

School Readiness and Transition

Schooling Effects on Preschoolers' Literacy, Cognitive, and Self-Regulation Skills

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With the creation of universal state-funded pre-kindergarten (pre-K) programs and the increasing numbers of children attending preschool (54% of three- to five-year olds in 2003; Child Trends Databank, 2006), along with an increasing emphasis on the teaching of academic skills in preschool, we find it necessary to examine children's early learning environments in order to better understand how preschool may influence early self-regulation and cognitive development. We present findings from our longitudinal study of young children's learning that utilizes the school cut-off technique (Morrison, Griffin, & Frazier, 1996), which takes advantage of the arbitrary school cut-off dates for kindergarten entry. By selecting a sample of children with birthdates immediately before and after the cut-off date and controlling for any differences in background characteristics between the two groups of children, it is possible to separate age-related from schooling-related influences. Thus, our two research questions were: (1) How do children's self-regulation and cognitive skills change from the fall to the spring of the pre-kindergarten year? (2) To what extent is self-regulation and cognitive learning influenced by general developmental processes versus specific preschool or pre-kindergarten experiences? Participants included 76 four-year-old children ($M=3.86$ and 4.43 years in the fall and spring, respectively) with birthdates two months before or after the state kindergarten entry date of December 1st. The sample was divided into two sub-groups based on children's birthdates resulting in 46 young pre-kindergartners (birthdates before or on December 1) and 30 older preschoolers (birthdates after December 1). Propensity score matching (Rosenbaum & Rubin, 1983) was used to equate children in the old preschool and young pre-kindergarten groups on key background and classroom teacher characteristics. As expected, the only significant difference between the groups was the number of years in child care/preschool, with children in the young pre-kindergarten classrooms having 1.2 years more than the old preschoolers. Children's cognitive skills were assessed in the fall and spring using an alphabet identification task and the Woodcock-Johnson III Letter Word Identification, Picture Vocabulary, Academic Knowledge, and Applied Problems subtests (Woodcock & Mather, 2000). Children's self-regulation was assessed with the Head-to-toes Task, a direct observational measure for use with preschool children (Cameron et al., 2005). We used Hierarchical Linear Modeling (HLM version 6.01; Raudenbush, Bryk, & Congdon, 2005) to create a two-level model with children nested in classrooms. Preschool schooling effects (differences in fall scores) were found for alphabet naming, letter-word identification, applied problems, and academic knowledge, while pre-K schooling effects (differences in spring scores) were found for alphabet and letter-word academic knowledge. While children's scores increased from fall to spring, indicating growth in vocabulary and self-regulation skills, this growth is attributable to general developmental rather than specific schooling effects. Thus, even when controlling for beginning scores, early school experiences have varied and specific influences on children's learning. Together, these results have direct implications for preschool and pre-kindergarten curricula, including the increasing

emphasis on literacy learning prior to kindergarten entry and the need to address social/emotional development along with academic learning.

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Evidence for the Domain General Nature of Approaches to Learning in Head Start Children's School Readiness

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Approaches to learning is the least understood and researched readiness domain. It is also the most intriguing domain, since unlike the other school readiness domains, its components such as curiosity, persistence, cognitive inhibition and problem solving flexibility have been hypothesized to be domain general skills that are important in all readiness domains (Kagan et al., 1995).

Prior research offers evidence that approaches to learning may be malleable (Barnett, Bauer, Ehrhardt, Lentz, & Stollar, 1996; Engelmann, Granzin, & Severson, 1979; Stott, 1981). If components of approaches to learning are also domain general, as hypothesized, they become powerful factors that could serve as direct intervention components in programs such as Head Start, improving the school readiness of at-risk children in not only the approaches to learning domain, but in all readiness domains as well.

We used structural equation modeling (SEM) to test the domain general nature of approaches to learning components on school readiness in a sample of low-income preschool children served by Head Start (N = 196, M = 48.3 months, S.D. = 7.0). Along with direct measures of approaches to learning (tasks assessing persistence, problem solving flexibility, cognitive inhibition and curiosity) and teacher ratings of children's language, emergent literacy and early math development (Galileo School Readiness Assessment System, Bergan et al., 2003), a measure of I.Q. (Bracken Basic Concepts Scale-Revised, Bracken, 1998) was included in the SEM model to demonstrate the role of approaches to learning on school readiness, independent of general cognitive ability.

SEM was conducted using the statistical software program Mplus (Muthen & Muthen, 2004) to determine the best fit model for the data set. This best fit model showed the existence of a latent construct, approaches to learning (ATL), that predicts Head Start children's school readiness. The error variances of the latent construct ATL and the I.Q. measure (Bracken) are correlated. However, the effect of ATL on school readiness was direct, as the indirect path through the Bracken was not significant. Furthermore, as would be expected, the relationship between ATL and school readiness was unidirectional, with ATL contributing to school readiness. The path in the opposite direction was not significant.

Approaches to learning has been hypothesized to consist of a domain general set of skills that could potential impact all school readiness areas (Kagan et al., 1995). Since approaches to learning skills have also been shown to be malleable, explicit intervention activities targeting such skills as persistence, flexibility, cognitive inhibition and curiosity have great potential for increasing the school readiness of low-income children who are already at high risk for school failure. Data presented in this poster demonstrate the domain general nature of such skills in

impacting Head Start children's school readiness in critical academic areas. These skills impact school readiness directly and are not a proxy for general cognitive ability.

