

# o c d | Special Report

## Pre-Kindergarten: Characteristics of Public Programs and Factors That Affect Classroom Quality

Interest in public kindergarten programs has surged in the past 10 years. Nearly all states now invest in public pre-kindergarten programs and that investment has reached historic levels. Until recently, however, little evidence was available to define program, teacher, and other key characteristics of public pre-kindergarten around the country and how certain program features relate to the quality of a child's classroom experience.

Recent research, using data gathered in the 2005 National Center for Early Development and Learning (NCEDL) Multi-State Pre-Kindergarten Study, shows how pre-kindergarten programs in six states address issues such as program intensity, location, staffing, and population served. Each of these features can affect costs and benefits. Research based on the NCEDL data also suggests how certain program, classroom, teacher, and child characteristics relate to quality.

The NCEDL study, the first major comprehensive study of pre-kindergarten across several states, collected data from 240 programs in Georgia, Illinois, Kentucky, Ohio, California, and New York. Each state has well-established, large-scale, public pre-kindergarten initiatives.

Pennsylvania only recently joined the list of states that offer funding for public pre-kindergarten. The Education Accountability Block Grant, begun in fiscal 2004-2005, offers grants to the 501 public school districts in the state to support research-based programs designed to boost student achievement, including pre-kindergarten. Last year, schools invested most of the \$200 million allocation on early childhood education, spending more than \$2 of every \$3 to support kindergarten, pre-kindergarten, and smaller class sizes in grades K-third. Most invested in full-day kindergarten. Only 40 districts invested in quality pre-kindergarten programs.<sup>1</sup> Gov.

Edward G. Rendell, in his 2006-2007 budget, proposes a 5% increase in the block grants, which would raise the total available to public schools to \$250 million.

As pre-kindergarten programs grow in Pennsylvania and across the nation, important policy decisions are being made that influence their implementation and outcomes. The recent studies offer a deeper understanding of the implications of program location, length, teacher education, and other key characteristics of these programs.

### Characteristics of Pre-Kindergarten Programs

Investment in public pre-kindergarten has increased dramatically in the United States. State funding to support pre-kindergarten programs rose from \$200 million in 1988<sup>2</sup> to \$2.54 billion by 2003.<sup>3</sup>

Several factors have contributed to the heightened interest in pre-kindergarten, including a greater awareness of the importance of children entering school ready to learn, a rise in the number of mothers in the workforce, research that underscores the role an enriching environment plays in early brain development, and landmark studies, such as the Carolina Abecedarian Study and the Perry Preschool/High Scope Study, which provide convincing evidence that quality early childhood programs benefit the cognitive, social, and emotional development of children.

Despite the unprecedented surge in interest, few states serve more than 20% of their four-year-olds. Although most states provide funding for pre-kindergarten, many of their initiatives are still in the early stages of development.

As might be expected, state-funded pre-kindergarten programs across the nation vary in design, organization, and

staffing. These programs typically serve one of two populations: a specific targeted population, usually children at risk of school problems, or a universal population. Most state-funded pre-kindergarten programs target children at risk for academic problems.

Recent studies drawn from the NCEDL data examined center-based pre-kindergarten programs for 3- and 4-year-olds that were fully or partially funded by state education agencies and were operated in schools or in the community under the direction of state and local education agencies. These included Head Start programs only if the public school district was the grantee or delegate. Programs in four of the six states were targeted toward children considered at risk for academic problems. These children typically entered the program having scored below age norms on the Peabody Picture Test, Oral & Written Language Scale, and Woodcock-Johnson III tests. Overall, the teacher:child ratio was reportedly good. The average enrollment was less than 18 children in a class with about eight children enrolled per adult in the classroom.

The studies identify three structural features that may be critical to the implementation and outcomes: location of the program, length of the school day, and the education of teachers.

### Location

Whether to house pre-kindergarten programs in public schools, community centers, or a combination of both is a basic decision when implementing state-funded programs. A major policy question is whether pre-kindergarten programs operated in the public school differ from programs in other settings.

