Diverse Pathways in Early Childhood Professional Development: An Exploration of Early Educators in Public Preschools, Private Preschools, and Family Child Care Homes

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Abstract

This paper presents a naturalistic investigation of the patterns of formal education, early childhood education training, and mentoring of a diverse group of urban early childhood educators participating in the Los Angeles: Exploring Children's Early Learning Settings (LA ExCELS) study. A total of 103 preschool teachers and family child care providers serving primarily low-income 3- and 4-year-old children in Los Angeles County provided data on their education, training, and beliefs about teaching. This sample worked in public center based preschool programs including Head Start classrooms and State preschool classrooms (N=42), private non-profit preschools including community based organizations and faith-based preschools (N=42), and licensed family child care homes (N=19). This study uses a person-centered approach to explore patterns of teacher preparation, sources of support, supervision, and mentoring across these 3 types of education settings, and how these patterns are associated with early childhood educators' beliefs and practices. Findings suggest a set of linkages between type of early education setting, professional development, and supervision of teaching. Public preschools have the strongest mandates for formal professional development and typically less variation in levels of monitoring, whereas family child care providers on average have less formal education and more variability in their access to and use of other forms of training and mentorship. Four distinct patterns of formal education, child development training, and ongoing mentoring or support were identified among the educators in this study. Associations between professional development experiences and teachers' beliefs and practices suggested the importance of higher levels of formal training for enhancing the quality of teacher-child interactions. Implications of the findings for changing teacher behaviors are discussed with respect to considering the setting context.

Early childhood education in the United States is currently situated within a policy context that is driven primarily by concern about declining test scores of U.S. students in elementary and secondary school. In a population with growing challenges such as increasing numbers of English Language Learner (ELL) students in increasingly resource-challenged schools, the

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question of how to improve student performance has produced lively debate. In 2001, President Bush addressed the symptoms by introducing the No Child Left Behind (NCLB) legislation, which requires schools and teachers to be held accountable for their students' performance on standardized tests. At the state and local levels, concerns about the early appearance of achievement gaps related to race, ethnicity and socioeconomic status has fueled support for universal voluntary pre-kindergarten programs. The "promise of preschool," supported by longitudinal studies suggesting long-term benefits of attending high-quality preschool and child care programs (e.g., Perry Preschool [Schweinhart, Barnes, Weikart, Barnett, & Epstein, 1993]; the Abecedarian Program [Ramey & Campbell, 1984]; the Cost, Quality and Outcomes Study [Helburn & Howes, 1996]), has led to increasing focus on preschool and pre-kindergarten programs to bear the burden of reducing racial and socioeconomic gaps in school readiness before children enter kindergarten. Indeed, the accountability requirements of NCLB are not unfamiliar to the preschool and pre-kindergarten community, which has long been asked to justify its existence and funding through documenting positive impacts on children lasting even after they begin to attend poor or mediocre elementary schools.

Initially, the debate about child care and preschool quality focused on structure and process dimensions. Structure was measured with respect to characteristics that can be enforced through licensing regulations, such as group size, adult:child ratios, and education and training requirements. Process quality was typically measured using observational tools that take into account the materials and activities available to children and the interactions between adults and children. Numerous well-designed research studies have illustrated the connections between structure and process quality and children's positive developmental outcomes (Howes et al., 2008; NICHD ECCRN, 2002).

Today, the current policy context pushing accountability and driving the creation of large publicly-funded pre-kindergarten programs has led to increasing debate about how to produce high quality early childhood education for a diverse population of preschool children within a highly regulated public sector. Important questions raised in this current debate include the following: Is a Bachelor's degree necessary to ensure quality teaching in an early childhood education program? Is specialized early childhood education (ECE) training necessary? Are either of these sufficient? What types of ongoing education and supervision should take place for early childhood educators? These questions have relevance for the funding of pre-kindergarten programs in large urban areas as well as statewide programs.

There is an emerging body of research that has addressed some of these questions about formal education for early childhood educators. There is clearly evidence that higher levels of teacher qualifications are associated with higher quality classroom environments (Barnett, 2003; Bowman, Donovan & Burns, 2001; Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; Loeb, Fuller, Kagan, & Carol, 2004; Shonkoff & Phillips, 2000). The literature is less than clear, however, about what level of qualifications are *necessary* for effective teaching of preschool children. The question of whether or not a bachelor's degree (BA) is necessary was recently addressed in an analysis of 7 large data sets (Early et al., 2007), which concluded that policies focusing solely on increasing teachers' formal education were not sufficient to improve classroom quality or maximize children's gains.