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Child, Preschool, and Family Predictors of Difficulty with the Transition to Kindergarten in a Rural Sample

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Policy-makers, practitioners, and researchers have an increased need for understanding the transition to kindergarten, particularly as preschools and elementary schools struggle to collaborate and prepare children for increasingly rigorous kindergarten experiences. Research in this area typically focuses on either children's early experience or children's attributes to predict difficulty in the transition to school. Work focusing on early experience considers parenting practices and preschool experience to which children have been exposed in predicting school success (e.g., Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; NICHD-ECCRN, 2003). Research examining child attributes considers the degree to which having a difficult temperament or self-regulatory problems leads to transition difficulty (Blair, 2002). There is a notable absence of work bridging these two areas of research. The present study examines the degree to which specific family and preschool experiences combine with child attributes to predict children's difficulty upon the transition to kindergarten. Three research questions that are critical to understanding kindergarten transition in a rural sample of children and families are addressed. First, how do parenting styles and preschool experience predict children's difficulty with transition to kindergarten? Second, how do child attributes (attentional focusing and inhibitory control) contribute to children's difficulty with the transition to kindergarten? Third, how do parenting styles moderate the relation between child attributes and the transition to kindergarten?

Thirty-one teachers at seven rural elementary schools participated. Teachers reported on approximately 3-5 children for a total of 120 children. Many children had sociodemographic risk factors, 63% came from families with low mother education, 53% from families with low income, and 21% from families with single parent status. A risk composite was created summing the presence (1) or absence (0) of each risk factor.

At kindergarten registration, families of children were recruited and completed several questionnaires. Information collected included the presence of family risk (e.g., mother education, family income, marital status, and children's preschool experience), parenting styles (lax, firm, harsh) and children's attributes (attentional focusing, inhibitory control). Teachers completed questionnaires about children's transition to kindergarten during the first four weeks of school.

Intraclass correlation values were low, indicating no need to treat data as nested. Stepwise regression analyses were computed. Three distinct findings emerged. First, children whose parents report a lax parenting style have more adjustment problems upon the transition to kindergarten, even after controlling for sociodemographic indicators of risk. Second, children low on inhibitory control showed more difficulty with the transition to kindergarten, but there was no relation between children's attentional focusing ability and transition difficulty. Third,

parenting does not appear to moderate the relation between child attributes and adjustment to formal schooling.

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What Do Empirical Data Tell Us About Early Childhood Transitions? Emerging Findings from the National Early Childhood Transition Center

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After 30 years of recommended strategies to facilitate transition to kindergarten for young children and their families, empirical evidence to support these strategies is strikingly slim. The U.S. Department of Education funded a large, multi-state, 5-year effort – the National Early Childhood Transition Center (NECTC) -- to develop a relevant conceptual model, catalog the existing evidence, conduct new research, note validated practices, and recommend new directions for research related to transition for children with disabilities, their families, and their programs and schools (Bronfenbrenner, 1979). Results from Years 1-3 are reported.

(1) Conceptual Framework. This timely new model builds on traditional work (e.g., Rosenkoetter, Hains, & Fowler, 1994; Rous & Hemmeter, 1994); recent research by Pianta et al. (e.g., Pianta & Cox, 1999); and emerging findings from the Center's new research. The framework, which drives the Center's research and dissemination efforts, has 2 parts. The first figure illustrates the ecological nature of successful transitions across early childhood support systems. The second figure demonstrates the critical interactions within that ecology among transition practices where most research has been concentrated, interagency variables, and transition outcomes.

(2) Review of Empirical Research on Transition. Thousands of articles and procedure manuals have addressed transition to preschool and/or kindergarten. NECTC gathered 723 journal articles in a database (<http://www.ihdi.uky.edu/nectc>). Only 52 articles shared empirical data and were found to be peer-reviewed. Each of the 52 was reviewed by at least 2 panelists from a group of noted researchers who used a project-developed 12-page review form backed by reliability checks and subsequent reviews by additional researchers to assure consistency in findings. Generally, reviewers described the transition topics studied as narrow and the quality of the research as poor. They found many gaps in the transition literature. A reference list of reviewed articles is provided.

(3) Survey of Preschool Teachers in the Public Schools. NECTC and authors of the National Center for Early Development and Learning (NCEDL) Transition to Kindergarten survey (Early, Pianta, & Taylor, 2001) modified that assessment of kindergarten practices to serve public school preschool teachers. A nationally representative sample of 10,000 public school preschool teachers received 51-item surveys. A total of 1,983 surveys were returned for a response rate of 24.9%. Ten (10) practices were identified as commonly used by preschool teachers across the country. As in the kindergarten study, preschool teachers reported few home visits, individualized meetings, or contact with parents prior to school. Barriers and facilitators to transition were identified, along with key skills to support a child's successful transition to preschool.

(4) Studies Underway. Finally, investigators present a list of current studies at the Center including a 4-year longitudinal study of 4 cohorts in 5 states, national surveys of prekindergarten service providers and interagency council members, results from 5 regional forums on transition issues of cultural/linguistic diversity and significant disabilities, findings from 19 focus groups on transition practices, critical incident reporting by participants, policy analyses of transition in 50 states, and in-depth analysis of policies in the 5 states where the longitudinal study is underway.

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