

## University of Virginia Study Finds Teachers' Interactions with Children to be the Critical Ingredient for Effective Pre-K Programs

May 15, 2008 — States are investing considerable amounts of money into delivering high-quality pre-kindergarten programs for 4-year-olds to help prepare them to enter school ready to learn. A new national study, led by University of Virginia researcher Andrew J. Mashburn, finds that these programs will benefit children most when they experience instructionally and emotionally supportive interactions with their teachers. A paper on the findings of the study, which involved 2,439 children enrolled in 671 pre-k classrooms in 11 states, is in the just-released issue of the journal *Child Development*.

The quality of pre-K programs can be evaluated in three ways, Mashburn explained. One way is counting the number of minimum standards that a program meets regarding teacher, classroom and program characteristics. For example, a high quality program may be defined as one in which the teacher has at least a bachelor's degree and training in early childhood education, the classroom has 20 or fewer children, and the program uses a comprehensive curriculum. These are the definitions most often used by state legislatures when designing or authorizing spending for preschool. A second definition of high-quality preschool focuses on the overall quality of the classroom environment, including the quality of the space, furnishings, learning materials, activities and interactions commonly used. A third definition considers the quality of emotional and instructional interactions between teachers and children, it's this definition that has been extensively developed and studied by the U.Va. team and is now in use in many states as a result of the work.

"Every governor in the country is interested in expanding preschool options because they understand the research showing its value long-term," said Robert Pianta, dean of U.Va.'s Curry School of Education and director of the Center for Advanced Study of Teaching and Learning. "When these leaders go to their respective legislature to ask for funds, they buttress their arguments with assurances that programs will be of high quality. ... That's why we thought it so important to assess the ways that three different approaches to measuring quality, two of which are very commonly used in state policy, actually account for children's gains in achievement. The answer to this question is critical for children and critical for state policies that aim to support them."

"In this study, we asked how strongly each of these three ways to measure quality was associated with children's development during pre-K," Mashburn said. Children's academic, language and social skills were tested at the beginning and end of pre-K. Teachers and program administrators provided information about whether programs met nine minimum standards of quality recommended by professional



Andrew Mashburn  
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(Photo: Dan Addison)

### Additional Resources

- [Curry School of Education](#)

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organizations; and classroom observers rated the quality of the overall classroom environment and the quality of instructional and emotional interactions.

The study, part of the work of CASTL, found that the minimal standards and physical environment approaches to measuring quality were unrelated to children's learning. Rather, "We found that children developed greater academic and language skills in classrooms with higher-quality instructional interactions and greater social skills in classrooms with higher-quality emotional interactions," Mashburn said.

"High-quality instructional interactions occur when teachers provide children with feedback about their ideas, comment in ways that extend and expand their skills, and frequently use discussions and activities to promote complex thinking. For example, teachers who provide high instructional support ask "how" and "why" questions to children to explain their thinking, relate concepts to children's lives, and provide additional information to children to expand their understanding." Mashburn said.

High-quality emotional interactions include frequent displays of positive emotions and a teacher who is sensitive to children's needs, interests, motivations and points of view, he added. Teachers who provide high emotional support smile and laugh with children, are enthusiastic and provide comfort and assistance to children.

In contrast, pre-K teachers' level of education and field of study, class size and child-to-teacher ratio were not directly associated with children's academic, language and social development. However, these features of pre-K programs may benefit children if they improve the quality of emotional and instructional interactions that children experience.

According to Mashburn, senior research scientist at CASTL, these findings help parents, teachers and program administrators understand the specific features of pre-K programs that directly support children's academic, language and social development. Given that other studies have found that the quality of instructional and emotional interactions within classrooms is average at best, these results point to the importance of finding ways to improve teacher-child interactions within classrooms, he said. For example, teacher professional development programs and programs that monitor pre-K quality have the potential to directly improve the quality of instructional and emotional interactions, which in turn, improve children's development.

A full report of the study, "Measures of Classroom Quality in Pre-Kindergarten and Children's Development of Academic, Language and Social Skills," is available in the May/June issue of Child Development. In addition to Mashburn, other CASTL researchers for

this study were Robert C. Pianta, director and dean of the Curry School, and Bridget K. Hamre and Jason T. Downer, both senior research scientists. Other contributors were Oscar A. Barbarin, Donna Bryant, Margaret Burchinal and Diane M. Early from the FPG Child Development Institute at the University of North Carolina at Chapel Hill; and Carollee Howes of the University of California at Los Angeles.

The study was supported by the National Institute for Early Education Research, The Pew Charitable Trusts, the Foundation for Child Development and the U.S. Department of Education. It is part of the work being done through CASTL, whose mission is to improve educational outcomes through the empirical study of teaching, teacher quality and classroom experience from preschool through high school, with particular emphasis on the challenges posed by poverty, social or cultural isolation, or lack of community resources.

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