One alternative to the BA is a teacher credentialing system that gives weight to the content of a teacher's training, rather than only to the degree. California has used such a teacher credentialing system in the early childhood education sector since the 1940s. This system, based on K-12 teacher credential systems, requires particular courses in child development and/or early childhood education. Unlike K-12 systems, however, the California Child Development Permit (CCDP) does not require a BA degree, although a teacher can hold both a credential and a BA degree. A recent study of the CCDP system explored the impact of having

a permit on teachers' behaviors in privately and publicly funded preschool classrooms (Vu, Jeon, & Howes, 2008). Analyses explored the varying impacts of the CCDP and BA degree on teachers' practices, and found that the program auspice mediated the influence of degrees and credentials. In private community programs and Head Start/general child care programs, having a BA made a positive difference in teacher's behaviors, but in school district and state preschool programs, which have higher credential requirements for preschool teachers, having the BA did not make as much of a difference.

The Vu et al. study illustrates the importance of examining the larger context within which teaching is embedded, such as the program auspice. Other contextual features that could make a difference include the availability and extent of ongoing training, supervision, and mentorship. Mentoring, being an apprentice, and being a student teacher have all been recognized as important parts of preservice teacher preparation (Spodek & Saracho, 1990). Howes, James, and Ritchie (2003) found that after controlling for formal education levels, teachers' responsive involvement and engagement of children in language play could be predicted by the extent to which teachers were supervised and mentored. In another study, teachers' provision of language arts activities was predicted by their formal education, being mentored, and being supervised (Bellm, Whitebook, Cohen, & Stevenson, 2005). Thus, ongoing professional development outside the realm of academic educational training seems to play an important role.

Another contextual feature of early childhood programs is the diversity of backgrounds of the early educators themselves. In many geographic areas, the early childhood education "system" is actually made up of multiple systems and programs including state preschools, school district pre-kindergarten programs, community based preschools and child care programs, subsidized child care within welfare-to-work programs, and home-based family child care programs. In fact, many of the categories listed above are not mutually exclusive, but overlapping as different fund sources are used to meet the needs of working parents and preschool children. (See Karoly, Reardon, & Cho, 2007 for a discussion of the complexity within California's early childhood systems.) These systems use varying regulations to determine who is qualified to provide care or education services, resulting in a diverse population of professionals providing early childhood education to young children.

Few studies have examined the impacts of different educational and training backgrounds in the truly diverse population of early childhood educators serving low-income children. Given the literature on the importance of BA degrees found in several studies, we are particularly interested in understanding alternative pathways to quality teaching for programs where most of the staff may not have BA level education. There is some evidence that being mentored and supervised in a reflective fashion can produce early educators whose responsive involvement and engagement with children is equivalent to that of teachers with BA degrees (Howes, James, & Ritchie, 2003).

In the current study, we explore patterns of formal education and training, as well as mentoring and supervision, in a diverse sample of early educators serving low income preschool aged children in Los Angeles County, California. The sample includes teachers in Head Start programs, public preschools, private community-based preschools, and family child care homes. By including early educators from programs that have varying certification and education requirements we are able to address questions about variation in education, training, and support and how those relate to early educators' beliefs and practices.

This study uses a person-centered analysis approach to address the following questions in a diverse sample of early childhood educators:

1. What are the patterns of formal education, early childhood education training, and mentoring in the 3 groups of educators (public preschool teachers, private preschool teachers, and family child care providers)?

2. Do patterns of training and education predict the levels and types of monitoring or mentoring received?

3. Are patterns of professional development and monitoring distributed similarly across the different types of early education programs?

4. Are there differences in teacher beliefs by type of care and type of professional development and monitoring?

5. Are there differences in observed teaching practices related to patterns of professional development and monitoring?

Methods

Sample

This study uses data from a larger longitudinal study of low-income preschool children in Los Angeles County. Children were recruited to participate in the study during the academic year when they were 3 years old or turning 4 (two years prior to kindergarten eligibility). These children were then followed through their two pre-kindergarten years. The children initially recruited into the study attended publicly funded center-based preschools including Head Start and school district early learning centers serving 3-year-olds, private non-profit preschools serving low-income children, family child care homes, or no licensed preschool or child care program. When children were followed in the second year of the study many moved into different or new early childhood programs. In all cases, children's teachers or family child care providers were asked to participate in the study by completing questionnaires and allowing observation in their classrooms or programs.

The data used for this investigation are derived from the early educators' questionnaires and observations conducted in their classrooms or programs. The sample includes the original educators visited in the first year of the study, as well as any new teachers or child care providers who entered the study in the second year in the event that our study children moved into their program. The total sample includes 103 early educators. Overall, 42 teachers were in public preschool classrooms, 42 in private preschool classrooms, and 19 were licensed home-based family child care providers who were members of professional family child care networks. Table 1 presents the demographic characteristics of the educators in each of the 3 categories. Educators were almost exclusively women with diverse racial/ethnic backgrounds. Family child care providers tended to be older on average than center based preschool teachers in the two other categories.

