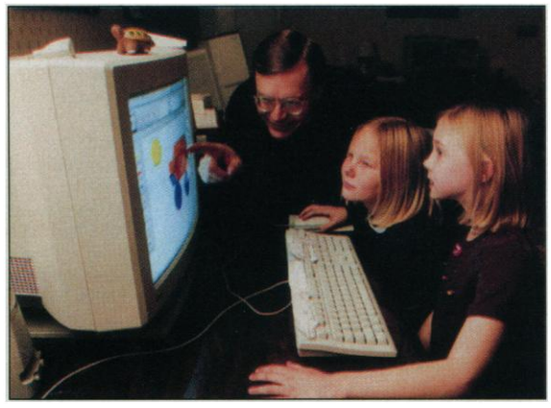
EDUCATION RESEARCH

Agencies Launch Effort To Improve U.S. Schools

The U.S. government has launched a multiyear research initiative to improve early math, science, and reading instruction and to expand the use of technology in schools. In addition to improving student achievement, the new Interagency Education Research Initiative (IERI) hopes to link researchers who use different approaches to understanding how children learn and to shorten the delay in implementing the latest research findings.

Announced last month, IERI is a unique collaboration of the National Science Foundation (NSF), the National Institutes of Health (NIH), and the Department of Education (ED). Although each agency already funds research on improving kindergarten to grade 12 education, they typically draw on separate pools of scientists from different disciplines. "This initiative brings together educators and scientists who, for many years, have been on parallel tracks," says Yale University pediatrician Sally Shaywitz, who co-directs an NIH-funded Learning Disability Research Center that combines classroom work and brain imaging to study and treat learning disabilities in young children. "The idea is to show that rigorous scientific principles can be applied to education research just as they are applied to cancer research."



Building blocks. SUNY Buffalo's Douglas Clements has designed software that allows second graders to manipulate geometric shapes and learn key mathematical concepts.

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Those lofty goals are backed by an impressive budget: $30 million this year, $50 million requested in 2000, and $75 million annually in 2001 and beyond. (The current request is divided between NSF and ED, while NIH made a belated bid for $25 million that didn't survive the White House budget process.) "This is a huge chunk of money for education research," says Alan Kraut, executive director of the American Psychological Society. "If they can put in $50 million or more every year, then the field is really going to take off."

IERI is the latest attempt to bolster U.S. education and reverse the poor performance of U.S. students in international comparisons. It's the direct result of a 1997 report by the President's Committee of Advisors on Science and Technology (PCAST), which recommended spending $1.5 billion over 5 years on technology to bolster learning. Although Congress shot down the Administration's initial request for $75 million, NSF cobbled together $22 million and ED put up $8 million from current-year funding. A workshop last fall helped the agencies come up with a research agenda that emphasizes three areas: preparing preschoolers for math and reading; math, science, and reading instruction in the primary grades; and training teachers in all grades. The initiative is on a fast track: Last month's announcement (NSF 99-84) sets a 15 May deadline for proposals, with the first round of winners to be picked by September.

The federal partners admit that melding their different priorities poses a challenge. NSF, for example, usually focuses on math and science but not reading; "this program has a reading component because of ED," says NSF's John Cherniavsky, who is temporarily overseeing the new initiative. Education department officials were concerned that the PCAST report "was too focused on technology," says Dick Venezky, on leave from the University of Delaware to help get IERI off the ground. "So we decided to focus on chronic education issues such as school readiness and teacher preparation, with technology as an aid." And Shaywitz's center is part of a network funded by NIH's National Institute of Child Health and Human Development (NICHD) that uses a medical model in working with children at risk for reading disabilities. "We run a $21 million a year program with 41 sites," says NICHD's Reid Lyon, "but we haven't worked with NSF and ED on early math and reading skills before this initiative." (Although his institute has not earmarked money for either 1999 or 2000, Lyon says NICHD will help review IERI proposals and may fund some that fit in with its overall mission.)

Officials are also wary of promising too much, too soon. "At one point we thought we'd be funding solutions," says Venezky. "But that's at least 5 years off. We probably know the most about readiness, thanks to Head Start and other programs. The quality of research on initial reading skills isn't as good. In early math, we have a good core of research, but not much in the way of large-scale interventions. And in staff development we're closer to ground zero, with almost no good theory about either preservice or midcareer training."

Even when existing programs generate scholarly knowledge, say researchers, too little finds its way into schools of education or the classroom. "It takes 10 years for [the latest research findings] to make it into teacher training programs," says Elena Bodrova of the Mid-Continental Regional Education Laboratory in Denver, who has developed a computerized aide to help teachers assess student literacy. Cherniavsky offers an even simpler bottom line. "If we really understood learning, why aren't we doing it better?" he asks. By linking academic researchers with classroom teachers, he says, "we want to see what changes can buy us in terms of improved student achievement, using technology as a tool."

Douglas Clements, an education professor at the State University of New York (SUNY), Buffalo, is already doing exactly that with an NSF-funded software project that fits the description of what IERI hopes to accomplish. "We want to mimic kids' activities in a way that reinforces the underlying mathematics in such skills as number counting and shape recognition," says Clements about Building Blocks, which teaches math concepts to children aged 4 to 7. With a lot of educational software, he says, "it's hard to find the math."

In reading, progress has been hampered by the ferocious debate between proponents of the whole word/reading in context approach and proponents of phonics, which emphasizes the sounds of individual letters and their alphabetic representation. The fireworks have left a residue of mistrust that could hinder progress. "It's interesting that NICHD hasn't put in any money," says Cathy Roller, director of research for the International Reading Association, which believes that Lyon has denigrated the whole-word approach and made exaggerated claims on behalf of phonics. "Still, it's better to have them at the table than sitting on the sidelines," adds Roller, whose organization is likely to apply for funding.

Even before the initiative makes its first awards, NSF's social and behavioral sciences directorate is priming the pump with a $1 million competition to support a series of meetings this summer aimed at stirring the intellectual pot. "There's an old saw that everybody thinks children's learning is important—except educators and developmental psychologists," quips Chuck Brainerd of the University of Arizona, Tucson, who hopes for NSF support to bring together 25 senior scientists in neuroscience, cognitive and developmental psychology, and educational disabilities for a 4-day meeting in August. "There's a real need to inject excitement and energy into the field of children's learning, and that's what NSF is trying to do," he says.

—JEFFREY MERVIS