Endangering Prosperity:  
A Global View of the American School  
Eric A. Hanushek, Paul E. Peterson, and Ludger Woessmann

The Link Between Education and Prosperity  
Data from 50 countries over half a century reveal how even modest education gains can yield a big economic payoff

Americans are aware of public education’s many failures—the elevated high-school dropout rates, the need for remedial work among entering college students. One metric in particular stands out: Only 32% of U.S. high school students are proficient in math on the National Assessment of Educational Progress (NAEP). When the results are put on the scale of the Program for International Student Assessment (PISA), the world’s best source of information on student achievement, the comparable proficiency rates in math are 45% in Germany, 49% in Canada, and 63% in Singapore, the highest-performing independent nation.

According to our calculations, raising student test scores in this country up to the level in Canada would dramatically increase economic growth. We estimate that the additional growth dividend has a present value of $77 trillion over the next 80 years.

Continued on page 2
This is equivalent to adding an average 20% to the paycheck of every worker for every year of work over this time period.

Where do such astronomical numbers come from? Students of human capital have long known that a country’s growth rate is connected to the skills of the workers. And it has recently become apparent from our analysis of differences in growth rates among countries between 1960 and 2009 that the skills that count are reliably measured by standardized tests of math and science, such as PISA and NAEP.

How can U.S. student achievement be boosted? Notably, the average number of years students are in school has little impact on economic growth, once student test-score performance is taken into account. If you aren’t learning anything at your desk, it doesn’t matter how long you sit there.

Nor is more money the answer. The U.S. spends on average $12,000 per pupil in grades K–12, one of the highest amounts in the world. Among U.S. states, increments in spending per pupil between 1990 and 2010 show no correlation with changes in student performance.

Expensive but ineffective policies such as class size reduction, while valued by current school personnel, have not raised achievement. Better accountability, more school choice, and market-based teacher compensation and retention policies can, on the other hand, boost achievement without adding materially to school costs.

The use of private school vouchers in Louisiana has had some positive effects on racial integration in the state, says an article published in Education Next by Anna J. Egalite and Jonathan N. Mills.

The article comes after the U.S. Department of Justice has filed a lawsuit against the state seeking to stop vouchers from being used in districts where desegregation orders are still in effect. The Department of Justice alleges that the voucher program interferes with racial integration efforts in those districts.

Of the sample set used by the study, 83% of the schools that students used vouchers to transfer out of experienced an improvement in racial integration. Looking at the schools that such students transferred into, the transfers were split almost equally between having a positive and negative impact on racial integration.

The study measures a student’s move to another school as integration-improving if the child’s transfer brings the school’s racial composition closer to that of the surrounding community. (For purposes of comparison, the authors use something called the Core-Based Statistical Area, a wide swath of geography from which a school might reasonably expect to draw students.)

When the study looked specifically at those districts still under desegregation orders, it found that for the schools that students transferred out of, 74% of the moves improved integration. In the schools where the students transferred into, about 56% of the moves improved racial integration.

“...the statewide school voucher program appears to have brought greater integration to Louisiana’s public schools.”

Anna J. Egalite and Jonathan N. Mills,
University of Arkansas
Teachers Versus the Public
What Americans Think About Schools and How to Fix Them
Paul E. Peterson, Michael Henderson, and Martin R. West

This book offers the first systematic comparison of the education policy views of nationally representative samples of both teachers and the public as a whole. The authors find a deep, broad divide between the opinions held by citizens and by those who teach in the public schools. The teacher-public gap is widest on such issues as merit pay, performance-based tenure policy, impact of teacher unions, school vouchers, charter schools, and requirements to test students annually.

The authors also provide the first experimental study of public and teacher opinion. Using a recently developed research strategy, they ask differently worded questions about the same topic to randomly chosen segments of representative groups of citizens. This approach allows them to identify the impact on public opinion of new information on issues such as student performance and school expenditures in each respondent’s community.

As the accompanying figure shows, public support for school vouchers for all students increases sharply when people are informed of the national ranking of student performance in their local school district. Support for charter schools and parent trigger laws also increases when the public learns the truth about local student performance.

On most issues, teacher opinion does not change nearly as much as it does for the public as a whole. In fact, the large gap between what teachers and the public think about school reform grows even wider when both teachers and the public are given more information about current school performance, current expenditure levels, and current teacher pay. These—and many other findings—are interpreted in a work that draws upon seven surveys conducted annually between 2007 and 2013. The end result provides a comprehensive exploration of 21st-century school politics.

Support for Universal Vouchers Up, Targeted Vouchers Down

**Question (Universal Vouchers):** A proposal has been made that would give families with children in public schools a wider choice, by allowing them to enroll their children in private schools instead, with government helping to pay the tuition. Would you favor or oppose this proposal?

**Question (Targeted Vouchers):** A proposal has been made that would use government funds to pay the tuition of low-income students who choose to attend private schools. Would you favor or oppose this proposal?
The Global Debt Crisis
Haunting U.S. and European Federalism
Paul E. Peterson and Daniel Nadler, Editors

“The brilliant advance on the central peril of modern democracy. Peterson and Nadler and their colleagues show, in lucid detail, that the American and European debt crises grew from within our federal systems of layered sovereignty—and that the way out requires strengthening, not weakening, our federal structures. Readers will learn how federalism and financial markets can fortify democratic accountability at every level, and how centralizing debt can jeopardize both solvency and democracy. This is first-rate scholarship with political punch.”

Christopher DeMuth
Former President, American Enterprise Institute

When Math and Science Teachers Leave, They Earn More

The urgency of improving American students’ skills in math and science is hardly in dispute. Performance in these subjects is increasingly critical to individual and national economic success, yet far too few of our students graduate from high school equipped for postsecondary work in technical fields.

