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While employers struggle to fill jobs in health care and trades such as welding, enrollment in the two-year, degree-awarding colleges that provide graduates for those fields rose only 18 percent from 2005 to 2010, trailing the 21 percent growth for four-year universities. Photographer: Ty Wright/Bloomberg

Bloomberg News

Caterpillar's Worker Hunt Means Welders Top Banking Pay

By Thomas Black and Shruti Singh on October 09, 2012 | [Twitter](#) [Facebook](#) [LinkedIn](#) [Google+](#) | 0 Comments

Spence Brennan makes \$55,000 as an assistant manager of a Chinese restaurant chain. He is betting he can do better as a welder.

On an October morning at Mountain View College in Dallas, the 22-year-old sent sparks flying in a workshop as he practiced his electric-arc technique. The two-year school is a regular stop for manufacturers recruiting for skilled technical openings.

“Job demand is a lot higher in welding than anything else,” said Brennan, who left a four-year university after two semesters and expects his training to allow him to almost double his pay at Pei Wei Asian Diner, a unit of P.F. Chang’s China Bistro Inc. “I could do at least \$100,000 a year.”

Companies such as Caterpillar Inc. ([CAT](#)) are looking for workers like Brennan. Even with trades offering competitive pay, skilled factory vacancies may soar fivefold to 3 million by 2015 amid a U.S. industry rebound and baby boomer retirements, according to the Society of Manufacturing Engineers. That shortfall threatens to jeopardize both the U.S. recovery and corporate growth plans.

The manufacturing mismatch is part of a broader skills gap in an economy that has more than 3 million jobs open, even with an unemployment rate that ran at 8 percent or more for 43 straight months until the decline in September to 7.8 percent.

Economics and history are combining to drive the skilled-worker shortage. High-school graduates are opting in increasing numbers for four-year schools that can lead to jobs with higher pay and more prestige, and shying away from manufacturing after it shed jobs for more than a decade.

Manufacturing Drag

Caterpillar, the world’s largest maker of construction and mining equipment, finds it difficult to locate prospective employees with the right skills, Chief Human Resources Officer Kimberly Hauer said.

“Any opening we have slows down our ability to manufacture at the pace we’d like to,” Hauer said. She said filling a vacancy for a welder or machinist can take 12 weeks at the Peoria, Illinois-based company.

Schools that provide training for trades and fields such as nursing aren’t producing students in great-enough numbers. Enrollment in two-year colleges that award degrees totaled 7.68 million in 2010, 18 percent more than in 2005. In the same period, four-year university enrollment climbed 21 percent to 13.3 million, according to the U.S. Education Department.

In California, community college enrollment has been shrinking after budget cuts chopped course offerings by almost 25 percent, the system’s board of governors said last month in urging support for a state ballot proposition to increase higher-education aid. Community-college funding has been reduced 12 percent since 2008-09, the board said.

Welding Shift

Brennan, the student in Dallas, decided to seek an associate degree in welding technology at Mountain View College after his year at Stephen F. Austin University in Nacogdoches, Texas, convinced him that he wanted something different.

“I was always pushed toward a four-year school,” he said in an interview after doffing his welding helmet and protective gloves. “It wasn’t the right path for me. I like working with my hands.”

At the end of the school year, as many as 20 companies visit Mountain View College in search of welders, according to Dewayne Roy, chief of the school’s welding program. He said all his graduates find jobs.

Welding is required across industries as varied as highway construction, school-desk production and the building of petrochemical plants spurred by rising U.S. natural gas output.

Pay Potential

The average annual salary in the field is \$47,900, more than a bank teller supervisor, according to jobs website CareerBuilder. Welders with their own equipment can make \$70 an hour, Roy said. Billing 40 weekly hours at that rate and working 50 weeks a year would produce gross pay of \$140,000.

Job skills are taking a central role in the presidential campaign. Incumbent Barack Obama and Republican challenger Mitt Romney are seeking votes in battleground states including Ohio and Pennsylvania, and former President Bill Clinton highlighted the number of openings during his Sept. 5 speech to the Democratic National Convention.

The U.S. Bureau of Labor Statistics has reported more than 3 million unfilled private-sector jobs monthly since November. Those openings included 694,000 in education and health services and 660,000 in professional and business services as of July, the latest data available. Factory-job vacancies totaled 271,000.

More Openings?

Government figures understate the factory shortage, according to a September 2011 report by Deloitte LLP for the National Association of Manufacturers trade group. The report, based on a survey of 1,123 executives, estimated that there were 600,000 unfilled U.S. jobs in manufacturing.

The Society of Manufacturing Engineers used that data as the basis for its projection of 3 million manufacturing vacancies in three years.

“It’s the single biggest issue that we have to solve if the U.S. is going to be a thriving economic force going forward,” said Mark Tomlinson, chief executive officer of the Dearborn, Michigan-based group.

