Globally Challenged: Are U.S. Students Ready to Compete? The latest on each state's international standing in math and reading

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Report Available:

www.hks.harvard.edu/pepg/PDF/Papers/PEPG11-03_GloballyChallenged.pdf

Brief, interpretative article available at educationnext.org

educationnext.org shows each state's ranking

Purpose of Study

Compares percentage of students performing at proficiency level in math and reading in U.S. and in each state with the percentage proficient in other countries.

Importance of the Study



"We know what it takes to compete for the jobs and industries of our time. We need to out-innovate, out-educate, and out-build the rest of the world." —Barack Obama

Methodology

• United States participated in both the NAEP 2007 tests and the PISA 2009 tests, so it is possible to equate the two tests by looking at the PISA score equivalent NAEP proficiency level. PISA scores of 530 points in math and 550 points in reading are equivalent to scores needed to be identified as proficient by NAEP.

U. S. Math performance of special concern

- Research has shown that math skills especially critical for both an individual's and an economy's well being.
- 2) U. S. performance particularly low in math
- 3) NAEP proficiency level higher in reading than math, suggesting that U. S. sets lower standards in math. Remainder of presentation focuses exclusively on math.

Data for High School Graduating Class of 2011

 National Assessment of Educational Progress (NAEP), 2007, 8th graders

 Program for International Student Assessment (PISA), 2009, 15 year-olds (10th grade)

Main Findings

Percent of U.S. students proficient in math is 32%, placing it in 32nd place among 65 countries.
In reading, 31 percent proficient, placing it in 17th place.

Figure 1: Percentage of students at proficient level in math in U.S. states and countries participating in PISA 2009.



Countries with much higher percentage of proficient students in math

- Shanghai (75%)
- Singapore (63%)
- Hong Kong (62%)
- Korea (58%)
- Finland (56%)
- Taiwan (56%)
- Liechtenstein (56%)
- Switzerland (53%)

- Japan (51%)
- Canada (49%)
- Netherlands (49%)
- Macao (48%)
- Belgium (47%)
- New Zealand (47%)
- Germany (45%)
- Australia (44%)

Rankings of Select States in Math (all students)

State	Percent proficient	Significantly outperformed by
MA	50.7 %	6
MN	43.1	11
VA	37.5	17
ΤХ	34.7	21
NY	30.2	28
FL	27.4	34
СА	23.9	36
MS	13.6	43

The low U.S. math ranking is not simply due to its heterogeneous population. The percent of U.S. white students who are proficient is 42%, which would place it in 17th place when compared to <u>all</u> students in the other countries.

Percentage of *white* students in U.S. states at proficient level in math and percentage of all students at that level in countries participating in PISA 2009.



Rankings of Select States in Math (white students)

State	Percent proficient	Significantly outperformed by
MA	58.0 %	2
ТХ	52.8	3
MN	48.2	6
VA	46.9	6
CA	39.5	16
NY	39.1	16
FL	37.5	16
MS	23.9	34

The percent of U.S. students proficient among those from families where at least one parent has a college degree is 44%, which would place it in 16th place when compared to <u>all</u> students in the other countries.

Percentage of *students with at least a college-educated parent* in U.S. states at proficient level in math and percentage of *all* students at that level in countries participating in PISA 2009.



Rankings of Select States in math (students with college educated parent)

State	Percent proficient	Significantly outperformed by
MA	61.1 %	1
MN	53.8	5
VA	50.6	6
ΤХ	49.4	7
NY	40.8	16
СА	39.4	18
FL	36.5	18
MS	18.8	41

Why did Phillips, 2009 (AIR) study find better results for U.S.? Phillips compared student performance on TIMSS, not PISA. PISA has replaced TIMMS as study of choice in many advanced countries. Many countries that outscored U.S. on PISA did not participate in TIMSS.

Importance of the Findings

"America faces many challenges...but the enemy I fear the most is complacency. We are about to be hit by the full force of global competition. If we continue to ignore the obvious task at hand while others beat us at our own game, our children and grandchildren will pay the price. We must now establish a sense of urgency."

—Charles Vest, Former President, Massachusetts Institute of Technology



What needs to be done?

- The purpose of this report is to document the widespread nature and urgency of the situation.
- Elsewhere, the authors have identified a variety of strategies to improve school quality.

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