

POLICY BRIEF

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Spurring Innovation Through Education: Four Ideas

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A nation's education system is a pillar of its economic strength and international competitiveness. The National Bureau of Economic Research analyzed data from 146 countries, collected between 1950 and 2010, and found that each year of additional average schooling attained by a population translates into at least a two percent increase in economic output. A 2007 World Bank policy research working paper reported similar results. Based on these findings, if the United States increased the average years of schooling completed by its adult population from the current 12 years to 13 years—that is, added one year of postsecondary education—our gross domestic product would rise by more than \$280 billion.

The story also can be told by focusing on the returns to education for individuals. The difference in income between Americans who complete high school and those who drop out after 10th grade exceeds 50 percent. Large income differentials extend throughout the continuum of education attainment, with a particularly huge gap occurring between an advanced degree and a four-year college degree.

Although education clearly pays, the education attainment of the nation's youth has largely stagnated, falling substantially behind that of countries with which we compete. In 1960, the United States led the world in the number of students who graduated from high school. Today young adults in many countries, including Estonia and Korea, exceed their U.S. counterparts in education attainment.

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Recommendations

America's economic productivity and competitiveness are grounded in education. Our public schools and our higher education institutions alike are falling behind those of other nations. Four policy proposals offer substantial promise for improving American education, are achievable and have low costs:

- Choose K-12 curriculum based on evidence of effectiveness.
- Evaluate teachers in ways that meaningfully differentiate levels of performance.
- Accredite online education providers so they can compete with traditional schools across district and state lines.
- Provide the public with information that will allow comparison of the labor market outcomes and price of individual postsecondary degree and certificate programs.

The problem of low education attainment is particularly salient among students from low-income and minority backgrounds. The graduation rate for minorities has been declining for 40 years, and majority/minority graduation rate differentials have not converged. Hispanic and black students earn four-year or higher degrees at less than half the rate of white students.

The economic future of the nation and the prospects of many of our citizens depend on returning the United States to the forefront of education attainment. Simply put, many more of our students need to finish high school and graduate from college.

At the same time, graduation standards for high school and college must be raised. Forty percent of college students take at least one remedial course to make up for deficiencies in their high school preparation, and a test of adult literacy recently given to a random sample of graduating seniors from four-year U.S. institutions found less than 40 percent to be proficient on prose and quantitative tasks.

Barriers to Innovation and Reform

Our present education system is structured in a way that discourages the innovation necessary for the United States to regain education leadership. K-12 education is delivered largely through a highly regulated public monopoly. Outputs such as high school graduation rates and student performance on standardized assessments are carefully measured and publicly available, but mechanisms that would allow these outputs to drive innovation and reform are missing or blocked. For example, many large urban districts and some states are now able to measure the effectiveness of individual teachers by assessing the annual academic growth of students in their classes. Huge differences in teacher effectiveness are evident, but collective bargaining agreements or state laws prevent most school district administrators from using that information in tenure or salary decisions.

Further complicating K-12 reform is the fact that

authority for education policy is broadly dispersed. Unlike countries with strong national ministries that can institute top-down reforms within the public sector, education policy and practice in the United States are set through a chaotic network of laws, relationships and funding streams connecting 16,000 independent school districts to school boards, mayors, and state and federal officials. The lack of central authority allows the worst characteristics of public monopolies to prevail—inefficiency, stasis and catering to interests of employees—without top-down systems’ offsetting advantage of being capable of quick and coordinated action.

The challenges to reforming higher education are different. The 6,000-plus U.S. postsecondary institutions have greater flexibility to innovate than do the public school districts—and a motive to do so, because many compete among themselves for students, faculty and resources. However, while output is carefully measured and publicly reported for public K-12 schools and districts, we have only the grossest measures of output for postsecondary institutions.

Even for something as straightforward as graduation rates, the best data we have at the institutional level are the proportion of full-time, first-time degree-seeking students who graduate within 150 percent of the normal time to degree completion. Data on critical outputs, including labor market returns and student learning, are missing entirely. In the absence of information on issues that really matter, postsecondary institutions compete and innovate on dimensions that are peripheral to their productivity, such as the winning records of their sports teams, the attractiveness of their grounds and buildings, and their ratio of acceptances to applications. Far more information is available to consumers in the market for a used car than for a college education. This information vacuum undermines productive innovation.

Examining Two Popular Reforms

Many education reformers across the political spectrum agree on two structural and governance reforms: expanding the public charter school sector at the expense of traditional public schools and setting national standards for what students should know. Ironically, the evidence supporting each of these reforms is weak at best.

Charter schools are publicly funded schools outside the traditional public school system that operate with considerable autonomy in staffing, curriculum and practices. The Obama administration has pushed to expand charter schools by eliminating states that don’t permit charters, or capping them, from competition for \$4.35 billion in Race to the Top funding. Both President Obama and Education Secretary Arne Duncan have proposed shuttering poorly performing traditional public schools and replacing them with charters.

