

Expanding School Readiness Gains in Prekindergarten

With growing public interest in children's success in kindergarten, more studies are examining prekindergarten (pre-k) classroom characteristics and their relationship to children's school readiness. These studies, for the most part, have focused on classroom environment characteristics associated with overall program quality, especially as measured by the Early Childhood Education Rating System (ECERS) and by the level of teachers' formal preparation. Recently, attention has moved to measuring teacher-child interactions, especially as assessed by the Classroom Assessment Scoring System (CLASS).

This study, however, took a different tack. *It focused on individual children and the type of activities with which they engage during their prekindergarten day* - what the researchers call "pattern of classroom engagement." Looking beyond the environment provided for learning and delving more deeply into activities occupying children's time, this study sought to examine the relationship between four different patterns of classroom engagement and children's later success on language, literacy, and mathematics school readiness indicators.

The study had two overarching purposes: (1) To assess the relationship between children's pattern of classroom engagement and their school readiness gains during the prekindergarten year and (2) To learn if some patterns of classroom engagement promoted greater school readiness gains for low-income children.

Delving Deeper into Classroom Dimensions Associated with School Readiness

About the study. Study participants were 2,751 children, enrolled in 701 pre-k classrooms in 11 states, who had participated in two previous studies: the National Center for Early Development and Learning's (NCEDL) Multi-State Study of Pre-Kindergarten and the NCEDL and National Institute for Early Education Research (NIEER) State-Wide Early Education Programs Study. Pre-k classrooms were located in public schools, Head Start settings, and community-based programs.

Using specialized statistical techniques, children were grouped into one of four patterns of classroom engagement commonly identified in the literature on early childhood education. While every child participated in each of the four activity types, the study found significant differences among children in the quantity of time spent in each of them. Here are the four patterns of classroom engagement studied:

1. During free choice play and exploration (free play), child-directed exploration of a rich array of activities chosen by the child is encouraged.
2. In individual instruction the teacher engages in direct, explicit instruction with a child. This instructional support typically involves large amounts of literacy instruction and high-quality teacher feedback.
3. Group instruction centers on the teacher providing explicit instructional support, too. It occurs in small or whole group settings, such as circle time, in contrast to individual interactions with a child.
4. Scaffolded learning occurs when teachers offer children contextually responsive comments that lift their thinking and performance to a higher level than would occur if assistance were not provided.

The information gathered. Individual children were classified as belonging to one of these four activity types or profiles based on the pattern of their classroom engagement. Each child-level profile was gathered through the *Emerging Academics Snapshot* (Snapshot). The Snapshot is a moment-by-moment observation measure that describes children's classroom experiences throughout the program day. Also assessed was each classroom's quality (environmental quality and teacher-child interactions). Beyond their two primary research objectives, researchers hoped to learn whether the Snapshot provided unique and helpful information beyond that collected by environmental rating scales - and it did, indicating the value-added of another measurement tool for studying prekindergarten classrooms.

Children's school readiness gains from fall to spring of their prekindergarten year were measured on a range of outcomes through direct assessments of language, literacy, and mathematics. To determine children's poverty status, information was obtained on whether a child's family lived below the federal poverty level. To further inform analysis of differences across school readiness gains, data were gathered on children's gender, ethnicity, household size, mothers' years of education, and children's age at the spring assessment.

Definitions

1. Free choice play and exploration: Child-directed exploration of a rich array of activities chosen by the child.
2. Individual instruction: The teacher engages a child in direct, explicit instruction involving literacy, high-quality teacher feedback, and teacher-led discussions.
3. Group instruction: The teacher provides explicit instructional support in a group setting.
4. Scaffolded learning: Teachers offer responsive comments that elevate children's thinking and performance.

What the Study Found

Three of the study's findings relay the importance of teacher intentionality in supporting school readiness outcomes, especially for low-income children. Four other findings add to our knowledge of children's day-to-day experiences in prekindergarten classrooms.

School readiness gains and different classroom engagement patterns

1. Children grouped in the free play activity profile made the smallest fall-to-spring gains across language, literacy, and mathematics compared to children in the two instructional profiles and the scaffolded learning profile. These children also showed less growth in writing their names and on number counting.
2. Individual instruction outperformed the other three patterns of child engagement in promoting children's abilities to comprehend the nature of a problem, identify relevant information, and perform simple calculations (i.e., applied problems).
3. Low-income children in the free play, group instruction, and scaffolded learning profiles made *smaller gains* than their nonpoor peers on letter-word identification, highest number counted, and applied problems. In the individual instruction profile, however, poor children made *greater gains* across all of these outcomes as compared to their nonpoor counterparts.

Additional findings on children's classroom engagement

1. Children spent the largest amount of time in free choice (30%) and whole group activities (27%). They spent the least amount of time in individual time with a teacher (7%).
2. Children spent an average of 45 minutes of their 2.5 hour prekindergarten day in free play. In contrast, less than 8 minutes a day were devoted to literacy activities of reading, letter-sound recognition, and being read to.
3. Children in the free play and scaffolded learning profiles tended to be somewhat more economically privileged than children who were more engaged in individual and group instruction. Notably, children grouped in the scaffolded learning profile spent a large proportion of time in free-choice activities, suggesting that free play, when accompanied by scaffolding interactions with teachers, may be important to fostering learning.
4. Children who spent more time in individual and group instruction were more likely to be Latino or African American than children who spent more time engaged in free play and scaffolded learning. Children who received more individual instruction also were more likely to be of lower income.

Results from this study suggest that more quality instructional time with teachers and less free play time without teacher guidance or scaffolding would better prepare children for entering kindergarten.

Linking Research to Practice

The literature on pre-k classroom quality has focused primarily on the arrangement of physical space and materials available to children for their exploration. This study's findings highlight that program quality can be assessed in a variety of ways. For example, pre-k classrooms may have a relatively high overall environmental rating score but have low levels of teacher-child interactions, and, as a result, may not be intentionally fostering children's school readiness. Especially for children from low income families, quality instructional time that promotes the skills needed for school success seems to be important.

These findings suggest:

- Teachers should give more attention to the amount of time children engage in various activity settings and in interaction with them, particularly as it relates to supporting their school readiness.
- While research indicates that free play and exploration can contribute to children's overall development and learning, by itself, too much free play and exploration can weaken children's preparation for kindergarten. Teachers attentive to children's school readiness become appropriately involved in children's free play by providing prompts to help them think more deeply about the content of their play, presenting questions that extend understanding and/or expand possibilities for concentrated exploration, and offering guidance that can steer children to new insights.
- To enter kindergarten better prepared, low income children may need instruction explicitly directed to developing their academic skills in language, literacy, and mathematics; this perhaps is less the case for middle-class children who typically are given opportunities to develop basic academic skills at home.

This edition of *NCRECE In Focus* was prepared by Stacie G. Goffin of the Goffin Strategy Group in consultation with the National Center for Research on Early Childhood Education, based on the paper noted below and supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305A060021 to the University of Virginia. The opinions expressed are those of the authors and do not represent views of the U.S. Department of Education. Readers should refer to the paper on which this *In Focus* is based for more information.

Chien, N.C., Howes, C., Burchinal, M., Pianta, R., Ritchie, S., Bryant, D., Clifford, R., Early, & D., Barbarin, O. (in press). Children's Classroom Engagement and Gains in Academic and Social-Emotional Outcomes across Pre-Kindergarten. *Child Development*.