Unfortunately, the same labor-market trends that have made math and science skills increasingly valuable to students may make it increasingly difficult to attract teachers with the talent and training necessary to address the challenge. Despite a recent wave of reform, the vast majority of school districts nationwide continue to pay teachers based on salary schedules that fail to differentiate among teachers based on their subject-area expertise. To the extent that teachers with technical skills have better earnings opportunities in other industries, this approach can be expected to produce fewer — perhaps even a shortage — of qualified candidates for math and science teaching jobs.

To shed new light on this question, my Brookings colleague Matthew Chingos and I used a unique administrative database to follow the careers of almost 32,000 high-school teachers employed by Florida public schools between the 2001–02 and 2006–07 school years, roughly 3,500 of whom left teaching for a new job in the state during that time.

The accompanying figure compares the earnings of math and science teachers to those of English teachers for the same group of teachers before and after they left the classroom. Among those who left teaching for jobs in other industries, math and science teachers earned 15% and 12% more, respectively, than did former English teachers after leaving. While they were teaching, these same math and science teachers earned hardly any more than English teachers.

By not allowing teacher compensation to vary with outside earnings opportunities, we implicitly ask individuals with strong math and science skills to make a larger financial sacrifice to enter and remain in the profession.

—Martin R. West, PEPG deputy director.
Blog posted on educationnext.org, April 19, 2013.
He is an associate professor at the Harvard Graduate School of Education.

<table>
<thead>
<tr>
<th>Earning Power</th>
<th>Percentage difference in salaries math/science and English teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Math</td>
<td>15.0</td>
</tr>
<tr>
<td>Science</td>
<td>11.8</td>
</tr>
<tr>
<td>As teachers</td>
<td>2.1</td>
</tr>
<tr>
<td>After leaving teaching</td>
<td>1.3</td>
</tr>
</tbody>
</table>
The PEPG Colloquia Series invites top scholars and leading practitioners from across the country to present their research findings and policy insights to faculty, students, and the public at large. In 2013, the presentations spurred conversations about school accountability, teacher pensions, and other contemporary issues.

David Vitale, chair of the Chicago Board of Education, reported that the school board was able to introduce measures to allow the dismissal of low-performing teachers.

Incoming Massachusetts Secretary of Education Matthew Malone spoke of his conversations with students across the state. Shocked to learn that many students were unhappy with their high-school experience, he urged strong measures to lower dropout rates.

David Deming, Harvard Graduate School of Education, found that students in Texas high schools, when subjected to accountability requirements, were more likely to attend college and complete a four-year degree.

Speaking a few days before the Boston mayoral election, John McDonough, interim superintendent of Boston Public Schools, explained to the audience that severe financial deficits would be the first challenge a new mayor would confront.

Using experimental data, Hanley Chiang, senior researcher at Mathematica Policy Research, reported that new results show new Teach For America teachers outperformed experienced, certified public-school teachers.

Benedikt Siegler, PEPG visiting doctoral fellow, reported that Florida schools improved when faced with competition induced by a public-school choice program.
Much of the current research on charter schools focuses on their impact on student performance on math and reading tests. Several major studies using state-of-the-art techniques have identified substantial impacts on achievement of “no excuses” charters in urban areas. The studies compare students who were randomly selected to attend charter schools with those who failed to win the lottery and attended district schools instead. Other research, such as the nationwide study by CREDO, has found a more mixed pattern of results, with average effects on achievement no better than those of district-operated schools. Although the research design is not experimental, the breadth of the schools studied has called attention to quality issues in the charter sector.

While both sets of studies provide useful information about the overall quality of charter schools, practitioners still express frustration about not having evidence to inform their most pressing questions. Though charter schools in theory could be a hotbed for research on a wide range of practice-oriented topics, research of this sort is still relatively rare, and findings from research often fail to make their way into practitioners’ hands.

In order to address these challenges, a group of researchers and practitioners came together on October 18, 2013, in a conference convened by PEPG and the National Alliance for Public Charter Schools. Researchers presented recent work on a range of topics, including charter school effectiveness, the practices of high-performing charter schools, the measurement and fostering of noncognitive student outcomes, and the policy and governance arrangements that appear to foster high-quality schools. Practitioners on the panels then commented on these findings, with participants joining in to discuss the research needed to advance field knowledge to the next level. Breakout sessions enabled practitioners and researchers to delve more deeply into specific topics, such as human capital, technology, and noncognitive skills.

Conferrees identified four big questions that future research needs to address:

- What are charter schools’ effects on specific subpopulations, on outcomes other than test scores, and in different contexts?
- What are the ingredients of successful charter schools’ “secret sauces”?
- What factors would help great charter schools expand while maintaining quality?
- What aspects of governance, policy, and authorizer practice produce high-quality charter schools?

In 16 school districts, charter schools have at least a 25% market share.
A Double Dose of Algebra
Kalena Cortes, Joshua Goodman, and Takako Nomi

Double-dose of algebra lifts college entrance exam scores, high-school graduation rates, and college enrollment rates.

The School Administrator Payoff from Teacher Pensions
Cory Koedel, Shawn Ni, and Michael Podgursky

The “stewards” of the system benefit the most.
With such high personal stakes, there is no reason to expect public school administrators to support pension reform.

The Softer Side of “No Excuses”
Alexandra Boyd, Robert Maranto, and Caleb Rose

Schools that begin by establishing a culture of strict discipline in neighborhoods where violence and disorder are widespread ease off once a safe, tolerant learning environment is secured.

Online Learning in Higher Education
William G. Bowen, Matthew M. Chingos, Kelly A. Lack, and Thomas I. Nygren

Final exam performances were similar for students learning online and classroom students. However, students spent 1.7 fewer hours each week in total time when taking the course online, a difference of 25%.