In studies based on the NCEDL data, 47% of the programs in the six states were located in public schools buildings.

Program location was related to key differences in the characteristics of teachers. About 81% of the pre-kindergarten teachers in public schools held a bachelor's degree or higher and only 8% had not earned a college degree. Among pre-kindergarten teachers in non-public school settings, 57% had a bachelor's degree or higher and 24% had no college degree. Teachers in public school settings were paid significantly more than those who taught pre-kindergarten in non-public school programs.

Nevertheless, the location of the program was not found to be related to the characteristics of the children served or classrooms. In addition, no differences in child assessment scores or teacher-reported curriculum were associated with where programs were located.

### Program Length

Little research is available to allow comparisons between full-

day and part-day preschool. However, studies of the length of kindergarten programs suggest that the length of day matters. For example, children in full-day kindergarten, when compared to peers in part-day programs, are more likely to be offered a richer menu of activities, including dramatic play, science, art, music, and social studies.<sup>4</sup>

In studies based on the NCEDL data, more than half of the public pre-kindergarten programs in the six states were open for fewer than 15 hours a week. A full-day program was defined as one that served children 20 or more hours a week. About 61% of the programs operated five days a week with the others open four or fewer days a week.

Differences were noted in curriculum and the populations of children served. Full-day teachers were more likely to report using High/Scope curricula than part-day teachers, who were more likely to use state- or locally-developed curricula or, in a case of 7% of part-day programs, no curriculum at all. Full-day programs also served a higher proportion of children from low-income backgrounds and African-American children.

### Teacher Characteristics

The education level required to teach pre-kindergarten varies widely from state to state with minimum requirements ranging from a child development associate certificate to an associate's degree or bachelor's degree. Some states demand that the 2- or 4-year degree be in early childhood education or child development.

In studies based on the NCEDL data, 70% of the lead teachers of the programs in the six states had at least a bachelor's degree and nearly 30% had earned a master's degree. On the other hand, 16% had no formal degree past high school. The studies noted that, overall, pre-kindergarten teachers with bachelor's degree or higher is becoming the norm.

Significant differences were found between public pre-kindergarten classrooms taught by teachers with and without bachelor's degrees. Teachers who did not have a bachelor's degree were teaching significantly more children – and a higher proportion of children – from low-income backgrounds than teachers who held bachelor's degrees. Those with bachelor's degrees were more likely to teach children who entered the pre-kindergarten program with higher skills, such as children with higher tests scores for receptive vocabulary and expressive vocabulary. In other words, children most in need of high-quality early learning experiences were more likely to be taught by the teachers with lower qualifications.

### Program Characteristics And Classroom Quality

Nearly all of the state legislation supporting public pre-kindergarten programs emphasizes the implementation of pro-

grams of high quality to ensure that children are well prepared to enter school. What predicts quality child care and quality learning in early elementary school grades is well documented.<sup>5,6,7</sup> Unfortunately, few large scale studies specific to public pre-kindergarten have examined which characteristics predict the classroom quality of these programs.

Recent research drawn from the NCEDL study data examines the extent to which program, teacher, child, and classroom characteristics of pre-kindergarten programs in six states predict the observed quality and teacher-child interactions. Certain features of the Early Childhood Environmental Rating Scale-Revised (ECERS-R), the Classroom Assessment Scoring System (CLASS), and the Emerging Academics Snapshot were used to measure the warmth and appropriateness of teacher-child interactions, quality of language interactions, emotional and instructional climate of the classroom, quality of instruction, and other factors.

Researchers reported that differences in state policies and regulations appeared to account for many of the differences in the quality of the pre-kindergarten experience offered by the programs studied. Other studies that have examined the impact of state-level factors on programs for young children suggest that what affects quality the most is the extent to which regulations, such as those that set teacher-child ratios or minimum teacher credentials, are enforced by the state and the extent to which professional development support is provided to help programs meet those regulations.<sup>8</sup>

Certain characteristics of public pre-kindergarten programs were found to significantly relate to quality, while others were reported to have little impact.

