

## A Critical Missing Piece in American Education Policy

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As Congress moves to reauthorize No Child Left Behind, Head Start, and the Higher Education Act in coming months, we suggest it give top priority to supplying a key missing piece needed for future success: scientifically-valid knowledge about which educational practices are truly effective in improving educational outcomes.

Our nation has made very limited progress in raising K-12 reading, math, or science achievement since the 1970s, or in closing the achievement gap between minority and white students since the 1980s, according to government data on long-term educational trends. No Child Left Behind seeks to address this problem by setting goals for improved achievement, and holding schools and districts accountable for meeting these goals. Congressional reauthorization of the law is focusing on important improvements, such as setting more realistic goals, improving the way they are measured, and providing more resources to help schools meet them.

We suggest, however, that there is a missing piece that must be addressed if the other parts are to work, and which thus far has received little attention. If schools ask *how* they can produce the higher achievement mandated in the law – that is, which specific classroom curricula, teaching strategies, school reform programs, and teacher training models can get them there – the answer is that too little is known.

Specifically, the number of educational practices proven in rigorous studies – most notably, in “gold standard” randomized controlled trials – to produce sizeable, sustained improvements in academic achievement, graduation rates, or other important outcomes is very small or, in some areas of education, nonexistent. This leaves schools and districts with few research-proven strategies they can use to meet the law’s accountability requirements.

Unfortunately, the many unproven strategies often don’t work. We know this because when such strategies are rigorously evaluated, most of them – including those backed by expert opinion and less-rigorous studies – turn out to produce small or no improvement compared to schools’ usual practices. This year, for example, a large randomized controlled trial of 16 leading educational software products for teaching reading and math – including many award-winning products – found no difference in reading or math achievement between students using these products in their classrooms, and those who used other methods.

The good news is that rigorous studies have identified a *few* highly-effective practices, suggesting that a concerted effort to build the number of these proven practices, and spur their widespread use, could produce major improvements in American education. One example is Check and Connect – a dropout prevention program for at-risk high school students that assigns them a “monitor” (e.g., graduate student) who serves as a year-round mentor and service coordinator. This program has been shown highly effective in two high-quality randomized controlled trials, producing a 40 percent increase in students staying enrolled in or graduating from high school four years later.

The field of medicine also shows the potential of these trials to spark rapid progress. In contrast to education, where such trials are rare, in medicine approximately 10,000 randomized controlled trials are ongoing each year. On one hand, such trials have stunned the medical community by overturning widely-accepted practices, such as hormone replacement therapy for post-menopausal women (shown to increase the risk of stroke and heart disease and for many women), dietary fiber to prevent colon cancer (shown ineffective), and stents to open clogged arteries (shown no better than drugs for most heart patients).

On the other hand, such trials have provided the conclusive evidence of effectiveness for most of the major medical advances over the past 50 years. These include vaccines for polio, measles, and hepatitis B; effective treatments for hypertension and high cholesterol; and cancer treatments that have dramatically improved survival rates from leukemia, Hodgkin's disease, breast cancer, and many other cancers.

The upcoming reauthorization of No Child Left Behind and other major education laws offers an excellent opportunity to build similar knowledge about what works in education. For example, Congress could (i) allocate a small percentage of funds, in each major federal education program, for rigorous studies to determine which program practices are truly effective, and (ii) ask program funding recipients, as a condition of their funding, to participate in these studies. In these provisions, Congress should require the studies to adhere to the highest scientific standards, including a randomized controlled design wherever feasible, based on evidence that less-rigorous studies can sometimes produce erroneous conclusions. (Some draft reauthorization language now being circulated in Congress would instead lower the standard of evidence, which we believe is a step in the wrong direction.)

In the few areas where research-proven practices already exist – such as early reading, dropout prevention, and substance-abuse prevention – Congress could give program funding applicants strong incentives (such as a competitive priority) to adopt such practices and put them into widespread use.

Such efforts to increase the number of research-proven practices, and spur their widespread use, would require a very modest investment of government funds. Yet they could provide education officials and educators – for the first time – with the valid, actionable knowledge they need to improve educational and life outcomes for the students they serve.

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