Measures

Early childhood educators completed questionnaires about their demographic characteristics; education; training, mentoring, and supervision; teaching experience; and beliefs about children, teaching, and early childhood education. Questions about education included the highest degree earned, number of years of schooling, coursework and major in early childhood education (ECE) or child development (CD), years of experience teaching at different age levels, teaching certification, and child development permit status. Educators were also asked about their sources of additional training and information, including whether or not they have/ had a mentor or are a mentor, whether they have received training and supervision in their curriculum, and whether they attend workshops or conferences. Responses to these questions

were used to address the first set of research questions, to describe patterns of education, training, and ongoing support and professional development among the educators.

The last two research questions address associations between the patterns of professional development and early educators' beliefs and practices. Measurement of these "outcomes" comes from additional survey questions as well as observations in classrooms and child care programs. First, questionnaire data were used to measure educators' beliefs about children, early childhood education, and preparation for school. Second, observations were conducted in classrooms and programs to assess the quality of instructional supports and emotional climate, and the amount of children's engagement in different activity types. Each of these questionnaire and observational measures is described below.

Beliefs about children—Educators beliefs about children were measured with the Modernity Scale (Schaefer & Edgerton, 1985), which is made up of 16 questions assessing the extent to which beliefs are "traditional," or relatively authoritarian, as opposed to more "modern," positive, or child-centered. A more traditional view is expressed in questions such as "Children should always obey the teacher," and "The major goal of education is to put basic information into the minds of the children," whereas more child-centered beliefs are endorsed by agreement with items such as "Children should be allowed to disagree with their parents." Responses are recorded on a 5-point scale with scores of 5 indicating strongest agreement with each statement. Items reflecting more authoritarian views were reverse-coded in data analysis, and all items were averaged, so that the final score on the Modernity Scale ranges from 1-5 with higher scores indicating more "modern" beliefs about children. Chronbach's alpha for this scale was reported as ranging from .88 to .94 in the original validation study with mothers of kindergarteners (Shaefer & Edgerton, 1985) and .78 when used with preschool teachers (Justice, Mashburn, Hamre & Pianta, 2007). In this sample, scores ranged from 2.25 to 4.69 (mean=3.44, s.d.=.64), and Chronbach's alpha was .80.

Beliefs about ECE—A set of 9 questions assessed educators' beliefs about how young children should be taught, including items advocating a child-centered approach (e.g. "Children should be allowed to select many of their own activities from a variety of learning areas that the teacher has prepared") and items endorsing a more rigid academic approach (e.g. "Children should form letters correctly before they are allowed to create a story"). This set of items was used in the Head Start Family and Child Experiences Survey (FACES 2000; Zill et al., 2003). With some items reverse-coded so that high scores represented agreement with child-directed and developmentally appropriate early childhood practice, the scores on this scale ranged from 2.00 to 4.89 (mean=3.43, s.d.=.60) on this 5-point scale. The Chronbach's alpha indicated acceptable internal consistency, at .71.

Beliefs about preparation for school—The questionnaire included a set of questions about the importance of various practices in preparing children for elementary school, including home activities and preschool activities (e.g. "Parents should read to their children and play counting games at home regularly" and "Attending preschool [for example, nursery or pre-kindergarten] is very important for success in kindergarten."). Agreement with each statement was rated on a 5-point scale, and responses averaged for a total score. Scores ranged from 1.75 to 4.43 points (mean=2.73; s.d.=.54), and the Chronbach's alpha was .72.

Observational measures—Each classroom or home child care program was observed by professional research field staff trained to high standards of reliability on each observation system. Observational measurement tools included the Classroom Assessment Scoring System (CLASS; La Paro, Pianta, Hamre, & Stuhlman, 2001), Adult Involvement Scale (Howes & Stewart, 1987); and the Pre-Academic Snapshot (Ritchie, Howes, Kraft-Sayre, & Weiser, 2001).

The CLASS observation focuses on the quality of the interactions and activities provided by the teacher or caregiver, with a series of 20 minute observations each resulting in a set of items coded on a 7 point scale. Two subscales were calculated for this investigation: Emotional Climate (an average of 5 items: positive climate, negative climate [reversed], teacher sensitivity, overcontrol [reversed], and behavior management) and Instructional Climate (average of productivity, concept development, learning formats, quality of feedback, and children's engagement). In general, the programs we observed had low to moderate scores on Emotional and Instructional Climate. Emotional Climate ranged from 2.5 to 4.5 points with a mean of 3.8 (s.d.=.38) and Instructional climate ranged from 1.9 to 4.7 points with a mean of 3.1 (s.d.=.53).

