neither punitive nor detached in their interactions with children. Mean scores in positive interaction decreased slightly from 2.44 (pretraining) to 2.18 (post-training) but remained stable in permissiveness (M pretraining score = 2.10; M post-training score = 2.05). These scores reflected a rating of *somewhat true* indicating that while caregivers were neither punitive nor detached, they did not interact positively with children or demonstrate permissiveness consistently.

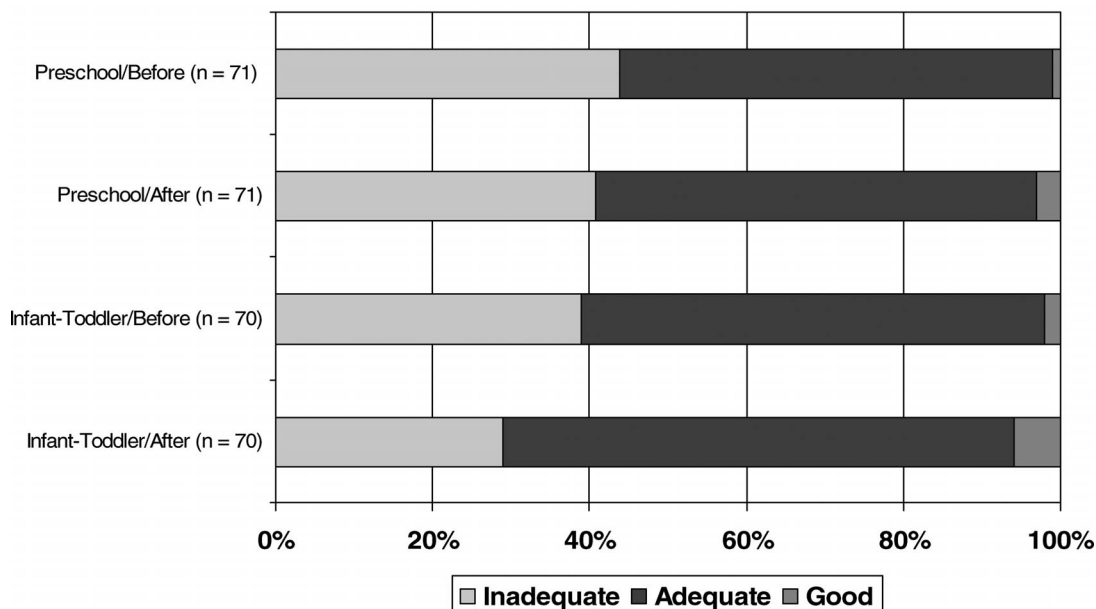Before and After Training Quality Ratings of Observed Settings

Figure 1.
Percent of programs rated on environment rating scales as inadequate (M = < 2.99), adequate (M = 3.00 to 4.99), and good (M = 5.00 to 7.00) prior to and following completion of a PIN training curricula by child caregivers.

Preschool Child Care Quality

A total of 129 staff in 29 different child care programs completed all requirements in one of seven course sessions that used the PIN Preschool curriculum. Of these, 108 provided child care. An additional 21 participants were program directors or other noncaregiver staff who did not work in a classroom and were not observed with the ECERS. The 108 caregivers worked in 81 classrooms in 27 child care centers. At the time of the pretraining observation, observers identified children with disabilities in 23 (32%) of the classrooms. The number of children with disabilities per classroom ranged from one (20%) to seven (4%).

Both pre- and post-training ECERS scores were available for 71 (92%) classrooms with 98 caregiver staff (71 teachers; 27 classroom assistants). Pretraining observations were missed in four classrooms where the four

teachers enrolled in the training program on the initial class day. Post-training observations were not completed in six classrooms for reasons including the caregiver leaving the center where they were employed at the beginning of the course, being reassigned to care for a different age group within the same center, or absent for three scheduled observations. Differences between pre- and post-training total ECERS mean scores in the 71 classrooms were statistically significant (pretraining $M = 3.15$; post-training $M = 3.34$; $t(70) = -4.149$, $p = .001$). Effect size was calculated at $d = .49$ which falls in the range of medium effects. The pre- and post-training mean scores for each of the ECERS subscales are shown in Table 3. Three of the seven subscale areas were scored as inadequate prior to training and as adequate following training. Figure 1 shows the observable differences between

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pre- and post-training scores that occurred in four (6%) of the classrooms. The number of classrooms rated as inadequate before training (*n* = 31; 44%) decreased slightly following training (*n* = 29; 41%). Those rated as good increased from 1 (1%) to 2 (3%). A majority of classrooms scored as adequate before (*n* = 39; 55%) and after (*n* = 40; 56%) training. Fifteen of the 71 (21%) classrooms showed post-training increases of at least .50 in the mean total scores.

Perspectives about Children with Special Needs or Disabilities

Data on the out-of-class project were analyzed to determine the extent to which participants' perspectives about children with special needs changed. Prior to completing the child portfolio, participants selected a child with a disability or special need for the project and wrote a one-page story about the child. They wrote a second story about the child during the last class session. Stories were coded to reflect perspectives about special needs. Initial stories tended to describe children in terms of deficits or what they did not do (e.g., does not listen), or negative behaviors that children displayed (e.g., hits other children). Post-description stories reflected an emphasis on the children's strengths, interests, and achievements. These previously reported data (Campbell, Milbourne, & Silverman, 2000) documented positive changes in the ways participants represented children.

