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# If You've Got the Skills, She's Got the Job

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TRACI TAPANI is not your usual C.E.O. For the last 19 years, she and her sister have been co-presidents of Wyoming Machine, a sheet metal company they inherited from their father in Stacy, Minn. I met Tapani at a meeting convened by the Minnesota Department of Employment and Economic Development to discuss one of its biggest challenges today: finding the skilled workers that employers need to run local businesses. I'll let Tapani take it from here:

“About 2009,” she explained, “when the economy was collapsing and there was a lot of unemployment, we were working with a company that got a contract to armor Humvees,” so her 55-person company “had to hire a lot of people. I was in the market looking for 10 welders. I had lots and lots of applicants, but they did not have enough skill to meet the standard for armoring Humvees. Many years ago, people learned to weld in a high school shop class or in a family business or farm, and they came up through the ranks and capped out at a certain skill level. They did not know the science behind welding,” so could not meet the new standards of the U.S. military and aerospace industry.

“They could make beautiful welds,” she said, “but they did not understand metallurgy, modern cleaning and brushing techniques” and how different metals and gases, pressures and temperatures had to be combined. Moreover, in small manufacturing businesses like hers, explained Tapani, “unlike a Chinese firm that does high-volume, low-tech jobs, we do a lot of low-volume, high-tech jobs, and each one has its own design drawings. So a welder has to be able to read and understand five different design drawings in a single day.”

Tapani eventually found a welder from another firm who had passed the American Welding Society Certified Welding Inspector exam, the industry's gold standard, and he trained her welders — some of whom took several tries to pass the exam — so she could finish the job. Since then, Tapani trained a woman from Stacy, who had originally learned welding to make ends meet as a single mom. She took on the challenge of becoming a certified welding inspector, passed the exam and Tapani made her the company's own in-house instructor, no longer relying on the local schools.

“She knows how to read a weld code. She can write work instructions and make sure that the people on the floor can weld to that instruction,” so “we solved the problem by training our own people,” said Tapani, adding that while schools are trying hard, training your own workers is often the only way for many employers to adapt to “the quick response time” demanded for “changing skills.” But even getting the right raw recruits is not easy. Welding “is a \$20-an-hour job with health care, paid vacations and full benefits,” said Tapani, but “you have to have science and math. I can't think of any job in my sheet metal fabrication company where math is not important. If you work in a manufacturing facility, you use math every day; you need to compute angles and understand what happens to a piece of metal when it's bent to a certain angle.”

Who knew? Welding is now a STEM job — that is, a job that requires knowledge of science, technology, engineering and math.

Employers across America will tell you similar stories. It's one reason we have three million open jobs around the country but 8 percent unemployment. We're in the midst of a perfect storm: a Great Recession that has caused a sharp increase in unemployment and a Great Inflection — a merger of the information technology revolution and globalization that is simultaneously wiping out many decent-wage, middle-skilled jobs, which were the foundation of our middle class, and replacing them with decent-wage, high-skilled jobs. Every decent-paying job today takes more skill and more education, but too many Americans aren't ready. This problem awaits us after the “fiscal cliff.”

“We need to be honest; there is a big case for Keynesian-style stimulus today, but that is not going to solve all our problems,” said the Harvard University labor economist Lawrence Katz. “The main reason the unemployment rate is higher today than it was in 2007, before the Great Recession, is because we have an ongoing cyclical unemployment problem — a lack of aggregate demand for labor — initiated by the financial crisis and persisting with continued housing market problems, consumers still deleveraging, the early cessation of fiscal stimulus compounded by cutbacks by state and local governments.” This is the main reason we went from around 5 percent to 8 percent unemployment.

But what is also true, says Katz, was that even before the Great Recession we had a mounting skills problem as a result of 25 years of U.S. education failing to keep up with rising skills demands, and it's getting worse. There was almost a doubling of the college wage premium from 1980 to 2007 — that is, the extra income you earn from getting a two- or four-year degree. This was because there was a surge in demand for higher skills, as globalization and the I.T. revolution intensified, combined with a slowdown in the growth of supply of higher skills.

Many community colleges and universities simply can't keep pace and teach to the new skill requirements, especially with their budgets being cut. We need a new “Race to the Top” that will hugely incentivize businesses to embed workers in universities to teach — and universities to embed professors inside businesses to learn — so we get a much better match between schooling and the job markets.

“The world no longer cares about what you know; the world only cares about what you can do with what you know,” explains Tony Wagner of Harvard, the author of “Creating Innovators: The Making of Young People Who Will Change the World.”

Eduardo Padrón, the president of Miami Dade College, the acclaimed pioneer in education-for-work, put it this way: “The skill shortage is real. Years ago, we started working with over 100 companies to meet their needs. Every program that we offer has an industry advisory committee that helps us with curriculum, mentorship, internships and scholarships. ... Spanish-speaking immigrants used to be able to come here and get a decent job doing repetitive tasks in an office or factory and earn enough to buy a home and car and put their kids through school and enjoy middle-class status. That is no longer possible. ... The big issue in America is not the fiscal deficit, but the deficit in understanding about education and the role it plays in the knowledge economy.”

The time when education — particularly the right kind of education — “could be a luxury for the few is long gone,” Padrón added.