The Adult Involvement Scale (Howes & Stewart, 1987) was scored during the same 20-minute intervals as the CLASS items. This 7-point scale assesses the level of interaction between the child being observed and the teacher or caregiver. Scores in the lowest range (1-3 points) represent non-response and very low-level responses whereas scores in the highest range (6-7 points) represent elaborated and responsive interaction. In this sample the average score on the Adult Involvement Scale was relatively high (mean=5.1, s.d.=.62, range=2.8-6.1)

The Emergent Academics Snapshot is an observational measure employing partial interval coding in which a focus child is observed for a 40 second period, and then 20 seconds are spent coding the activities and interactions that were observed. The observer cycles through up to 3 more focus children in this manner, repeating the observations throughout several hours, for a total of up to 50 observations of each individual child and 200 observations overall for the session. For this analysis we used codes representing the amount of time children were observed in literacy activities, the amount of time teachers were observed to be scaffolding children's learning (indicating awareness of children's developmental level and encouraging the children's advancement), and the amount of time teachers were observed to be engaging in didactic (direct) instruction. Each of these categories is not mutually exclusive, and mean scores indicate the proportion of the day each type of activity was observed (literacy activities, scaffolding, didactic instruction). Overall, children were observed to be engaged in literacy activities for 6% of the time (s.d.=6%, classroom averages ranged from 0% to 39%), teachers spent 14% of the time scaffolding children's learning (s.d.=10%, range=0% - 45%), and 31% of the time in didactic instruction (s.d.=.16, range=0% - 83%). Over the past few decades, this measure has been developed and used among diverse educators and child care professionals in very diverse classrooms and child care settings throughout Los Angeles County and in multi-site national studies (e.g., Howes, Burchinal, Pianta, Bryant, Early, Clifford, et al., 2008).

Analysis Approach

This study is concerned with identifying different patterns of education and professional development within a diverse sample of early educators. Therefore, a person-centered approach was used. Person-centered (as opposed to variable-centered) analysis seeks to identify groups of individuals who are alike according to their characteristics measured by a set of variables of interest. One such approach is known as cluster analysis (Henry, Tolan, & Gorman-Smith, 2005). Cluster analysis is an exploratory approach for creating groups with the goal of maximizing the similarities of cases within clusters and maximizing the dissimilarity, or "distance" between clusters of cases. Through a series of steps, the investigator typically compares cluster solutions with successive numbers of clusters (groups of cases) identified, and determines the most meaningful solution that is consistent with theoretical explanations and includes a sufficient number of cases in each cluster group. In this way, cluster analysis is analogous to exploratory factor analysis except that the groups created are groups of individual cases displaying similar patterns across a set of variables, rather than groups of variables that are highly intercorrelated.

In this study, the person-centered approach was used to identify groups of educators with similar patterns of education, training, and supervision. After describing characteristics of each group of educators (public preschool teachers, private preschool teachers, and home-based family child care providers) we conducted cluster analysis to determine whether we could identify groups of educators with similar patterns of professional development and monitoring and how these relate to their formal education and training. Next, we explored associations between cluster membership and program type, educators' beliefs, and observed teaching practices by conducting Analyses of Variance (ANOVA) to determine effects of different patterns of professional development on teaching practices and beliefs as well as potential interactions between professional development patterns and program types.

Results

As expected, there are different patterns of demographics and professional development across the three program types. There also are differences in curriculum based training and support, but fewer differences in general mentoring. Sources of information differ across forms of care. Results of our analyses are presented below with respect to each of the identified research questions

1. What are the patterns of formal education, early childhood education training, and mentoring for educators in public preschool, private preschool, and family child care settings?

We found differences in the levels of formal education, early childhood training, and certification status for each group (see Table 2). There were high levels of variance and no significant differences in the years of experience for the three groups of educators. Public preschool teachers had higher levels of formal education (more years on average and higher rates of BA and graduate level education) than private preschool teachers and family child care providers. Family child care providers had the most diverse set of educational backgrounds, with the highest rates of not attending college (42%) but also relatively high rates of graduate level education (21%), and virtually no Associates degrees (5%). Among the participants who attended some college, family child care providers had substantially lower rates of child development or Early Childhood Education majors (17% compared to 69% and 68% for the 2 groups of preschool teachers). However, the family child care providers with early childhood training at the college level were all BA degree holders whereas the preschool teachers held AA degrees or were more likely to have majored in ECE without obtaining a degree.

Education and training were combined into a composite categorical variable, with five different patterns identified (see Table 3). Educators with lower levels of education were divided into two groups – those with no child development training, and those with some college-level classes. College degree holders formed three groups – those with Associate-level child development training, those with a BA but not in a child development major, and those with a BA in child development.

Next, we explored educators' sources of ongoing training and support. Educators reported whether or not they had received training and ongoing support on a curriculum and if so by whom. Professional development experiences with respect to curriculum use also varied by program type, with virtually all preschool teachers trained on their curriculum (93% of public and 88% of private preschool teachers). In contrast, only 44% of family child care providers reported being trained on a curriculum (see Table 4). Similarly, public and private preschool teachers tend to receive ongoing support in their curriculum use (88% and 84%, respectively) but educators in family child care homes were much less likely to be receiving ongoing support (38%).

Educators reported other sources of ongoing support for their teaching, including print materials, workshops and courses, and experience with a mentor. Sources of teaching support differ according to program type. Support from other teachers is more readily available for a significant proportion of preschool teachers (46% of public and 27% of private preschool teachers), whereas family child care providers are overwhelmingly more likely to seek information at conferences and workshops (82%; see Table 5). There were no significant differences by program type in rates of receiving or providing mentorship.

