

[Education Week's blogs](#) > Curriculum Matters

Researchers Promote Math Learning in Young Children

By [Erik Robelen](#) on January 28, 2010 5:50 PM

At a briefing yesterday on Capitol Hill, experts discussed a 2009 National Research Council [report](#) on the importance of mathematics learning in early childhood and some of the policy challenges in beefing up this area of young children's development.

The report, which *Education Week* [featured in a story](#) last summer, suggests that math is often neglected in early-learning settings, in contrast to the heavy emphasis typically placed on literacy.

"How much mathematics kids know when they enter kindergarten can predict how they're going to do in mathematics in high school," said Douglas H. Clements, a professor of learning and instruction at the State University of New York at Buffalo who served on the NRC committee that wrote the report. "It's incredibly important to have that foundation. However, a lot of present-day early-childhood programs don't develop much mathematics knowledge on the part of kids, and this is especially harmful to kids from low-resources communities."

Clements said that children have the potential to be "impressively competent" in math at a very young age.

"So the major policy implication of that is a coordinated national early-childhood education initiative should be put in place for kids from 3 to 6 years of age," he said at the Jan. 27 event, which was sponsored by the [National Council of Teachers of Mathematics](#) and the [National Academies](#), in conjunction with the House "STEM" Education Caucus. "This report provides guidance for implementing any such initiative."

But, as the experts were quick to note, this isn't exactly an easy task. It's hard enough to influence what goes on in K-12 schools. Early childhood is even tougher to penetrate, given the patchwork "system" in the United States.

"This is an incredibly difficult challenge," said Susan Bredekamp, the director of research for the Council for Early Childhood Professional Recognition in Washington, who also served on the panel that wrote the report. "There really isn't a coherent system where children obtain early-childhood experiences. There are so many different kinds of programs: family child-care homes, child-care centers, Head Start programs, public prekindergartens."

And many children still stay at home until kindergarten, she added.

One area with potential, however, Bredekamp said, was to influence the state standards for early learning that nearly every state has.

"Those standards influence the curriculum and instruction that goes on primarily in public prekindergarten programs, which are state funded," she said. "The current standards do not include much mathematics. There is an incredibly wide variation in the mathematics that they do include."

She noted that the federal Head Start program also has a set of "child-outcome frameworks" that could also be targeted as a means to help expand the reach of the report.

The researchers also pointed to the need for better curricular tools for early-learning providers, and increased professional development. Bredekamp noted that early-learning providers bring a wide variety of backgrounds to their work.

"We have everyone from the neighbor who is taking care of children who may or may not have a high school education to a teacher with a master's degree in a public prekindergarten program," she said.

But even teachers with degrees don't necessarily have preparation "in the kind of mathematics education we're talking about," she said.

Bredekamp recalled one recent discussion with early-learning providers that was telling.

"I was actually doing a talk with hundreds of early-childhood teachers, ... and the first question I got at the end of the presentation was, 'What's the base-10 number system?' " she said. "So we cannot make assumptions that people know this content or know how to teach it, and how it develops in young children."

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