U.S. Proficiency in Math and Reading Lags Behind That of Most Industrialized Nations, Endangering Long Term Economic Growth

Harvard Study shows large variation in each state’s international standing in math and reading achievement

CAMBRIDGE, MA – Results from a new study of student achievement show that U.S. students rank 32nd among industrialized nations in proficiency in math and 17th in reading.

The 32 percent of U.S. students who achieved proficiency in math compares to 75 percent of students in Shanghai, 58 percent in Korea, and 56 percent in Finland. Countries in which a majority – or near majority – of students performed at or above the proficiency level in math include Switzerland, Japan, Canada, and the Netherlands.

Comparing students’ math achievement across states, the study finds the highest performing state to be Massachusetts, where 58 percent achieve proficiency. The states of Minnesota, Vermont, North Dakota, New Jersey, Kansas, South Dakota, Pennsylvania, New Hampshire, and Montana are among the top ten performing states.

The scholars analyze test results for the high-school graduating class of 2011, the most recent cohort for which data are available.

The study authors are Paul E. Peterson, Harvard University, Ludger Woessmann, University of Munich, Eric Hanushek, Stanford University, and Carlos X. Lastra-Anadón, Harvard University. The article will appear in the Fall 2011 issue of Education Next and is currently available at www.educationnext.org.

California, our nation’s most populous state, had a math proficiency rate lower than that of 36 countries and no better than the rate in Greece and Russia. Michigan students are outperformed by those in 30 other countries, placing it at a level equivalent to the students in Italy and Portugal.

The authors say their math findings are of particular importance, because firms are experiencing shortages of technically skilled workers and outsourcing professional-level work to workers abroad. “Graduates in each and every state compete for jobs with graduates from all over the world,” Hanushek
observed. “Since student performance on international tests such as PISA is closely related to long-term economic productivity growth, increasing U.S. students’ proficiency levels to those attained in Canada would increase our economic growth rate by some 50 percent.”

Data examined by the authors also show considerable variation in proficiency rates among students from different racial and ethnic backgrounds. While 42 percent of white students and 50 percent of students from Asian and Pacific Islands backgrounds were identified as proficient in math, only 11 percent of African American students, 15 percent of Hispanic students, and 16 percent of Native Americans were so identified. “The 42 percent math proficiency rate for U.S. white students trails behind all students in 17 other countries, among them Korea, Japan, Finland, Germany, Belgium, and Canada,” Peterson noted.

The National Assessment of Educational Progress (NAEP) is administered by the U.S. Department of Education and is generally known as the nation’s report card. NAEP’s concept of proficiency, set by its governing board, reflects a consensus of what educators, curriculum experts, and policy makers think should be known by students who reach a certain educational stage. The Education Next study looked at data from the 2007 NAEP tests in reading and math, given to 8th graders in U.S. public and private schools. A representative sample of this cohort of students took the Program for International Student Assessment (PISA) tests, administered by the Organization for Economic Development (OECD) two years later, as 15-year-olds, in 2009. The authors established a crosswalk between NAEP and PISA in their analysis, estimating the score on the PISA achieved by students said to be proficient on the NAEP examination. The study, “Globally Challenged: Are U.S. students ready to compete?” is a report of Harvard’s Program on Education Policy and Governance.

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