2. Do patterns of training and education predict the levels and types of monitoring or mentoring received?

We explored this question by first determining whether the educators belonged to distinct groups with respect to patterns of education, training, supervision, and monitoring. We conducted cluster analysis using the SPSS K-Means Cluster command to explore four dimensions: participant's category with respect to professional development as described above (ranging from low education and no training through at least a bachelor's degree with a child development focus), whether or not the participant is supervised (either receives ongoing supervision in the use of curriculum, or reports that someone else makes the day-to-day decisions regarding the children's activities), whether or not the participant is mentored (reports having a mentor, or being supervised by a mentor), and whether or not they follow a daily written plan of activities. Using these four dimensions of training, supervision, and monitoring, the cluster analysis yielded four distinct patterns. These are presented in Table 6. Using this person-centered approach, we found primarily that the low professional development group can be distinguished with respect to the amount of supervision and monitoring they receive. Ten percent of the sample fell into a cluster characterized by low professional development combined with low monitoring. In this group, only 8% were supervised, and 33% were monitored. In contrast, the rest of the participants with low levels of education fell into the low professional development/high monitoring group, with 92% of these educators reporting being supervised and following a daily written plan, and 58% being mentored. Among the more highly educated participants, levels of supervision and monitoring were similar, and the primary distinguishing characteristic was the possession of an AA degree in child development (67% in cluster 3) versus a BA degree in child development (80% in cluster 4). Those in cluster 4 were somewhat less likely to have a mentor than those in cluster 3.

3. Are patterns of professional development and monitoring distributed similarly across the different types of early education programs?

Table 7 shows the distribution of cluster membership across the three program types. Cluster 1, the group of educators with both low training and low monitoring, was made up almost exclusively of family child care providers (92%). The low education but more highly monitored group was made up primarily of private preschool teachers, but also included some public preschool teachers and a family child care provider. The most diverse group was the highly trained and educated group, which was made up of a majority of public preschool teachers but also substantial proportions of private preschool teachers and family child care providers.

4. Are there differences in teacher beliefs by type of care and type of professional development and monitoring?

To address this question, we conducted analyses of variance (ANOVA) to compare means on teacher beliefs about children, early childhood education, and preparation for school in each professional development cluster. In addition, we were interested in whether there was an interaction effect of professional development and program type on teacher beliefs. For this analysis, we collapsed the 2 center-based program types into a single group, to conduct a 4 (professional development cluster) $\times$ 2 (center versus family child care program structure)

ANOVA. Results of these analyses are presented in Table 8. We found patterns of professional development and monitoring are related to differences in beliefs about children. The two higher professional development clusters had more "modern" views about children than the low-education/high monitoring group. The small group in the lowest professional development cluster had scores on this scale that did not differ significantly from the other three groups. There were no differences by cluster membership in beliefs about early childhood education or school preparation. There was also a significant interaction of cluster and program type affecting beliefs about children. Among center based programs there was no impact of cluster membership, but in family child care, professional development was associated with more modern views, and in fact these highly educated family child care providers were more modern than the center based teachers in the same professional development cluster.

5. Are there differences in observed teaching practices related to patterns of professional development and monitoring?

A similar analysis approach compared means on observed emotional and instructional climate, adult involvement, literacy activities, scaffolding and didactic instruction by professional development cluster and program type. Overall, few differences were found. However, Emotional Climate was significantly higher in settings taught by educators in the highest professional development cluster, suggesting a more positive and sensitive emotional climate provided by college graduate educators with a BA degree in a child development major, regardless of the type of program (see Table 9).

Discussion

This investigation provides information about the educational background and professional training experiences of a diverse group of early childhood educators serving low-income children in a large urban county. Although a relatively small sample, this study adds to the ongoing discussion about the importance of the Bachelor's degree and specialized child development training and supervision for early childhood educators. When looking across a variety of program types, we are able to see how formal education and child development training vary among licensed networked family child care providers, preschool teachers in private programs and public preschool teachers. The greatest variation in education and training was observed in family child care where educators ranged from no education and training to specialized BA and graduate training.

These differences by program type reflect the variations in licensing and employment qualification requirements in these three setting types. Regardless of formal education levels, program type seems to have important implications for access to ongoing training and supervision. Family child care providers have fewer opportunities for day-to-day support from other educators or mentors and seek continuing professional development experiences primarily through workshops and conferences.

Our person-centered cluster analysis identified four distinct patterns of education, training, and supervision in this diverse group of educators. The clusters highlighted distinctions between low levels of formal education with and without ongoing supervision and monitoring and BA-level education with and without specialized child development training. When exploring the distribution of these professional development patterns across the three program types, we found the cluster with the least professional development experience was made up primarily of family child care providers, the low education/high monitoring group was primarily private center-based teachers, and the most highly trained group had the most diverse group of educators although the majority were public preschool teachers. These findings suggest that

preschool programs employing teachers with lower levels of education and training tend to provide high levels of supervision and monitoring.