What does research say about charter schools’ effects on academic outcomes? Large studies that control for student background generally find very small differences in student achievement between the two types of public schools. For example, on the 2005 National Assessment of Educational Progress (the “Nation’s Report Card”), white, black and Hispanic fourth graders in charter schools performed equivalently to fourth-graders with similar racial and ethnic backgrounds in traditional public schools. Positive findings do emerge from recent studies of oversubscribed New York and Boston area charter schools, which use lotteries to determine admission. But these results are obtained from children whose parents push to get them into the most popular charter schools in two urban areas with dynamic and innovative charter entrepreneurs.

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What about common standards? Based on the belief that high content standards for what students should know and be able to do are essential elements of reform and that national standards are superior to individual state standards, the Common Core State Standards Initiative has signed up 48 states and 3 territories to develop a common core of state standards in English-language arts and mathematics for grades K-12. The administration has praised this joint effort by the National Governors Association and Council of Chief State School Officers, made participation in it a prerequisite for Race to the Top funding, and set aside \$350 million in American Recovery and Reinvestment Act funding to develop ways to assess schools' performance in meeting common core standards.

Does research support this approach? The Brown Center on Education Policy at Brookings examined the relationship between student achievement outcomes in mathematics at the state level and ratings of the quality of state content standards in math. There was no association. Some states with strong standards produce high-achieving students, such as Massachusetts, while other states with strong standards languish near the bottom in terms of achievement, such as California. Some states with weak standards boast high levels of achievement, such as New Jersey, while others with weak standards experience low levels of achievement, such as Tennessee.

Four Ideas

For every complex problem there is one solution which is simple, neat, and wrong. — H. L. Mencken

I will avoid Mencken's approbation by proposing four solutions rather than one. Although education has far too many moving parts to be dramatically reformed by any short list of simple actions, we can start with changes that are straightforward, ripe for action and most promising, based on research and past experience.

Link K-12 Curricula to Comparative Effectiveness

Little attention has been paid to choice of curriculum as a driver of student achievement. Yet the evidence for large curriculum effects is persuasive. Consider a recent study of first-grade math curricula, reported by the National Center for Education Evaluation and Regional Assistance in February 2009. The researchers randomly matched schools with one of four widely used curricula. Two curricula were clear winners, generating three months' more learning over a nine-month school year than the other two. This is a big effect on achievement, and it is essentially free because the more effective curricula cost no more than the others.

The federal government should fund many more comparative effectiveness trials of curricula, and schools using federal funds to support the education of disadvantaged students should be required to use evidence of effectiveness in the choice of curriculum materials. The Obama administration supports comparative effectiveness research in health care. It is no less important in education.

Evaluate Teachers Meaningfully

Good education outcomes for students depend on good teachers. If we have no valid and reliable system in place to identify who is good, we cannot hope to create substantial improvements in the quality of the teacher workforce.

A substantial body of high-quality research demonstrates that teachers vary substantially in effectiveness, with dramatic consequences for student learning. To increase academic achievement overall and address racial, ethnic and socioeconomic achievement gaps, we must enhance the quality of the teacher workforce and provide children from poor and minority backgrounds with equitable access to the best teachers.

Despite strong empirical evidence for differences

in teacher performance—as well as intuitive appeal, demonstrated when we remember our own best and worst teachers—the vast majority of public school teachers in America face no meaningful evaluation of on-the-job performance. A recent survey of thousands of teachers and administrators, spanning 12 districts in four states, revealed that none of the districts' formal evaluation processes differentiated meaningfully among levels of teaching effectiveness, according to a 2009 report published by The New Teacher Project. In districts using binary ratings, more than 99 percent of teachers were rated satisfactory. In districts using a broader range of ratings, 94 percent of teachers received one of the top two ratings, and less than one percent were rated unsatisfactory. In most school districts, virtually all probationary teachers receive tenure—98 percent in Los Angeles, for example—and very small numbers of tenured teachers are ever dismissed for poor performance.

Conditions of employment should be restructured to recruit and select more promising teachers, provide opportunities for them to realize their potential, keep the very best teachers in the profession, and motivate them to serve in locations where students have the highest needs. The precondition for these changes is a valid system of evaluating teachers.

The federal government should require school districts to evaluate teachers meaningfully, as a condition of federal aid. Washington also should provide extra support to districts that pay substantially higher salaries to teachers demonstrating persistently high effectiveness and serving in high-needs schools. But, because many technical issues in the evaluation of on-the-job performance of teachers are unresolved, the federal government should refrain, at least for now, from mandating specific evaluation components or designs. The essential element is meaningful differentiation—that is, a substantial spread of performance outcomes.

Accredit Online Education Providers

Traditional forms of schooling are labor-intensive and offer few economies of scale. To the extent that financial resources are critical to education outcomes, the only way to improve the U.S. education system in its current configuration is to spend more. Yet we currently spend more per student on education than any other country in the world, and the appetite for ever-increasing levels of expenditure has been dampened by changing demographics and ballooning government deficits. The monies that can be reasonably anticipated in the next decade or two will hardly be enough to forestall erosion in the quality of the system, as currently designed. The game changer for education productivity will have to be technology, which can both cut labor costs and introduce competitive pressures.