Location of the program, child-staff ratios, and the length of day were found to have little or no affect on the quality indicators used by researchers. Child-staff ratios, however, were fairly consistent across the programs studied and were low, on average.

The quality of the pre-kindergarten experiences was found to be more influenced by the characteristics of the teachers and children in the program.

### Poverty and Program Quality

Studies in elementary schools have reported that the characteristics of children, particularly poverty, can affect program quality and teacher behavior. More specifically, teachers tend to be less sensitive and instructional quality lower in classrooms with a high concentration of children who live in poverty.<sup>9, 10</sup>

Similarly, in the study of pre-kindergarten quality that was drawn from the NCEDL data, the quality of public pre-kindergarten programs – as measured by ECERS-R and CLASS – was typically found to be lower when a majority of the children were from families whose incomes fell below the

poverty line. Researchers, in noting that further study is necessary to more fully understand the relationship between quality and poverty, suggest that the teachers and staff, training and other resources available to offset the effects of poverty may be insufficient.

### Teacher Attributes Matter

Classroom quality was also found to be related to the characteristics of pre-kindergarten teachers, particularly to their level of education.

A fairly substantial number of pre-kindergarten teachers in programs funded by the six states studied had bachelor's degrees, but no early childhood training. The study found several quality indicators were higher when teachers had some level of specialized training in early childhood.

Researchers, for example, reported that teachers with a four-year degree and a teaching certificate in early childhood were rated on the ECERS-R as creating a more positive emotional climate and providing more activities than were teachers who had no formal training in early childhood. Although the effects were small, the observations suggest that specialized training may be needed in addition to a bachelor's degree for a teacher to be more effective.

Other teacher characteristics found to relate to pre-kindergarten classroom quality included the teacher's attitudes and beliefs about interactions with children. These were measured with a questionnaire that discriminates between traditional or relatively adult-centered perspectives on interactions with children and more modern or progressive child-centered perspectives. Teachers with traditional or adult-centered perspectives were rated significantly lower on CLASS instructional and ECERS-R interaction scores.

Research specific to public pre-kindergarten is still developing. However, studies based on the NCEDL data offer states fresh insight into the key characteristics found among some of the longest-running programs in the country and how teacher, classroom, and child attributes affect the quality of these programs that seek to prepare young children for school.

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*This Special Report is based on the above-referenced publications. It is not intended to be an original work but a summary for the convenience of our readers. References noted in the text follow:*

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- <sup>2</sup> Schulman, K., Blank, H., & Ewen, D. (1999). *Seeds of Success: State Pre-kindergarten Initiatives, 1998-99*. Washington, DC: Children's Defense Fund.
- <sup>3</sup> Barnett, W.S., Hustedt, J.T., Robin, K.B., & Schulman, K.L. (2004). *The State of Preschool: 2004 State Preschool Yearbook*. National Institute for Early Education Research: New Brunswick, NY. [www.nieer.org/yearbook/pdf/yearbook.pdf](http://www.nieer.org/yearbook/pdf/yearbook.pdf)
- <sup>4</sup> Elicker, J., & Mathur, S. (1997). What do they do all day? Comprehensive evaluation of a full school day kindergarten. *Early Childhood Research Quarterly*, *12*, 459-480.
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- <sup>6</sup> National Institute of Child Health and Human Development, Early Child Care Research Network (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health*, *89*, 1072-1077.
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New topics in the series, *Children, Youth & Family Background*, include childhood obesity, foster care, early literacy, parent-teen relationships, and the trend among non-profit agencies to help support their missions by starting money-generating social enterprises.

The reports, originally produced to keep journalists and

policymakers up to date on children's issues, are available free of charge to anyone interested in learning about the latest developments in areas ranging from education and child development to child welfare and juvenile crime. These reports are written, edited, and reviewed by the University of Pittsburgh Office of Child Development.

All *Children, Youth & Family Background* reports are posted on the OCD website as portable document files (.pdf) for viewing and downloading at the following address: <http://www.education.pitt.edu/ocd/family/backgrounders.asp>.