Finally, we explored how these patterns of professional development were associated with educators' beliefs and practices. The findings suggested that these different pathways to education and training were mostly related to beliefs about children and the emotional quality of interactions with children. Findings pointed to the importance of the BA degree in family child care for enhancing more authoritative or democratic beliefs about children, and the importance of child development training at the BA level to improve teachers' provision of a positive emotional climate.

Given the literature and debate regarding the necessity of BA degrees for early childhood educators, we were particularly interested in understanding alternative pathways to quality teaching for educators who did not have BA level education. What emerges from this exploration is that BA degrees are important. But we found, as well, that other pathways are important for these effective teaching behaviors, including being mentored, supervised and monitored.

This study is limited by its sample size, particularly as program type and professional development clusters considered together resulted in some quite small cell sizes. The sample is clearly not representative of the population of early childhood educators serving low income children. However, the sample is unique, in that it illustrates the diversity of educators with respect to program types and professional backgrounds. The approach to describing professional development and training in this sample was intentionally designed to consider the diverse contexts within which this sample of early educators works and the diverse educational pathways that they may have followed. We considered multiple sources of mentoring and supervision, and explored variation in college level education by distinguishing between AA and BA degrees and degrees with and without a child development major.

The results indicated that although pathways may be diverse, there seem to be a few distinct patterns early educators may follow. The results also illustrated areas of potential need for greater professional development and supervision. We identified a small group made up primarily of family child care providers, with very little supervision – only 1/3 of these educators reported having a mentor. We also noted that higher rates of mentoring existed among center-based teachers in the groups with less training (those without a BA in child development).

When we looked at associations between the patterns of professional development and the beliefs and practices of the educators, we found that the groups with different professional development experiences are also similar in many ways despite their different pathways to education and ongoing training. The implications of our findings are that the BA degree alone is not sufficient to produce large differences in the outcomes examined here. Specialized training at the BA level or above can make a difference in the quality of teacher-child interactions This finding is consistent with other similar studies (Howes et al., 2003; Vu et al., in press). Some group means suggest that the small low education/low professional development group is functioning relatively well without formal training and supervision. Particularly, they show high means on the adult involvement scale and rates of engaging in scaffolding interactions with children. Additional study with a larger sample is needed to determine whether this finding persists. However, we must consider that other indicators not measured in our professional development factor may contribute to variation in teaching quality.

Further research should consider additional outcomes related to these diverse pathways of professional development in the early education field, including the potential impacts on

children's development. Although exploration of child outcomes is beyond the scope of this analysis, determining whether the differences in teacher beliefs and observed teaching practices also translate into impacts on child development will be an important next step.

Ultimately, this study breaks new ground in the ongoing debate about what is necessary and sufficient to produce quality teachers in the early childhood education field by illustrating the diversity in the population of professionals serving in this field and the diversity of pathways by which they receive their professional development. There is clearly room for more mentoring and support, particularly for family child care providers who have fewer opportunities for this kind of feedback. Furthermore, any policy that not only mandates BA degrees, but provides tangible support for obtaining the BA in a child development major will raise the quality of the pool of educators serving the low income children who can most benefit from a high-quality early childhood education.

Acknowledgments

References

Barnett, WS. Preschool Policy Matters. Vol. 2. New Brunswick, NJ: NIEER; 2003. Better teachers, better preschools: Student achievement linked with teacher qualifications.

Bellm, D.; Whitebook, M.; Cohen, A.; Stevenson, C. Teacher credentialing in early care and education: Prospects for universal preschool in California and lessons from other states. Berkeley, CA: Center for the Study of Child Care Employment; 2004.

Bowman, BT.; Donovan, MS. Eager to learn: Educating our preschoolers. Burns, MS., editor. Washington, DC: National Academy of Sciences; 2001.

Burchinal MR, Roberts JE, Riggins R Jr, Zeisel SA, Neebe E, Bryant D. Relating quality of center-based child care to early cognitive and language development longitudinally. Child Development 2000;71:339–357. [PubMed: 10834469]

Early DM, Maxwell KL, Burchinal M, Alva S, Bender RH, Bryant D, et al. Teachers' education, classroom quality, and young children's academic skills: Results from seven studies of preschool programs. Child Development 2007;78:558–580. [PubMed: 17381790]

Helburn SW, Howes C. Child care cost and quality. The Future of Children 1996;6:62–81. [PubMed: 8972128]

Henry DB, Tolan PH, Gorman-Smith D. Cluster analysis in family psychology research. Journal of Family Psychology 2005;19:121–132. [PubMed: 15796658]

Howes C, Burchinal M, Pianta R, Bryant D, Early D, Clifford R, Barbarin O. Ready to learn? Children's pre-academic achievement in pre-Kindergarten programs. Early Childhood Research Quarterly 2008;23(1):27–50.