Already, at the college level, online education (also termed “virtual education” or “distance learning”) is proving competitive with the classroom experience. Nearly 3.5 million students in 2006—about 20 percent of all students in post-secondary schools and twice the number five years previously—were taking at least one course online, according to a 2007 report published by the Sloan Consortium.

In K-12, online education is developing much more slowly. But, the case for online K-12 education is strong—and linked to cost control. A survey reported on page one of *Education Week* (March 18, 2009) found the average per-pupil cost of 20 virtual schools in 14 states to be about half the national average for a traditional public school.

Local and state control of access to virtual schooling impedes the growth of high-quality online education and the competitive pressure it contributes to traditional schooling. Development costs are very high for virtual courseware that takes full advantage of the newest technologies and advances in cognitive science and instruc-

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(October 2009)



REUTERS/ADAM HUNGER

Students at Lilla G. Frederick Pilot Middle School in Massachusetts

tion—much higher than the costs for traditional textbooks and instructional materials. These development costs can only be rationalized if the potential market for the resulting product is large. But, states and local school districts now are able to determine whether an online program is acceptable. The bureaucracy that may be most disrupted by the introduction of virtual education acts as gatekeeper.

To overcome this challenge, K-12 virtual public education would benefit from the model of accreditation used in higher education. Colleges and universities are accredited by regional or national bodies recognized by the federal government. Such accrediting bodies as the New England Association of Schools and Colleges and the Accrediting Council for Independent Colleges and Schools are membership organizations that determine their own standards within broad federal guidelines. Once an institution is accredited, students residing anywhere can take its courses, often with the benefit of federal and state student aid.

Federal legislation to apply this accreditation model to online K-12 education could transform public education, especially if the legislation also required school districts to cover the reasonable costs of online courses for students in persistently low-performing schools. This approach would exploit—and enhance—U.S. advantages in information technology. We are unlikely to regain the international lead in education by investing more in business as usual; but we could leapfrog over other countries by building new, technology-intensive education systems.

Link Postsecondary Programs to Labor Market Outcomes

On a per-student basis, the United States spends two and one-half times the developed countries’ average on postsecondary education. Although our elite research universities remain remarkable engines of innovation and are the envy of the world, our postsecondary education system in general is faltering. The United States used to lead the world in higher education attainment, but,

according to 2009 OECD data, is now ranked 12th among developed countries. We have become a high-cost provider of mediocre outcomes.

Critical to addressing this problem is better information on the performance of our postsecondary institutions. As the U.S. Secretary of Education's Commission on the Future of Higher Education concluded in 2006:

Our complex, decentralized postsecondary education system has no comprehensive strategy, particularly for undergraduate programs, to provide either adequate internal accountability systems or effective public information. Too many decisions about higher education—from those made by policymakers to those made by students and families—rely heavily on reputation and rankings derived to a large extent from inputs such as financial resources rather than outcomes. Better data about real performance and lifelong working and learning ability is absolutely essential if we are to meet national needs and improve institutional performance.

Ideally, this information would be available in comparable forms for all institutions through a national system of data collection. However, achieving consensus on the desirability of a national database of student records has proved politically contentious. One of the issues is privacy of information. More powerful is the opposition of some postsecondary institutions that apparently seek to avoid accountability for their performance.

The way forward is for Congress to authorize, and fund at the state level, data systems that follow individual students through their postsecondary careers into the labor market. The standards for such state systems could be recommended at the federal level or by national organizations, to maxi-

mize comparability and eventual interoperability.

The public face of such a system at the state level would be a website allowing prospective students and parents to compare degree and certificate programs within and across institutions on diverse outcomes, with corresponding information on price. At a minimum, the outcomes would include graduation rates, employment rates and average annual earnings five years after graduation. Outcomes would be reported at the individual program level, such as the B.S. program in chemical engineering at the University of Houston. Price could be reported in three ways: advertised tuition, average tuition for new students for the previous two years, and average tuition for new students for the previous two years net of institutional and state grants for students eligible for federally subsidized student loans. These different forms of price information are necessary because institutions frequently discount their advertised price, particularly for low-income students. Students and families need information about discounts in order to shop on the basis of price.

Many states, such as Washington, already have data that would allow the creation of such college search sites, at least for their public institutions. The primary impediment to progress is the federal Family Educational Rights and Privacy Act (FERPA), which makes it very difficult for postsecondary institutions to share data on individual students with state agencies, such as the tax division or unemployment insurance office, in order to match students with information on post-graduation employment and wages. Congress should amend FERPA to allow such data exchanges among state agencies while maintaining restrictions on release of personally identifiable information. To address privacy concerns, Congress also should impose substantial penalties for the public release of personally identifiable information; FERPA currently is toothless.

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Creating a higher education marketplace that is vibrant with transparent and valid information on performance and price would be a powerful driver of reform and innovation. Easily addressed concerns about the privacy of student records and political opposition from institutions that do not want their performance exposed to the public have stood in the way of this critical reform for too long.

America’s economic future depends on returning the United States to the forefront of education attainment. Simply put, many more of our students need to finish high school and graduate from college. Investments in improved data, along with structural reforms and innovation, can help restore our leadership in educational attainment and increase economic growth. ■

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