

Child-Centered Assessment of Approaches to Learning: Development and Validation of a Measure for Use in Preschool Child Care Classrooms

Project Team: Benjamin Brumley (Scholar), John Fantuzzo, Ph.D. (Mentor), University of Pennsylvania

Grant or Contract Number: 90YE0162

Period of Funding: September 2015 to September 2017

Project Description

Child care programs call for research that supports the healthy development and school readiness of children. *Approaches to Learning* is one of the five domains of early learning embraced by federal and state school readiness frameworks. Child care programs often use assessments that are completed by teachers, classroom aides, or professional support staff to monitor children's progress in school readiness domains and support children's learning (hereafter referred to as "teacher-report assessments"). However, widely-used traditional statistical techniques do not remove the variance associated with the teacher assessor of the child's functioning. Failure to differentiate this "assessor variance" from the child variance undermines a measure's ability to produce a truly child-centered assessment free of assessor variance. In addition, the only available teacher-report assessments of Approaches to Learning are too long for routine program use to monitor children's progress and guide classroom intervention. The proposed study will use advanced statistical methods to develop and validate a scientifically-based, practical teacher-report assessment of young children's Approaches to Learning for use in early child care classrooms.

The study will accomplish this goal through four objectives: (1) determine the amount of assessor variance in the Learning-to-Learn Scales (LTLS), the most highly developed multidimensional assessment of Approaches to Learning; (2) illustrate the psychometric advantages of removing assessor variance and focusing only on child variance to determine validity; (3) design and validate a shorter version of the LTLS based on child variance, and (4) disseminate research findings to policymakers, child care professionals, and parents to stimulate a discussion about purposeful assessment in early childhood and to determine ways to improve assessment for children from low-income households.

Research Questions

The objectives of the study will be accomplished through the following five guiding research questions:

1. How much assessor variance is in each item of the Learning-to-Learn Scales (LTLS) across multiple points in time?
2. What are the child-centered dimensions of the LTLS after removing the assessor variance from the assessment items?
3. How do the child-centered dimensions compare to the traditional dimensions in terms of the number of factors, the items that form these factors, and the strength of association between the items and the factors?
4. Do the child-centered dimensions evidence better concurrent and predictive validity for academic achievement than the traditional LTLS dimensions?
5. Can we develop and validate a shorter version of the LTLS assessment based on child variance that minimizes teacher response burden and can monitor children's growth across the school year?

Sample

Participants included 1,980 children across 80 Head Start preschool classrooms (McDermott et al., 2011; Fantuzzo et al., 2011). These 80 preschool classrooms were *randomly selected from over 250 preschool classrooms* operated by the School District of Philadelphia. These classrooms are comprised of a representative sample of Philadelphia's low-income preschool population, including students aged 35 to 69 months ($M = 43.3$, $SD = 6.8$), of which 51% were girls. Seventy-four percent of the children were Black/African American, 14% Hispanic/Latino, 5% White/Caucasian, and 7% mixed-race or other minorities. Approximately 12% of the sample identified as dual-language learners, and 10% demonstrated special needs. The 80 teachers in the study had 2 to 44 years of experience in teaching

($M = 15.7$, $SD = 10.2$), most of this being in a child care setting ($M = 9.7$, $SD = 8.3$).

Method

The proposed study involves secondary data analysis of a de-identified dataset gathered through a previous large-scale research project supported by the Interagency School Readiness Consortium (Administration for Children and Families; the Assistant Secretary for Planning and Evaluation; the U.S. Department of Education: Office of Special Education Programs; the Institute for Educational Sciences; and the National Institute of Child Health and Human Development). The larger project was the *Evidence-based Program for the Integration of Curricula (EPIC)*. It involved the development and validation of a comprehensive early childhood intervention designed for low-income preschool children served by the School District of Philadelphia (Fantuzzo, Gadsden, & McDermott, 2011). The current project will use data from the EPIC project to analyze the Learning-to-Learn Scales assessment of Approaches to Learning that was developed as part of this project.

Measures

Learning-to-Learn Scales (LTLS). The LTLS is a 55-item, three-point teacher rating instrument (McDermott et al., 2011). Seven specific dimensions and one general dimension of Approaches to Learning were identified through exploratory and confirmatory factor analytic methods. The scales for each of the seven dimensions and general dimension were scored using Item Response Theory to estimate the final scaled scores. All subscales were identified as being sensitive to growth across five months of the preschool academic year. These dimensions demonstrated substantial concurrent validity to academic subtests and explain nearly a quarter of academic ability in mathematics, alphabet knowledge,

vocabulary, and listening comprehension (McDermott et al., 2009). Subsequent multilevel modeling also revealed several subscales of the LTLS, including *Vocal Engagement in Learning*, *Sustained Focus in Learning*, *Strategic Planning and Interpersonal Responsiveness in Learning*, demonstrated predictive validity for the reduction in risk of future academic non-proficiency (McDermott et al., 2011).

Progress Update

We have completed all Year 1 analyses and have successfully addressed Research Questions 1 through 4. The findings were disseminated at the Cross-University Collaborative Mentoring Conference hosted at the University of Delaware and at the National Research Conference on Early Childhood in Washington, D.C. A brief, non-technical abstract of the research findings was created and shared with participants at the conferences. Interactions with researchers, practitioners, and policymakers benefited the current project by illustrating ways to connect this research to policy and practice. We are currently working on Research Question 5 (Year 2 Objectives): to develop and validate a shorter version of the LTLS assessment based on child variance that minimizes teacher response burden and can monitor children's growth across the school year.

For More Information

Web address for Penn Child Research Center:
<https://www2.gse.upenn.edu/child/home>

ERIC link for the Learning-to-Learn Scales:
<http://eric.ed.gov/?id=EJ914087>

Contact

Benjamin Brumley
University of Pennsylvania
704-806-8618
brumley@upenn.edu