Howes C, Stewart P. Child's play with adults, toys, and peers: An examination of family and child care influences. Developmental Psychology 1987;23:423–430.

Howes C, Burchinal M, Pianta RC, Bryant D, Early D, Clifford R, et al. Ready to learn? Children's pre-academic achievement in prekindergarten. Early Childhood Research Quarterly 2008;23:27–50.

Howes C, James J, Ritchie S. Pathways to effective teaching. Eary Childhood Research Quarterly 2003;18 (1):104–120.

Justice LM, Mashburn AJ, Hamre BK, Pianta RC. Quality of language and literacy instruction in preschool classrooms serving at-risk pupils. Early Childhood Research Quarterly 2007;23(1):51–68.

Karoly, L.; Reardon, E.; Cho, M. Early care and education in the Golden State: Publicly funded programs serving California's preschool-age children. Santa Monica, CA: RAND Corp; 2007.

La Paro, K.; Pianta, RC.; Hamre, B.; Stuhlman, M. Early Elementary Classroom Quality Observation System. Charlottesville, VA: University of Virginia; 2001.

Loeb S, Fuller B, Kagan SL, Carroll B. Child care in poor communities: Early learning effects of type, quality, and stability. Child Development 2004;75:47–65. [PubMed: 15015674]

NICHD ECCRN. Structure > Process > Outcome: Direct and indirect effects of caregiving quality on young children's development. Psychological Science 2002;13:199–206. [PubMed: 12009038]

Ramey C, Campbell F. Preventive education for high-risk children: Cognitive consequences of the Carolina Abecedarian Project. American Journal of Mental Deficiency 1984;88:515–523. [PubMed: 6731489]

Ritchie, S.; Howes, CH.; Kraft-Sayre; Weiser, B. Emergent Academics Snapshot Scale. University of California, Los Angeles; 2001. Unpublished document

Schweinhart, LJ.; Barnes, HV.; Weikart, DP.; Barnett, WS.; Epstein, AS. Significant benefits: The High/Scope Perry Preschool Study through age 27. Ypsilanti, MI: High/Scope Press; 1993.

Shaefer, ES.; Edgerton, M. Parent and child correlates of parental modernity. In: Sigel, IE., editor. Parental belief systems: The psychological consequences for children. Hillsdale, NJ: Erlbaum; 1985. p. 287-318.

Shonkoff, J. From neurons to neighborhoods: The science of early childhood development. Phillips, DA., editor. Washington, DC: National Academy Press; 2000.

Vu J, Jeon HJ, Howes C. Formal education, credential, or both: Early childhood program classroom practices. Early Education and Development 2008;19:479–504.

Zill, N., et al. Head Start FACES 2000: A whole-child perspective on program performance. Washington, DC: U.S. Department of Health and Human Services; 2003.

Table 1

Teacher demographics by program type

| | Form of care | | | | |
| | Center | | Family Child Care | | |
	Public %/ M (sd)	Private %/ M (sd)	%/ M (sd)	χ^2 / F (η^2)	Post-hoc comparison
N	42	42	19		
Female	91%	98%	100%	3.51	
Ethnicity				8.62	
White	21%	12%	21%		
African-American	26%	26%	21%		
Latino	36%	55%	47%		
Asian	5%	5%	11%		
Age in years	43.93 (9.41)	39.42 (9.62)	48.85 (11.20)	5.44** (.10)	Private < Family

**p ≤ .01

Table 2

Qualifications by program type

| | Form of care | | | | |
| | Center | | Family Child Care | | |
	Public %/M (sd)	Private %/M (sd)	%/M (sd)	χ^2 / F (η^2)	Post-hoc comparison
n	42	42	19		
Years of formal school	15.36[a]	14.10[b]	13.26[c]	9.01***(.15)	Public > Private > Family
Category of formal schooling				35.15***	
High school or less	0	12%	42%		
Some college	7%	31%	21%		
AA degree	43%	29%	5%		
BA degree	24%	17%	11%		
More than BA	26%	10%	21%		
Major					
Child dev or ECE	69%	68%	17%	16.60***	
If a Child development or ECE major at what level of schooling:					
n	30	29	3		
Without degree	10%	44%	0%	15.97**	
AA degree	53%	35%	0%		
BA or more	37%	21%	100%		
Years of experience					
Prior to kindergarten	12.35 (9.05)	9.92 (7.61)	8.68 (6.86)	1.65	
Kindergarten	2.38 (6.29)	2.50 (5.56)	4.56 (6.22)	.93	
Older children	3.45 (6.76)	3.06 (6.14)	4.22 (5.99)	.21	
Certification					
Preschool	93%	83%	16%	43.94***	
CDA	53%	57%	11%	11.21***	

