The Early Math Initiative: Scaling an Innovative Intervention

to Prepare Children for Elementary School Mathematics

Absolute Priorities 1 and 3; Invitational Priorities 1 and 2

Abstract

The goals of our application for an EIR expansion grant are to (1) improve low-SES children's readiness for elementary school mathematics through use of our innovative *Pre-K Mathematics* intervention that is followed by strengthened math instruction in grade K, (2) remove barriers that impede scaling up the pre-K intervention to the national level, and (3) obtain empirical evidence on differential impacts among sub-groups and settings and, if present, identify variables related to differential impacts. An innovative intervention, *Pre-K Mathematics*, found to be effective in four gold-standard RCTs followed by an improved K math instructional system, will be implemented on the national level under rigorous conditions. This intervention has been found to meet the What Works Clearinghouse's highest standards of effectiveness. In an i3 validation project, the intervention increased low-SES children's math knowledge to a level equivalent to the national average in grade K. A purposive and random sampling design will create a national profile of high-need (low-income) children in public preschool programs. An experimental design will be used to assign classrooms to treatment and business-as-usual control conditions. A hierarchical linear modeling framework will be used to address research questions about the effects of the treatment on ECLS-B and ECLS-K: 2011 measures of child math outcomes. Classroom observations of teacher math practices will be conducted to determine whether the professional development we provide impacts teacher practices as found previously (ES=1.70), and, if so, whether the expected impacts mediate student learning. The project will serve 40,000 high-need students in public preschool programs in four multi-state regions of the United States. Research partners include SRI, ETS, evaluators from Columbia U., George Washington U., and Mathematica. Program partners include regional Head Start associations, local Head Start programs (including delegate agencies), public school districts, and charter preschools.