

How Does the United States Stack Up?

International Comparisons of Academic Achievement



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The modern workplace has changed radically and the demands on those transitioning from the classroom to the workforce continue to rise. Students from Baltimore and Boston no longer compete against each other for jobs; instead, their rivals are well-educated students from Sydney and Singapore. But as globalization has progressed, American educational progress has stagnated, according to leading international assessments.

The U.S. high school graduation rate is at all-time high, but American students still graduate from high school at a lower rate than students in nearly two dozen developed nations belonging to the Organisation for Economic Co-operation and Development (OECD).¹ On virtually every international assessment of academic proficiency, the performance of American secondary school students varies from mediocre to poor. Given that human capital is a prerequisite for success in the global economy, U.S. economic competitiveness is unsustainable with poorly prepared students feeding into the workforce.

While the overall level of U.S. performance lags that of other industrialized countries, the United States also has substantial inequities in achievement across the country. The United States has a higher percentage of students who perform at lower levels of proficiency than other industrialized nations and a lower proportion of students who reach the highest levels of proficiency. These achievement gaps have significant effects on the nation. A study by the OECD finds that if the United States brought all students up to a minimum level of proficiency, the country would add as much as \$72 trillion to its gross domestic product over the lifetime of a child born in 2010.²

Fortunately, the United States is making progress in improving educational equity, according to results from the Programme for International Student Assessment (PISA), a triennial assessment administered by the OECD to students in its member and partner countries and economies. PISA is considered the world's most comprehensive and rigorous comparison of international student achievement.

Among all countries and economies that participated in PISA 2006 and PISA 2015, the United States made the biggest improvement in equity. The United States increased its percentage of "resilient students"—defined as disadvantaged students who perform better than predicted by their socioeconomic status—by 12 percentage points in nine years, more than any other nation. Additionally, in the United States, students' socioeconomic background accounts for just 11.4 percent of the variation in student performance on PISA 2015, which is slightly lower than the OECD average. By comparison, on PISA 2006, students' socioeconomic background accounted for 17 percent of the variation in U.S. student performance. The decline in the association between socioeconomic status and student performance on PISA indicates that the United States has improved educational equity for traditionally underserved students.

The following sections detail how fifteen-year-old students from the United States compare with fifteen-year-olds in other OECD member countries³ on PISA. In 2015, the most recent administration of the test, more than seventy countries and economies participated in PISA and participating nations make up nearly 90 percent of the world's economy. Unless otherwise noted, results presented in this fact sheet are from PISA 2015.

Science Performance

In 2015, the United States ranked nineteenth out of thirty-five OECD countries in science, the major domain assessed that year. The U.S. mean score of 496 was not statistically different from the OECD average.⁵

Twenty percent of U.S. students scored below the baseline level of science proficiency, which is comparable to the average of 21 percent across OECD nations. However, in Estonia, Hong Kong (China), Japan, Macao (China), Singapore, and Viet Nam, fewer than 10 percent of students failed to reach the baseline level of proficiency in science.

Meanwhile, 9 percent of U.S. students performed at the top levels of science proficiency in 2015, which is similar to the 8 percent average across OECD nations. More than 15 percent of students scored at the top levels in Japan, Singapore, and Chinese Taipei. Yet worldwide, 22 percent of all top-performing students in science reside in the United States—the highest proportion of any participating country or economy. American students also expressed more interest in science than their international peers with 38 percent of U.S. fifteen-year-olds reporting that they plan to work in a science-related career at age thirty, compared to 24 percent of students internationally.

Reading Performance

In 2015, the United States ranked twentieth out of thirty-five OECD countries in reading, scoring near the OECD average.

Nineteen percent of U.S. fifteen-year-olds did not reach the PISA baseline of reading proficiency, which is comparable to the OECD-wide average of 20 percent. However, in Canada, Estonia, Hong Kong (China), Ireland, Macao (China), and Singapore, fewer than 12 percent of students performed below the baseline level.

Ten percent of U.S. fifteen-year-olds performed at the top levels of proficiency in 2015, representing a 2 percentage-point increase since 2012. But that percentage still lags the United States's performance in 2000, the first year the OECD administered the PISA reading test, when 12 percent of U.S. students reached the top levels of reading proficiency.

Mathematics Performance

In 2015, U.S. students ranked thirty-first out of thirty-five OECD countries in math. The United States's average math score was 20 points below the OECD average. Moreover, the nation's average math score has declined 13 points since 2003, the first year for the PISA math test.

In the United States, 29 percent of students did not reach the PISA mathematics baseline level of proficiency in 2015. Across all OECD countries, about one-quarter of students did not reach baseline proficiency.

Only 6 percent of U.S. students reached the top levels of performance in mathematics in 2015, down from 9 percent in 2012. Meanwhile, on average, other OECD nations had nearly two times the proportion of fifteen-year-olds as the United States who achieved the top levels of math performance.

Endnotes

- 1 Organisation for Economic Co-operation and Development (OECD). *Education at a Glance 2016: OECD Indicators* (Paris: OECD Publishing, 2016). http://www.keepeek.com/Digital-Asset-Management/oecd/education/education-at-a-glance-2016_eag-2016-en#page48.
- 2 E. Hanushek and L. Woessmann, *The High Cost of Low Economic Performance* (Paris: OECD, 2010).
- 3 The thirty-five OECD member countries are Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.
- 4 PISA 2015 results are drawn from OECD, *Country Note: Key Findings from PISA 2015 for the United States* (Paris: OECD Publishing, 2016). <https://www.oecd.org/pisa/PISA-2015-United-States.pdf> and OECD, *PISA 2015 Results (Volume 1): Excellence and Equity in Education* (Paris: OECD Publishing, 2016). http://www.keepeek.com/Digital-Asset-Management/oecd/education/pisa-2015-results-volume-1_9789264266490-en#page191.
- 5 "In each test subject, the score for each participating country/economy is the average of all student scores in that country. The average score among OECD countries is 500 points and the standard deviation is 100 points. About two-thirds of students across OECD countries score between 400 and 600 points." OECD, "PISA FAQ," <http://www.oecd.org/pisa/pisafaq/> (accessed August 7, 2017). For additional information about how PISA country scores are calculated, see OECD, "Chapter 9: Scaling PISA Data," in *PISA 2015 Technical Report* (Paris: OECD Publishing, 2016). <http://www.oecd.org/pisa/sitedocument/PISA-2015-Technical-Report-Chapter-9-Scaling-PISA-Data.pdf>

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