*
p ≤ .05

**
p ≤ .01

***
p ≤ .01

Table 3

Formal education composite variable

	1 Lo Ed/ No training	2 Lo Ed/ Training	3 AA CD degree	4 BA no training	5 BA CD degree
n	17	16	26	18	20
Education					
HS or some college	100%	100%	0	0	0
AA degree	0	0	100%	0	0
BA degree or more	0	0	0	100%	100%
Child development training					
Community college courses	0	100%	100%	0	0
AA in child development	0	0	100%	0	0
BA in child development	0	0	0	0	100%

Table 4

Curriculum training and support, mentoring by program type

	Program Type			χ2
	Center			
	Public %/ M (sd)	Private %	Family CC Home %	
n	42	42	19	
Curriculum based training and support				
Is trained on a curriculum	93%	87%	44%	19.99**
Curriculum training by				
Curriculum developers	53%	39%	8%	8.24*
Faculty from School of Education	5%	17%	15%	2.85
Head Start Quality Improvement	5%	6%	8%	
Disability Services Quality Improvement	5%	6%	0%	.68
On-going support in use of curriculum	88%	84%	38%	18.11**
Curriculum support by				
Mentor teacher	31%	39%	18%	.41
Peer teachers	50%	46%	0%	9.83**
Supervisor	81%	64%	0%	24.81**
Curriculum developer	33%	24%	18%	.53
School of Education	0%	9%	0%	.11
Head Start Quality Imp.	6%	3%	0%	.67
Disability Services	8%	0%	0%	.15

Table 5

Sources of support and mentoring by program type

	Program type			χ^2
	Center		**Family CC Home**	
	Public %	**Private %**	**%**	
n	42	42	19	
Sources of information				28.84**
Face to face interaction with other teachers	46%	27%	6%	
Professional printed materials	2%	0%	6%	
Print material for the general public	2%	2%	0%	
Workshops/conferences/presentations	39%	31%	82%	
College courses	10%	32%	0%	
Do you have a mentor	41%	34%	39%	.76
If so				
How often				.72
Once a week	44%	57%	17%	
Every other week	13%	7%	17%	
Once a month	19%	21%	33%	
Less often	25%	14%	33%	
Gone with mentor to observe in another classroom	33%	32%	67%	.38
Acted as mentor for other	55%	49%	35%	.40

Table 6

Teacher clusters of professional development (PD) and monitoring

	1 Low PD & monitoring	2 Low PD/high monitoring	3 AA and BA no training moderate monitoring	4 trained BA moderate monitoring
Professional development				
Low education/no training	100%	30%	0	0
Low education and training	0	70%	0	0
AA CD degree	0	0	67%	0
BA degree no training	0	0	33%	20%
BA CD degree	0	0	0	80%
Supervised	8%	92%	62%	69%
Mentored	33%	58%	51%	35%
Daily written lesson plan	42%	92%	92%	92%
N	10	23	39	25
%	10	24	40	26

Table 7

Teacher clusters of professional development and monitoring by program type

Program Type	1 low pd & monitoring	2 lo pd high monitoring	3 AA and BA no training moderate monitoring	4 trained BA moderate monitoring	χ^2
					63.11**
Public	0%	19%	59%	54%	
Private	8%	73%	36%	31%	
FCC	92%	8%	5%	15%	

Table 8

Teacher beliefs by professional development cluster and program type

| | Center | | | | FCC | | | | Cluster | | Cluster by type | |
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | | | |
	M	M	M	M	M	M	M	M	F	η^2	F	η^2
Teacher beliefs												
About children	4.00	3.18[b]	3.52[b]	3.55[b]	3.27	2.34[d]	4.06[e]	4.03[e]	5.34**	.15	2.82*	.08
									3 = 4 > 2			
About ECE	3.89	3.43	3.46	3.56	3.06	2.56	3.39	3.81	2.20	.07	1.83	.06
About school preparation	2.25	2.64	2.81	2.81	2.60	2.81	2.44	2.69	.37	.01	.50	.02

Note: Numbers in table are marginal means; numbers with the same superscript are similar;

*
$p < .05$;

**
$p < .01$

Table 9

Observed classroom characteristics by professional development cluster membership and program type

Program Type	Center				FCC				Cluster		Cluster X type	
Professional Development Cluster	1	2	3	4	1	2	3	4				
	M	M	M	M	M	M	M	M	F	η^2	F	η^2
CLASS									2.17*	.07	1.60	.05
Emotional climate	3.72	3.83	3.70	3.83	3.83	4.02	3.27	4.19	2.95* 4 > 3	.09	2.14	.07
Instructional climate	4.05	3.01	3.06	3.20	2.95	2.94	2.56	3.24	2.05	.08	1.17	.07
Adult involvement scale	6.00	4.91	5.21	5.02	5.17	5.43	4.59	5.44	1.11	.04	2.12	.08
Literacy engagement	.03	.05	.05	.06	.04	.04	.03	.14	2.04	.07	1.76	.06
Scaffolding children's learning	.21	.12	.14	.17	.15	.23	.08	.14	.72	.02	1.20	.04
Didactic instruction	.62	.24	.31	.33	.34	.47	.38	.39	.71	.02	2.17	.07