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COMMENTARY

Why the U.S. Results on PISA Matter

By **Eric A. Hanushek**

In 2012, 65 nations and education systems participated in **the Program for International Student Assessment**. These tests, covering mathematics, science, and reading, provide direct international comparisons of skills. Sadly for our nation, the recently released **results** are sobering.

According to PISA, the United States placed significantly below the average for member-nations in the Organization for Economic Cooperation and Development for mathematics—and significantly worse than the OECD distribution at both ends of the assessment spectrum, with more low performers and fewer high performers.

The U.S. math performance is not statistically different from that of Norway, Portugal, Italy, Spain, the Russian Federation, the Slovak Republic, Lithuania, Sweden, and Hungary—not the most sought-after group of countries for comparison's sake.

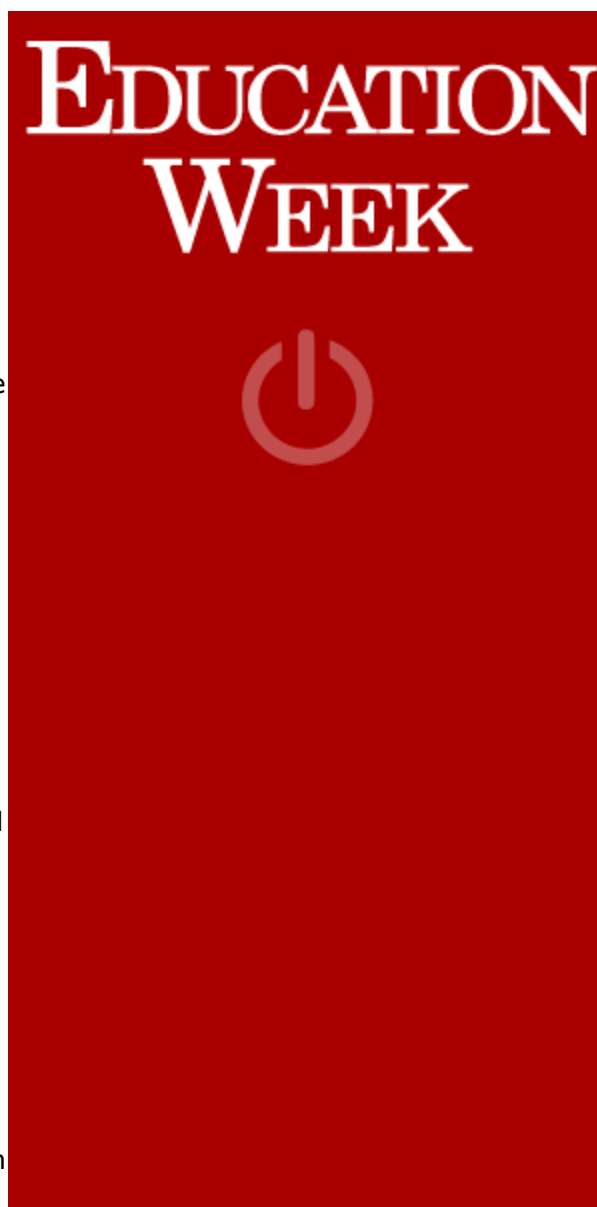
More disturbing, U.S. students' scores have been stagnant for the past decade. Since 2003, the United States has made virtually no gains, even as a range of countries made substantial ones.

The most rapid PISA gains were made in very low-performing countries, such as Qatar and Kazakhstan. Yet some higher-performing nations also made substantial advances: Israel, Singapore, Italy, Poland, and Germany. Poland, for example, steadily improved over the past decade and now ranks eighth within the OECD (14th among all 65 participating countries or education systems).

In the simplest terms, even among high-performing countries, change for the better is possible.

A number of commentators have tried to counsel ignoring the results, and their misleading

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arguments—*These test scores really do not matter*—warrant correction.

- **Criticism One:** *We have a strong economy; in other words, we are not being pulled down by our schools.*

Indeed, we have had strong growth over the 30 years since *A Nation at Risk* first warned that schools were endangering our economy. But we also have the world's best economic system and institutions, and this has protected us from the deficiencies of our schools. It is also likely that we will not be so sheltered in the future and will have to rely on our skills (human capital).



