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Retooling Apprenticeships *to Decrease the Skills Gap*

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Retooling Apprenticeships: Building the Manufacturing Workforce

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MANUFACTURERS and educators in the U.S. and across the globe understand the economic impact of the industry, and they know that a highly skilled workforce is necessary for today's competitive market, if America is to remain at the forefront of manufacturing ingenuity.

However, in recent history, while training for new talent and the existing workforce is seen as a high priority, it often falls short in implementation. Today, companies leading business innovation are increasing their investment in lifelong learning and development programs to keep up-to-date with new technologies and equipment – yet many questions remain on how to best achieve their goals.

Approximately 600,000 manufacturing jobs are going unfilled because people lack the skills needed to perform in their positions. The skilled worker shortfall is expected to grow to 2 million by 2025 if no progress is made to ramp up the workforce; further stressing manufacturers' ability to fill open positions in areas such as machining, welding, mechatronics, CNC programming, engineering, robotics, and automation.

The Training Tools that Educators and Manufacturers Need

The skills gap issue may seem like a big challenge to confront, and com-

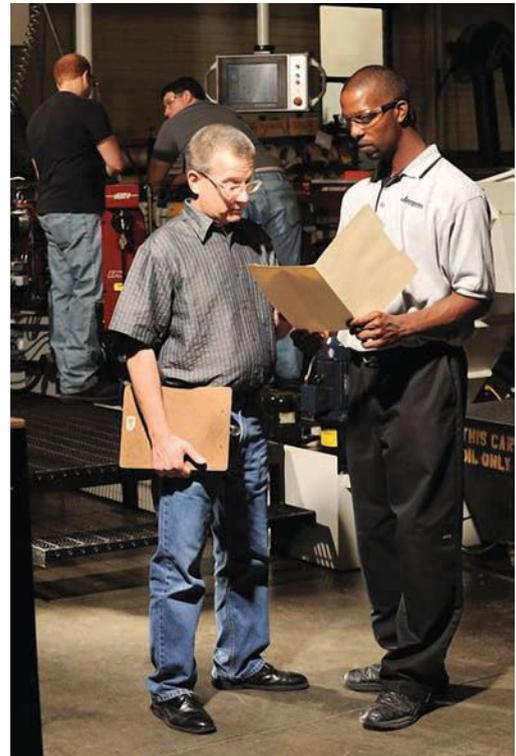
John Hindman is Tooling U-SME's learning and performance improvement (LPI) leader.

panies are looking for the resources and skills needed to tackle this issue. But there already are measures companies can take, and resources to leverage, to drive their workforce training needs. A proven solution is to tap into local and regional educators as well as national training providers to help assess the current competency level of their workforce and determine training needs.

Manufacturing has long been an on-the-job training industry, relying on new employees to learn from more seasoned and experienced coworkers. However, in today's advanced technology climate, a "watch what I do" training program is no longer sufficient to build a stable, reliable, and safe workforce. Unfortunately, many companies don't have the manpower or financial means to support a more enhanced program on their own. Yet, many regional academic institutions were originally developed with a heavy focus on applied technology and skills. And government resources are available to them for structured workforce development programs to train current and future workers.

Many of these programs are based on the time-tested strategy of apprenticeships. This earn-while-you-learn model gives students the opportunity to master their trade while earning a salary – without incurring

tuition fees and loan debt often accompanying a traditional college education.



**Apprenticeships are essential to the future
of manufacturing.**

Still, over the years, apprenticeships have fallen off the radar as a training option for employers, and as a result, haven't kept pace with the modern demands of advanced manufacturing employers. With the looming skills shortage in front of us, companies are starting to take another look at developing or expanding apprenticeship efforts, but are challenged by the lack of clarity

many existing apprenticeship programs provide because there has not been an industry-wide standard for academia and companies to follow.

