

A young woman with brown hair, wearing clear safety glasses and a dark blue button-down shirt, is smiling at the camera. She is holding a small metal part with a screwdriver. In the background, there is a large industrial machine with a monitor displaying a software interface with several vertical bars. The setting appears to be a modern manufacturing or laboratory environment.

APPRENTICESHIPS:

**Modernizing a Proven Workforce
Development Strategy**

APPRENTICESHIPS WITH A MODERN TWIST

As manufacturers struggle to find qualified workers, they are tapping into an age-old training approach, with a modern twist.

Around for generations, apprenticeships, which allow employees to earn while they learn, are seeing a renaissance as the industry addresses the skills gap.

However, today's apprenticeships differ from earlier iterations. Informal, time-based programs are out. Formal, competency-based programs are in.

By establishing apprenticeship programs around industry-wide standards, US employers who sponsor apprenticeship programs can more quickly build a pipeline of skilled workers, boost retention, reduce recruiting costs and improve productivity.

This modernized apprenticeship model is being embraced by:

- ◆ Manufacturers
- ◆ Workforce Educators
- ◆ Individuals
- ◆ Department of Labor (DOL)
- ◆ Unions
- ◆ Workforce agencies
- ◆ Community-based organizations

These groups see this new model as an opportunity to combat the existing and pending skills gap that threatens productivity, quality, innovation, safety and profitability.

In this white paper, Tooling U-SME explores the current collaborative approach to apprenticeships, involving manufacturers, workforce educators and others. Case studies offer a variety of examples and perspectives, showing that any company or school can successfully implement its own apprenticeship program to build the next generation of manufacturers.

EARN TO LEARN

Apprenticeship, as part of an overall formalized learning and development plan, is a proven strategy that provides a direct line to skills training and workforce expansion.

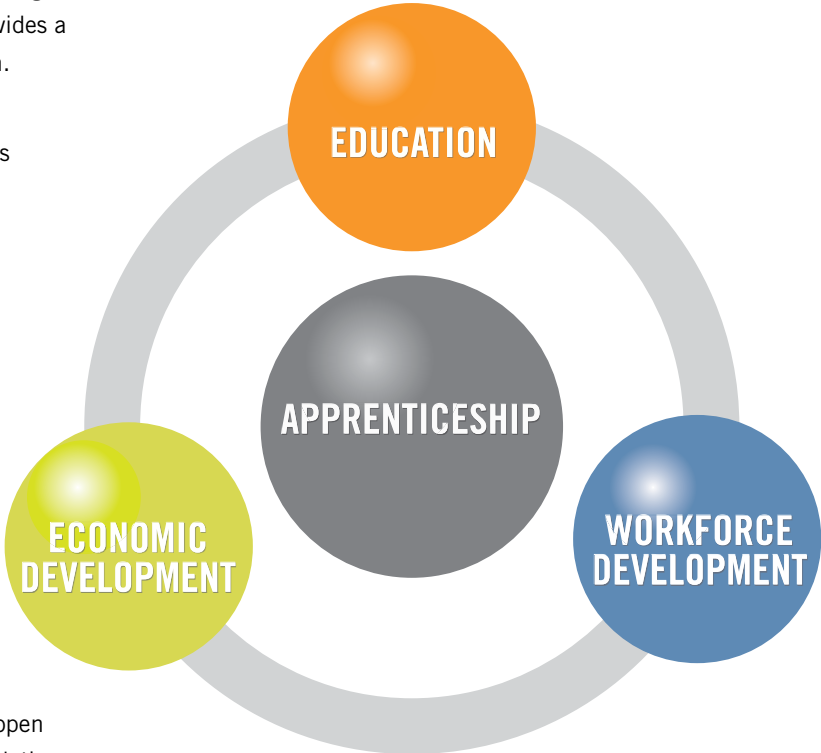
Whether for new hires or incumbent employees, apprenticeships pair On-the-Job Training (OJT) hours with classroom and online instruction, supplying a talent pipeline of qualified workers for employers and industries.

