

**ZMATH 2011d.00285**

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**Mathematics learned by young children in an intervention based on learning trajectories: A large-scale cluster randomized trial.**

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Summary: This study employed a cluster randomized trial design to evaluate the effectiveness of a research-based intervention for improving the mathematics education of very young children. This intervention includes the Building Blocks mathematics curriculum, which is structured in research-based learning trajectories, and congruous professional development emphasizing teaching for understanding via learning trajectories and technology. A total of 42 schools serving low-resource communities were randomly selected and randomly assigned to 3 treatment groups using a randomized block design involving 1,375 preschoolers in 106 classrooms. Teachers implemented the intervention with adequate fidelity. Pre- to posttest scores revealed that the children in the Building Blocks group learned more mathematics than the children in the control group (effect size,  $g = 0.72$ ). Specific components of a measure of the quantity and quality of classroom mathematics environments and teaching partially mediated the treatment effect.

*Classification:* C71 C72

*Keywords:* curriculum; early childhood; early number learning; equity; diversity; geometry; instructional technology; preschool education; primary education; teaching effectiveness