

# Forging the New Education Knowledge Infrastructure

## From Research to Practice: Moving Beyond the Buzzwords

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This fall, more than 50 million children are enrolled in schools across the United States. They are taught using various curricula, programs, and instructional styles. While some of these instructional approaches are based on research, many are not. As one of us was recently asked, "Why is it that I can go to the doctor and receive a simple, research-based diagnosis on how to lower my cholesterol, yet when I ask my son's teachers to provide a research base for their recommendation on how to correct my boy's speech impediment, I get no clear answer?"

This concern illustrates an important question in American education: What is the appropriate role of education research in teaching and learning?

Answering this question and finding consensus on the role of research in educational decision-making has become a hot topic. To help address this issue, earlier this year our organizations held a forum entitled *Research in Education: On the Leading Edge of School Improvement?* This meeting was the first in a series of activities intended to help ensure that evidence-based practice in education moves beyond buzzwords to become business as usual. The forum explored some of the important questions that have arisen: How desirable is evidence-based practice in education? Is it feasible and realistic? And if so, how do we achieve it? Finally, why do educators and policy leaders frequently fail to utilize education research?

### *The Underutilization of Education Research*

In fields such as medicine, agriculture, computer sciences, economics, psychology, and even criminal justice, research is used to guide practitioners toward good results. This is not always the case in education.

- Those of us who are engaged in education or education policy know that teachers want to use instructional practices grounded in solid evidence of success. Unfortunately, teachers are neither trained nor encouraged to use research, even though it would benefit their students. Moreover, unlike a new medication that can be administered uniformly and

relatively easily, applying research findings to educational improvement is often complex. Teachers need professional development and other support to do it.

- Education is a difficult field for researchers. While basic scientific research methods are the same for all fields, the complexities of teaching and learning, as well as complicated ethical and practical considerations, make research in education challenging.
- Education research itself has long been under-funded by the federal government, state agencies, universities, and foundations. The investment in education research and development by the U.S. Department of Education is less than \$270 million. In 1997, a presidential commission reported that less than 0.1 percent of the total amount spent on education in the United States was invested in research. By contrast, the commission noted that 23 percent of the amount spent on prescription and non-prescription medication was invested in drug development and testing.

Despite these factors, several developments have occurred that bode well for a new era of “education knowledge” and utilization of empirically proven teaching methods in our schools.

The first is new federal legislation. The 2002 federal education law, the No Child Left Behind Act, mandates the use of “scientifically based” research in a variety of federal programs, especially those dealing with remedial reading, and makes knowledge gained from research and development a central driver of our national education goals. The U.S. Department of Education is now working vigorously to implement the law’s provisions, resulting in dramatically increased demands for a strong, education knowledge infrastructure that includes research, development, dissemination, technical assistance, professional development, evaluation, and other research-based applications. Additionally, in October, Congress approved the Education Sciences Reform Act of 2002, a key piece of legislation that further emphasizes and expands the role of education research and development in federal education policy.

The second development is the emergence of an education knowledge industry, made up of researchers, educational developers, service providers, and a rapidly increasing number of entrepreneurs. Together this group develops, disseminates, and implements educational policies, products, and services. While the industry is new, of mixed quality, fragmented, and still in the process of defining itself, its time has clearly come.

Finally, increased importance of education in the job market has led to growing public insistence on quality schools. Education remains a top priority for Americans, so parents, educators, business and community leaders, and policymakers want to see our children achieve and our schools improve. Our citizens want global competitiveness, domestic prosperity, and civic health. We can realize these goals only if we create success in every classroom. As we learn, such success will depend upon our application of research about teaching and learning.

### ***The Benefits of Research***

The many strengths of scientifically based educational practices have recently been outlined in numerous of publications, including the National Research Council’s report on *Scientific Research in Education* (<http://www.nap.edu/catalog/10236.html>). Science can yield reliable and replicable findings that build confidence in the effectiveness (or failure) of the many alternatives advocated or practiced in education. These findings should increase the willingness of

policymakers and educators to make required changes or stick with proven—albeit often difficult—reforms.

An emphasis on evidence over ideology should also end some of the ongoing fruitless debates that plague education and distract us from the goal of improvement. Since scientific knowledge is based on accepted methodologies and is constantly revised, there is room to improve or abandon practices as their worth is determined. This would help eliminate the misplaced search for “silver bullet” solutions.

### *The Next Steps*

What has to happen for evidence-based education practice and policy to become a reality? No simple or single change will suffice. We believe that, at minimum, the following will be required:

- Researchers will have to take a hard look at the methods they use and the subject of their studies in order to improve their rigor and relevance. By coordinating agendas, researchers can develop an appropriate mix of the foundational knowledge of basic research and the immediately usable findings of applied research. The release later this year of a report from the National Research Council’s Strategic Education Research Partnership should help in this regard.
- Higher education needs to create a career track that prepares researchers to conduct the needed long-term, rigorous studies and then rewards them for conducting quality work. Educators must also be better prepared to apply research-based school improvement techniques, though they do not necessarily need to be expert researchers.
- Educators—teachers, principals, and district and state education administrators—will have to learn, accept, and apply what “best evidence” demonstrates to be effective. The claim of professional autonomy has often been invoked as a shield to change in an era where accurate evidence leading to standards of practice was in short supply. However, as we increasingly develop well-established evidence, it is every educator’s professional duty to be guided by what research tells us works best to improve student performance.
- School boards and superintendents must work to create and support an environment that fosters evidence-based education. They will need to set and stick to policies that are based on evidence of what works, avoiding decisions guided by whims, personal agendas, and pet projects, or the promises of quick and easy improvement.
- Evidence-based education must be promoted at both the state and national levels. Too often in policymaking, evidence is used selectively, as a weapon instead of a guide, and too often ideological goals trump educational ones. Education policymakers should be held to a higher standard, where evidence-based policies triumph over temporary political gains and serve the long-term best interests of children. In addition, substantially greater public sector resources must be devoted to supporting education research of all types. The federal government needs to step up to the plate and support research if it expects states, school districts, and schools to increase use of research-based practices.

- Parents, business and community leaders, and the public must be informed about, engaged in, and support the process of implementing evidence-based practice.
- Journalists have to do a better job reporting on research-based education reforms. Not every claim made in education should be reported as equally valid, nor should every story focus on tension, opposition, horse-race statistics, or simple answers. Understandably, reporters—like scientists—should be skeptical, but doubt and controversy cannot be the only story.

We are encouraged that many organizations—spanning a wide range of views on education policy and practice—participated in our policy forum and have committed to moving forward. The U.S. Department of Education has also made a powerful commitment by establishing a “What Works Clearinghouse,” which began to operate this August (<http://w-w-c.org>). This resource will be valuable for practitioners seeking research-based educational strategies. Our organizations are pleased to aid this movement, putting aside party, ideology, and other preferences in the interest of finding out what really works best for our children. We call on others to do the same. The effort will be difficult, but the need is urgent and the time is now.

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