The shortage of skilled manufacturing employees will only deepen once U.S. economic growth returns to a normal pace, said Craig Giffi, a Deloitte vice chairman and one of the report’s

authors. U.S. gross domestic product grew 1.8 percent in 2011, compared with Federal Reserve Bank policy makers' long-term forecast of 2.2 percent to 3 percent.

"We're at the edge of a significant problem turning into a critical problem," Giffi said. "The only reason it's staying out of critical is because growth is stalled."

Parental Influence

Industrial companies in search of skilled workers cite a common refrain: reluctance by parents and teachers to steer young people to factory jobs.

In a 2011 Deloitte survey, only 33 percent of respondents said they would recommend manufacturing as a career for their children, and 19 percent agreed with the premise that "our school system encourages students to pursue careers in manufacturing."

The higher pay tied to more education is one draw for four-year schools. The median annual salary for workers with associate degrees, a group that includes nurses and diesel mechanics, is now \$36,390. That trails the \$47,970 for holders of bachelor's degrees, according to the Education Department.

While about 35 percent of graduates in both categories earn \$40,000 to \$75,000 a year, the balance shifts in favor of bachelor's degree holders at higher pay ranges. One in four of those graduates is paid \$75,000 or more, compared with about one in 10 for those with associate degrees.

Manufacturing Slump

Recent history also creates more of a struggle for manufacturers than other industries to attract skilled workers, said Gary Green, president of Forsyth Technical Community College in North Carolina.

Health-care employment grew unabated amid the deepest U.S. slump in six decades, and students see computers and information technology as industries of the future, Green said. Meanwhile, Labor Department data show that even with a gain of 484,000 jobs since January 2010, manufacturing employment stood at about 11.9 million in September, down from 17.2 million in 2000.

"The harder sell is in manufacturing," Green said. "For a period of time there's been this sense that American manufacturing has disappeared."

Companies are looking to fill the skills gap. Caterpillar, for example, has created in-house courses in partnership with community colleges to help solve the shortage.

Caterpillar Training

Roberto Alvarez, 38, is training to run computerized manufacturing equipment after nine years as an assembly worker at the factory in Aurora, Illinois, where Caterpillar makes vehicles that include excavators and wheel loaders.

“Many companies, they need skilled qualified machinists,” Alvarez said. “That’s one of the things Cat needs.”

With a full-time job and a family to support, taking classes outside the company wasn’t a viable option, said Alvarez, who will gain college credits during the 30-week course. He is in line for a raise, which he declined to discuss.

Computer numeric-control operators make an average of \$34,035 in the U.S., compared with \$31,320 for the average assembly worker, according to CareerBuilder.

Fluor Corp. ([FLR](#)), the largest publicly traded U.S. construction and engineering company, plans to train more than 2,000 welders, electricians and pipefitters over the next couple of years, Vice President Frank Erichson said. They will help build petrochemical plants in the southeastern U.S. that have been spurred by a natural gas boom, he said.

Recruiting Visits

The Irving, Texas-based company is visiting high schools and recruiting military veterans to hire about 8,000 skilled workers, he said.

“We’re really counting on bringing in people who are in high school and don’t have an affinity for college,” Erichson said. “There are a lot of people out there with good mechanical aptitudes, and we want to tap into that.”

Kennametal Inc. ([KMT](#)), a maker of tooling systems, has set up apprenticeships in a high school in Latrobe, Pennsylvania, where the company is based, and another in Solon, Ohio. Students change their minds about manufacturing when they tour a Kennametal factory, CEO Carlos Cardoso said.

“Their perception of manufacturing was completely off,” Cardoso said. “Old, dark, rusty, dangerous -- it’s the perception of 30 years ago.”

Mom’s Advice

Shawn Hayden decided to train as a welder, even though his mother advised him to pursue a bachelor’s degree. Now he’s getting unsolicited job offers even after being promoted to supervisor at United Alloy Inc., a closely held fuel-tank maker in Janesville, Wisconsin.

“We wanted a university -- we just figured there would be more avenues for him,” said Kathy Hayden, Shawn’s mother, who has an education degree from the University of Wisconsin Stevens Point and a master of business administration from Cardinal Stritch University in Milwaukee. “It was kind of his mom being the bully saying, ‘four-year, four-year.’”

After the Haydens toured Arizona Western College in Yuma, Arizona, Kathy Hayden accepted his career choice.

“We knew he would be successful wherever he went,” she said.

Hayden, who got associate degrees in welding and industrial technology, found a job after graduating in 2009, when most companies were cutting workforces. With in-demand skills, Hayden said he’s confident his future is secure.

“I’m 24 years old and have a great job and own my own house,” he said. “I’m living the American dream as far as I’m concerned.”

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