The apprenticeships of yesterday focused on time investment to signify proficiency in careers that often had more to do with aptitude than technical knowledge. Educators and employers can tackle these challenges through competency-based learning models such as Tooling U-SME's Apprenticeship Acceleration Framework. Frameworks like these help identify the specific skills, experience, and technical knowledge required to succeed in today's advanced workplace environments. By defining specific knowledge and skill requirements that align with standard apprenticeship job functions, these frameworks allow the development of an industry-wide standard of program design, implementation, and management.

Today, through competency-based learning, people are getting the real-world skills and experience apprenticeships have always provided, with applicable, focused educational content necessary to successfully complete on-the-job requirements. Advanced technologies require the need for more training hours versus just counting hours to earn journeyman status. Educators have the skills, experience, and now the tools necessary to help employers retool traditional apprenticeships into a more efficient and effective program.

Schools Utilizing the New Apprenticeship Framework

Tooling U-SME's Apprenticeship Acceleration Framework tracks Related Training Instruction (RTI), which lists the topics to be covered for each competency that is related to the occupation. This framework also includes on-the-job training to identify the performance indicators within each competency that an apprentice should be able to demonstrate at the end of his/her training. The framework comes with online class mapping to supplement RTI hours, and tracking systems are available for easier administration and reporting of apprenticeship programs.

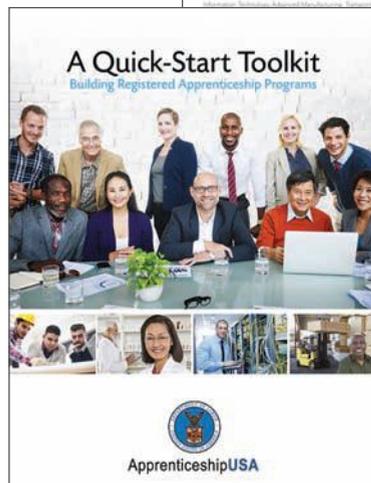
At the end of their training, not only will apprentices complete educational hours using this framework model, they will also demonstrate specific skills to complete on-the-job requirements.

The Apprenticeship Acceleration Framework model ties traditional learning initiatives with training programs that identify specific knowledge and skills required throughout the duration of an individual's apprenticeship. The competencies are stackable and customizable, so educators can take the models and adapt them to

the requirements that align with the workforce skills needs of local manufacturers.

One school using this type of framework is Lake Michigan College in Benton Harbor, MI. The school's apprenticeship program brings together on-the-job training, instructor-led classes, and online courses from Tooling U-SME.

Lake Michigan College currently



Department of Labor apprenticeship quick-start toolkit (https://www.doleta.gov/oa/employers/apprenticeship_toolkit.pdf)

has more than 100 apprentices working for over 40 companies.

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Some local businesses have as many as 14 apprentices at a time; others may have just one. Most apprentices are 25 years-old and older. The school is certified by the Department of Labor (DOL) as a training provider and is also registered with the Registered Apprenticeship College Consortium (RACC), administered by the U.S. Departments of Labor and Education.

Steps for Starting an Apprenticeship Program at Your School

Whether you are an instructor at a high school or community college, providing exceptional training for the current and future manufacturing workforce is priority.

There are several steps educators can take to establish an apprenticeship program at their school, and the Department of Labor offers a quick-start toolkit (https://www.doleta.gov/oa/employers/apprenticeship_toolkit.pdf) with useful tips and resources to help organizations build a registered apprenticeship program at their school.

The End Results

Apprenticeship programs provide job seekers with immediate opportunities to start working and earn wages, and gives educators a chance to build strong working relationships with local manufacturers because the schools can serve as a great source for apprentice candidates.

Regional educational institutions and training providers can establish robust apprenticeship programs that will enable manufacturers to improve their operation continuously, develop and leverage their workforce's full potential, increase employee engagement, and efficiently and innovatively manufacture products in their facilities.

To attract and retain new talent, manufacturers must commit to establishing tried and true training programs, and educators are the secret ingredient to creating apprenticeships that will produce highly skilled employees and drive competitiveness, productivity, quality, innovation, and profitability. ©

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