POSTER SYMPOSIUM

The Preschool Curriculum Evaluation Research (PCER) Program: Cross-Site and Site Specific Findings

Co-Chairs: Caroline Ebanks, James Griffin
Discussants: Donna M. Bryant, Michael Lopez
Presenters: Laura Justice, Alice Wiggins, Jeff Priest, Leigh Zoellick, Prentice Starkey, Richard G. Lambert, Martha S. Abbott-Shim, Dale Farran, Mark W. Lipsey, Sean M. Hurley, Carol Bilbrey, Caroline Ebanks, James Griffin, Ina F. Wallace, Holly Rhodes, Randall Bender, Sarah Avellar, John M. Love

- **Impact of the Language-Focused Curriculum on Teacher and Child Language**
  Laura Justice, Alice Wiggins, Khara Pence, Angela Beckman

  (Summary not Available)

- **Observing the Interaction Among Classroom Ecology, Teacher Behavior, and Child Behavior in Head Start Classrooms Implementing an Experimental Early Literacy Curriculum**
  Jeff Priest, Leigh Zoellick

  (Summary not Available)

- **Enhancing Low-Income Children's School Readiness Through a Prekindergarten Mathematics Curriculum**
  Alice S. Klein, Prentice Starkey, Douglas H. Clements, Julie Samara

Many children from low-income or linguistic-minority families demonstrate significantly lower levels of mathematics achievement than children from higher-income and language majority backgrounds (Denton & West, 2002; Natriello, McDill, & Pallas, 1990). These achievement differences have roots in early childhood. Children from lower socioeconomic backgrounds possess less extensive mathematical knowledge than their peers from higher SES families (e.g. Starkey, Klein, & Wakeley, 2004) and enter elementary school less ready for a standards-based mathematics curriculum (Clements, Sarama, & DiBiase, 2004). The early SES-related gap in mathematical knowledge stems, at least in part, from the lower level of support for mathematical development that low-income children receive both at home and in preschool (Blevins-Knabe & Musin-Miller, 1996; Bryant, Lau, Burchinal, & Sparling, l994; Starkey & Klein, in press).

One way potentially to provide young children with high-quality mathematical experiences is by implementing an effective preschool mathematics curriculum. We developed and field tested the *Pre-K Mathematics Curriculum* (Klein & Starkey, 2002; Starkey & Klein, 2000; Starkey, Klein, & Wakeley, 2004) and *DLM Express* math software (Clements & Sarama, 2003) for this purpose. In the present study, Pre-K Mathematics and DLM Express were combined in one intervention that was implemented in preschool programs in two states.

Method

Participants and Design

Forty classrooms in Head Start and state-funded preschools in California and New York were randomly assigned to an intervention (math curriculum) or control (no math curriculum) condition. In each of two years, eight children from each classroom were randomly selected to participate for a total of 640 children across two years.

Intervention

The intervention included *Pre-K Mathematics Curriculum* (teacher-assisted small-group activities and parent-assisted home activities) and *DLM Express* (computer activities). Intervention teachers learned the intervention in workshops and on-site training and technical assistance. Formative evaluation of implementation was conducted to provide in-classroom training and to measure fidelity of implementation. The intervention was implemented over children's pre-kindergarten year. Overall fidelity scores of intervention teachers ranged from moderate to high in both Year 1 and Year 2 (slightly higher).

Assessment Procedures

Child math outcomes were assessed using the Child Math Assessment (CMA) (Starkey, Klein, & Wakeley, 2004) in fall and spring of the pre-kindergarten year. Teachers' math practices were observed, specifically the math content provided to children by teachers in their classrooms and the duration of teacher-participant math activities.

Results and Discussion

The principal objective of this study was to determine the impact of implementing a pre-kindergarten math curriculum on children's developing mathematical knowledge. CMA scores for intervention and control children were analyzed in a 2 (group) X 2 (time of test) mixed model ANOVA using a hierarchical model with children nested within classrooms. A significant Time X Group interaction ($p < .0001$) reflected a steeper rise in CMA scores across Year 1 for intervention children than for control children (effect size, $d = .55$). These findings were replicated in Year 2 ($p < .0001$) with an even greater effect size ($d = .77$) representing the influence of the curriculum. Thus, the intervention enhanced children's mathematical knowledge.

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- **The Effect of Creative Curriculum Training and Technical Assistance on Head Start Classroom Quality**
  Richard G. Lambert, Martha S. Abbott-Shim, Megan Anne O'Donnell, Jeni Kusherman

  (Summary not Available)

- **Implementation and Outcomes Through First Grade of a Literacy-Focused Curriculum Compared to a Developmental Curriculum in Rural Prekindergarten Classrooms**
  Dale Farran, Mark W. Lipsey, Sean M. Hurley, Carol Bilbrey

  (Summary not Available)

- **The Preschool Curriculum Evaluation Research Program: Findings and Lessons Learned From the Cross-Site Evaluation Study**
  Caroline Ebanks, James Griffin, Ina F. Wallace, Holly Rhodes, Jun Liu, Renate Houts, Randall Bender, Sarah Avellar, Steven Glazerman, Elizabeth Stuart, John M. Love, Susan Sprachman, Louisa Banks Tarullo

  (Summary not Available)