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My analysis, with Paul E. Peterson and Ludger Woessmann, shows that long-term growth is closely related to the skills measured by assessments such as PISA. From historical experience, the differences in potential economic outcomes from improvements comparable to those seen in other countries are many multiples of the total cost of the 2008 recession until now. Moreover, the increased taxes and greater government intrusion necessarily implied by continuing U.S. deficits and long-term imbalances of Social Security and Medicare will weaken our economic institutions.

At the same time, other countries have emulated many of the features of our economic institutions while producing improved human capital, which implies we may no longer be the world's leader in innovation in the future.

- **Criticism Two:** *The U.S. ranking is completely explained by poverty; we should be fixing poverty, not our schools.*

Various (poor-quality) analyses have suggested that, because the United States has a higher poverty rate than other industrialized countries, our low international-assessment scores can be explained by poverty.

Indeed, in response to the PISA 2012 scores, the American Association of School Administrators (now called AASA, the School Superintendents Association) issued the following statement: "The problem we find in American education isn't that schools are 'falling behind,' it is that schools are 'pulling apart.' Poverty in America is the real issue behind today's education gap, and it means students can experience different education trajectories because of where they live." This is the association of school superintendents, arguing that it is poverty and not their schools to blame for poor achievement.

"In simplest terms, both top and bottom American students do poorly when compared with students in other industrialized countries."

But if the superintendents' group is correct, the United States would turn out the same share of high-performing students as other countries. To the contrary, only 9 percent of U.S. students perform at the highest proficiency levels in math (Levels 5 and 6), far below the 20 percent to 30 percent performing at that level in countries such as South Korea, Japan, Switzerland, and the Netherlands. Canada turns out almost twice as many high fliers as the United States.

Moreover, if an income gap makes the United States unique, the percentage of American students performing well below proficiency in math should be higher in this nation than in countries with comparable average test scores. But that's not the case.

We have the same average scores as the Slovak Republic, Lithuania, and Hungary. (Hardly a group we want to be compared with.) And, like those countries, about a quarter of our students performed well below proficiency in math. In simplest terms, both top and bottom American students do poorly when compared with students in other industrialized countries.

“Since 2003, the United States has made virtually no gains, even as a range of countries made substantial ones.”

- **Criticism Three:** *Other things, such as grit, determination, and teamwork skills, are more important than cognitive skills.*

While these noncognitive skills probably are important, the empirical evidence on economic outcomes remains thin. At the same time, we know that measured achievement has very high economic returns to individuals.

Recent work shows that the United States rewards high-level skills (as measured by international math tests) with greater earnings in the labor market more than any of the 22 other countries surveyed by the OECD. And, there is no evidence that having higher cognitive skills detracts from noncognitive development or skills. In fact, there is some evidence that they complement each other.

Interestingly, in confidence, U.S. students have always thought that they were above average and more self-efficacious in doing math problems—perceptions that belie their performance.

- **Criticism Four.** *We don't really need any more skilled workers because we already have enough unemployed or underemployed college graduates.*

Clearly, there is always some transitory unemployment as workers move across jobs and as some workers (even college graduates) find that their skills built on old technologies are no longer needed. But over the long run, the nature of production adapts to the available workforce. With a highly skilled workforce, technology tends to expand in ways that employ these skills. With lower levels of skills, industry expands on dimensions that do not need as many skills. But these expansions are generally not at the forefront of technology and historically have not seen growth in wages matching that in more skill-using technologies. Moreover, the modest proportion of Levels 5 and 6 students suggests that the future development of U.S. scientists and engineers will be constrained—a fact now evident in the demand in Silicon Valley for highly skilled workers educated abroad.

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Some conclusions: First, the United States is not doing well. While our low ranking has been seen on earlier international assessments, there are many reasons to believe that low cognitive skills (as assessed by PISA) will be increasingly important for our economic future.

Second, by historical patterns, improving our achievement—which identifies the human capital of our workforce in the future—has huge economic ramifications. Getting to Canadian achievement levels translates, by historical economic-growth patterns, into 20 percent higher paychecks for the average worker over the entire 21st century. Not only could this solve our current fiscal and distributional woes, but it also could establish our future economic and international leadership.

Third, other countries have shown that it is possible to improve. While changing achievement might be difficult, there is ample evidence that it is critical to the U.S. future.

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