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THE WALL STREET JOURNAL

WSJ.com

April 23, 2014, 8:55 AM ET

Math and Science Pay, But High Schoolers Care Less

By Brenda Cronin



Bloomberg

Math and science are the peas and carrots of the jobs market: great for a career future, but resolutely unpopular with the young.

Even amid a relatively weak jobs picture, fewer U.S. high school students are taking up fields of study with proven earnings potential than was the case a decade ago.

That has translated into a chronic shortage of workers schooled in science, technology, engineering or mathematics, according to [research](#) released Wednesday.

The STEM Index, developed by **U.S. News & World Report** and [Raytheon](#) Co., found the number of American jobs requiring math or science knowledge increased to 16.8 million last year from 12.8 million in 2000.

Yet during the same period, U.S. high-school students' interest in those subjects declined—and now stands below 2000 levels.

The findings are “both surprising and kind of depressing,” said **Brian Kelly**, editor and chief content

officer of U.S. News & World Report. The index is based on data from the **Bureau of Labor Statistics**, the **College Board**, the **National Center for Education Statistics** and other sources.

The trend has bedeviled many employers since before the most recent recession. A work force with inadequate STEM training “really is the big issue of our time,” said **Steven Goldthwaite**, chief executive of **Metem Corp.**, a parts maker for the aerospace and power-generation industries. “I know from other CEO colleagues, it’s a constant source of discussion: ‘How do we find these skill levels?’ ”

Metem, of Parsippany, N.J., benefits from its location, Mr. Goldthwaite said, because New Jersey has more scientists and engineers per square mile than any other state. The company also relies on in-house training and internships to develop and improve skills among more than 280 employees.

Slipping test results illustrate the trend. One world-wide benchmark—the **Organization for Economic Co-operation and Development’s** Program for International Student Assessment—found that in 2012, U.S. high school students’ average scores in math and science ticked down below their 2000 results.

However, the situation is more nuanced than a number of data points and can differ by education level, said **Grover “Russ” Whitehurst**, director of the Brown Center on Education Policy at the **Brookings Institution**. In some cases, there seem to be “dramatic mismatches between what people are getting trained to do” and where the jobs are, he said.

For example, STEM training might pay off for those seeking work as plumbers, nurses or auto mechanics—positions that generally require an individual’s hands-on presence and are therefore less likely to be outsourced to countries with lower wages.

But demand for individuals with post-secondary STEM training isn’t as clear cut or reliable, Mr. Whitehurst said, which may explain why some college students aren’t seeking careers as engineers or science professors. Supply has outstripped demand for science PhDs at universities, he said, dissuading some students from pursuing paths in academic research.

“What’s needed is a policy that actually matches training and information about training with real opportunities,” he said. “And that kind of information is largely absent from our post-secondary [jobs] marketplace.”

A facility with even one of the four STEM fields raises an individual’s earnings potential, said **Jonathan Rothwell**, an associate fellow at Brookings’ Metropolitan Policy Program. His research found that, as of 2011, 20% of U.S. jobs required a comprehensive grasp of science, technology, engineering or math. Schools today may not be doing enough to persuade youth of the importance of math and science, he said, and that in turn disposes students to give such subjects short shrift.

Mr. Goldthwaite, of Metem, said it is up to educators, civic groups and employers to “introduce students to the excitement of science and technology.”

He sees that happening not only on the factory floor but also among the Boy Scouts, where he is

chairman of the board of the Northern New Jersey council. Scout training across the country—STEM learning figures in 60 merit badges—can foster further education in high school and community colleges, he said.

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