DISCUSSION

PIN was funded, developed, and evaluated as a program to impact the quality of child care for all children, including those with disabilities. The settings in our sample of infant-toddler and preschool classrooms showed statistically significant differences between pre- and post-training total mean environment rating scale scores with medium effect sizes. Fewer than 30% of the classrooms in either group, however, showed mean total score changes of greater than .50 of a point within the 3- to 4-month training span. The total mean score difference for infant-toddler class-

rooms was .28 and .19 for preschool classrooms. A greater number of classrooms in the infant-toddler (*n* = 15; 22%) than in the preschool (*n* = 4; 6%) sample showed observable change, a measure reflecting change in the category of rating (e.g., change from inadequate to adequate). With the exception of one preschool and two infant-toddler classrooms, where scores changed from adequate to good quality, observable change resulted in a quality change from inadequate to adequate care. One other study has used this measure of observable change and the percent of infant-toddler rooms showing observable change in our sample was comparable to the reported 19% (18 out of 95) of family care homes with observable change following participation in a 9-month training program (Kontos, Howes, & Galinsky, 1996).

Our evaluation data show that small changes in quality (as measured by the environment rating scales) can occur in inner city classrooms where staff participate in a short-term training program. Given the 3- to 4-month length of the training program and the context of inner city child care programs, the small *observable* change in quality practices might be reasonable. Following training, scores on most of the subscales achieved adequate quality but only the interaction subscale (on the ITERS) was rated as good quality. There were no changes in the adult needs subscale for either group, which would be expected given the items included on this subscale (e.g., availability of separate space for adults) and the physical facilities of centers in our sample. While more classrooms were rated as adequate or good quality following training, inadequate quality care was still provided following training in 29% of the infant-toddler and 41% of the preschool classrooms.

Quality of child care has been linked to educational experiences of the child care staff (e.g., Campbell et al., 2000; Vandell & Wolf, 2000). A majority of the caregivers in our sample had low formal educational levels and were working in settings with less than optimal physical environments. This combination of characteristics might result in challenges to child care quality that are difficult to over-

come fully through short term training activities. An evaluation of the TEACH training approach, a more extensive program than short-term professional development, was evaluated with a cohort of 34 caregivers, 19 of whom participated in TEACH and 15 who did not (Cassidy et al., 1995.) The study sample included participants with high school degrees but no formal post-high school education (i.e., no previous coursework) but did not describe the locations or types of programs in which participants were employed. The classrooms of the child caregivers enrolled in TEACH scored significantly higher on environmental rating scales (ECERS; ITERS) following a 6- to 9-month period during which child caregivers completed community college courses. The average change in pre- to post-training total mean scores was .19 and both pre- and post-test quality of these classrooms were rated as adequate (pre-test $M =$ 4.61; post-test $M = 4.80$). In our sample, the same or greater change in total mean scores on the environment rating scales were achieved with a shorter-term training program that included less extensive didactic instruction combined with on-site consultation.

Results of the evaluation of the effects of this training program on child care quality offer a promising strategy for impacting quality of care for all children, including those with special needs or disabilities, and particularly for children being cared for in inner city child care programs. Changes in the quality of participant classrooms were comparable to those reported in other studies of professional development; however, classrooms in our sample began and ended with lower total mean scores, and, therefore, were of lesser quality, than those reported in other studies. Although changes were noted, more than one-third of the classrooms in the sample continued to provide inadequate care after training. Perhaps modifying the training program to include a longer time span, increasing the amount or type of consultation provided, or emphasizing different content areas might have assisted programs that started out with inadequate quality to achieve at least an adequate quality of care.

Limitations

Although the number of classrooms in which we collected evaluation data was large, we did not compare results of quality measures with classrooms where caregivers had not participated in the training program nor did we identify the ways in which the different training curricula elements (e.g., hours and content of didactic class sessions or hours and content of on-site consultation) or characteristics of the child care programs or providers might have influenced program quality. Another limitation relates to the evaluation design decision to compare pre-post environmental scores at the classroom level, ignoring the potential effects of classrooms nested within programs that shared facilities, administrators, and other organizational variables that might have impacted classroom quality. In addition, we were unable to follow participants or programs for the length of time necessary to measure the effect of the training on enrollment of children with disabilities. These limitations suggest areas for future study.

Sustainability of the Innovative Practice

The sustainability of training curricula past their demonstration phase has most frequently occurred via outreach efforts where program developers have secured additional federal or state funds to assist others to replicate or adapt existing curricula. Often, when these external funds end, widespread use of the training curricula also ends. As data demonstrating the effects of the PIN training program on program quality for all children became available during the demonstration phase, we worked to disseminate this information to local and state policymakers to institutionalize the training curricula as a part of the state's training and technical assistance system for child caregivers. The training program became an approved option for child care training without the need to rely on continued external financial support. Posting the instructor guide and participant materials on a website allowed the program to be adapted and replicated in other states as has additional dissemination via train-the-trainer and informational workshops in other states.

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programs differ from programs located in communities with greater economic resources in a variety of ways. The most important difference is that they provide care for greater numbers of vulnerable children who are likely to demonstrate poor readiness for kindergarten and greater referral for special education services at school age. Finding effective ways to affect the quality of child care and establish use of practices that promote successful inclusion has the potential for not only ensuring that identified infants and preschoolers with disabilities receive quality care but also for buffering not-yet-identified children so that they can enter school successfully and require fewer special education supports during their school years.

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