



The Case for STEM Education as a National Priority: *Good Jobs and American Competitiveness*

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Why is STEM Education a National Priority?

“60 percent of U.S. employers are having difficulties finding qualified workers to fill vacancies at their companies.”

-Council on Foreign Relations¹

“STEM occupations will grow 1.7 times faster than non-STEM occupations over the period from 2008 - 2018”

-Office of Science and Technology and Policy²

“In the current overall employment market, unemployed people outnumber job postings 3.6 to one. In the STEM occupations, job postings outnumbered unemployed people by 1.9 to one.”

“STEM employment is expected to grow 17% between 2008 and 2018, far faster than the 10% growth projected for overall employment”

-Change the Equation³

“At all levels of educational attainment, STEM job holders earn 11 percent higher wages compared with their same-degree counterparts in other jobs.”

“The top 10 bachelor-degree majors with the highest median earnings are all in STEM fields.”

“The average annual wage for all STEM occupations was \$77,880 in May 2009, significantly above the U.S. average of \$43,460 for non-STEM occupations.”

“In 2010, the unemployment rate for STEM workers was 5.3 percent; for all other occupations, it was 10 percent.”

-National Governors Association Center for Best Practices⁴

“47 percent of Bachelor’s degrees in STEM occupations earn more than PhDs in non-STEM occupations.”

-Georgetown Center for Education and the Workforce⁵

“STEM workers drive our nation’s innovation and competitiveness by generating new ideas, new companies and new industries. However, U.S. businesses frequently voice concerns over the supply and availability of STEM workers. Over the past 10 years, growth in STEM jobs was three times as fast as growth in non-STEM jobs.”

-STEM: Good Jobs Now and for the Future, U.S. Department of Commerce⁶

¹ <http://www.cfr.org/united-states/us-education-reform-national-security/p27618>

² <http://www.whitehouse.gov/blog/2012/12/18/one-decade-one-million-more-stem-graduates>

³ <http://changetheequation.org/stemdemand>

⁴ <http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-edu-publications/col2-content/main-content-list/building-a-science-technology-en-1.html>

⁵ <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/STEMWEBINAR.pdf>

⁶ <http://www.esa.doc.gov/sites/default/files/reports/documents/stemfinaljuly14.pdf>

How is the U.S. Doing in STEM Education?

“Although most parents of K–12 students (93 percent) believe that STEM education should be a priority in the U.S., only half (49 percent) agreed that it actually is a top priority for this country.”

“Only one in five STEM college students felt that their K–12 education prepared them extremely well for their college courses in STEM.”

-Microsoft STEM Survey⁷

“Only 45 percent of U.S. high school graduates in 2011 were ready for college work in math and 30 percent were ready in science.”

“In 2009, just 34 percent of U.S. 8th graders were rated proficient or higher in a national math assessment, and more than one in four scored below the basic level.”

“Only one out of five households has access to and takes advantage of STEM-related after-school programming.”

“In almost every state, children will get less time for science in elementary school than they did 15-20 years ago.”

-Change the Equation⁸

“Fewer than 40 percent of students who enter college intending to major in a STEM field complete a STEM degree.”

-Office of Science and Technology and Policy⁹

“Fifty-four percent of the nation’s 4th graders and 47 percent of its 8th graders report that they “never or hardly ever” write reports about science projects. Thirty-nine percent of 8th graders report that they “never or hardly ever” design a science experiment.”

“The average mathematics literacy score of U.S. 15-year olds declined about 9 points from 2003 to 2006, and then rose about 13 points in 2009, placing the United States below 17 of 33 other members of the Organization for Economic Co-operation and Development (OECD).”

“The average science literacy score of U.S. 15-year-olds was not measurably different from the 2009 OECD average, though it improved by 3 points from 2006 to 2009. The U.S. score was lower than the score of 12 out of 33 other OECD nations participating in the assessment.”

“About half of Americans said that their local public schools did not put enough emphasis on teaching science and math, an equal portion (48%) said the emphasis was about right, and just 2% said there was too much emphasis on teaching science and math in the local schools (Rose and Gallup 2007).”

-National Science Foundation’s 2012 Science and Engineering Indicators¹⁰

⁷ <http://www.microsoft.com/presspass/press/2011/sep11/09-07MSSTEMSurveyPR.mspx>

⁸ http://www.changetheequation.org/sites/default/files/CTEq_VitalSigns2011_National_0.pdf

⁹ <http://www.whitehouse.gov/blog/2012/12/18/one-decade-one-million-more-stem-graduates>

¹⁰ <http://www.nsf.gov/statistics/seind12/>