

# Tech Executive Sounds Alarm About Need for U.S. Investment in STEM Education

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By Gordon Coburn

For too long now, we have all seen the headlines bemoaning the "skills gap", the dearth of qualified U.S. workers to fill a fast-growing slate of jobs in science, technology, engineering and mathematics (STEM). April 1 will mark the start of this year's application period for high-skilled foreign-born workers seeking U.S. work visas. So many of the world's talented workers are expected to apply that the federal government will stop accepting applications in a matter of days, if not hours. That's why American businesses can no longer accept the status quo. We have an obligation to foster a passion for STEM education right here.

Why STEM? The statistics are alarming. Only 16 percent of U.S. high school seniors are considered proficient in mathematics and are also interested in a STEM career, according to the Education Department. Even among those who pursue STEM courses in college, only about half go on to work in STEM fields. The Organization for Economic Cooperation and Development's 2012 Program for International Student Assessment found that 15-year-olds in the U.S. ranked 26th out of 34 OECD countries in mathematics. In science, the result was only slightly better. Even worse, neither of these rankings has budged significantly over time.

These results are self-defeating. STEM fields represent the jobs of the future.

According to the Bureau of Labor Statistics, science and technology-related occupations are growing at around twice the rate of the overall U.S. workforce. Take software developers the number of jobs in this field is expected to grow 22 percent by 2022, much faster than the 11 percent growth anticipated across all occupations. And these are available, good-paying jobs.

The median annual wage for a software developer in 2012 was \$93,350. Between 2009 and 2012 across the STEM occupations, there were 1.9 job openings for every unemployed person, according to a study released by Change the Equation, a CEO-led initiative to drive STEM learning in the U.S. During that same period, the broader labor-market situation remained far different. The country's unemployment rolls included 3.6 unemployed individuals for each available job.

A Georgetown University Center for Education and the Workforce analysis found that by 2018, there will be as many as 2.4 million job openings for STEM occupations, with four out of five of these jobs requiring at least some form of postsecondary education.

In the United States, we're failing to train our kids to be proficient in math and science. Students who do take STEM courses often pursue different lines of work and employers needing to fill STEM-related jobs are already reporting difficulty finding workers. How can we possibly be expected to meet the demand for STEM workers going forward?

As a nation we can and must do more. Policymakers must help create opportunities for STEM education, through funding measures such as the America Competes Act. The law, first passed in 2007 and reauthorized in 2010, invested in innovation and STEM education, making America more competitive. The country also needs modernized immigration policies, including the ability to "staple" a green card to the diplomas of foreign-born students graduating from U.S. universities with advanced STEM degrees. And private industry certainly must contribute.

At Cognizant, we believe deeply in unleashing a desire to learn the necessary skills to thrive in the rapidly changing global economy. That belief is at the heart of our "Making the Future" education initiative, in which Cognizant has distributed more than \$5 million to nonprofit organizations across the country supporting in-school, after-school, and summer programs for children. Cognizant recently awarded 33 new grants to nonprofits aiming to inspire the next generation of America's technology leaders and entrepreneurs. The grants will enable students particularly underserved minorities and girls in 22 states to receive more than 300,000 hours of high-quality STEM education across a diverse range of topics, including electronics, robotics, computer programming, digital fabrication, 3D printing, and wearable technology.

Our STEM education efforts, including our recent grant awards and the announcement of a \$150,000, three-year initiative at Texas A&M University, are somewhat self-serving in one regard. At the beginning of this year, Cognizant also announced plans to hire 10,000 U.S. workers over the next three years. We'd love to hire the best and brightest America has to offer.

Gordon Coburn is the president of Cognizant, a leading provider of information technology, consulting, and business-process services, dedicated to helping the world's leading companies build stronger businesses. Cognizant is headquartered in Teaneck, N.J.