The benefits for employees are just as enticing. Apprentices get paid while obtaining training for skilled positions that will launch them on a promising and lucrative career path. That means a debt-free education when compared to many of their counterparts pursuing two-year and four-year college degrees.

The bonus? Those in a Registered Apprenticeship program will often receive steady wage increases with proficiency.

More importantly, apprenticeship opportunities are open to all, including traditionally underrepresented populations such as women, minorities, and people with disabilities, expanding the pool of qualified workers.

The strategy is gaining momentum. At the end of 2015, there were nearly 448,000 Registered Apprentices in the U.S.¹ – with more to come. In fact, the U.S. Government announced plans to double the number of U.S. apprentices by the year 2019.²



¹ Registered Apprenticeship National Results Fiscal Year (FY) 2015," United States Department of Labor (https://doleta.gov/oa/data_statistics.cfm)

² "Department of Labor and the Obama administration celebrate first-ever National Apprenticeship Week," United States Department of Labor (www.dol.gov/opa/media/press/opa/OPA20152138.htm)

DEFINITIONS

Pre-apprenticeship.

Pre-apprenticeship programs prepare individuals to enter and succeed in Registered Apprenticeship programs. Classroom and online training, as well as hands-on experience, help ensure that future workers have the skills needed to advance to a formal apprenticeship program.

Apprenticeship.

Apprenticeships are employer-funded programs (often helped by federal assistance) that allow employees to learn a trade while earning a living. Educational instruction through community colleges, technical schools online courses and other sources is combined with structured OJT. Apprentices typically complete the program with certificates, and in some cases, a degree.

Registered Apprentice.

Under the auspices of the DOL, the Registered Apprentice program is administered nationally by the Office of Apprenticeship in conjunction with independent State Apprenticeship Agencies. A Registered Apprenticeship program is sponsored by an individual business or an employer association and may be partnered with a labor organization through a collective bargaining agreement. Apprentices earn a "Completion of Registered Apprenticeship" certificate, an industry-issued, nationally recognized credential that validates proficiency.³

For more information on the Department of Labor Apprenticeship USA, go to DOL.gov/featured/apprenticeship.

HISTORY LESSON

History is strewn with examples of apprentices.⁴ The Code of Hammurabi of Babylon required artisans to teach their skills to a younger generation. Craft guilds, headed by master craftsmen, popped up in Europe in the 13th century. In the 17th century, the American colonies relied on indentured apprentices from England. The U.S. counts George Washington (surveyor), Benjamin Franklin (printer) and Paul Revere (silversmith) among its most notable apprentices.⁵

Yet, it wasn't until the Industrial Revolution with the increasing use of machinery that the need for skilled workers led to more formal apprenticeship programs.

Europe's apprenticeship programs are well known. In Germany, for instance, about half of all high school graduates opt for apprenticeships over college.⁶

In the U.S., formal programs were originated nearly 80 years ago when Congress enacted the National Apprenticeship Act (also known as the Fitzgerald Act) in 1937.⁷

Today, after several decades where strong, competency-based apprenticeships were lacking, formalized apprenticeship programs are emerging as an important tool for combatting the skills gap.

³ "What is Registered Apprenticeship?", United States Department of Labor (www.doleta.gov/oa/apprenticeship.cfm)

⁴ "Apprenticeship," Encyclopaedia Britannica (www.britannica.com/topic/apprenticeship)

⁵ "History and Fitzgerald Act," United States Department of Labor (www.doleta.gov/oa/history.cfm)

⁶ "U.S. Turns to Germany to Fill Jobs," *The Wall Street Journal*, September 27, 2016.

⁷ "History and Fitzgerald Act," United States Department of Labor (www.doleta.gov/oa/history.cfm)



ADDRESSING THE SKILLS GAP

The retirement of millions of experienced and knowledgeable workers is creating a worrisome vacuum. Other factors such as changing technology and misperceptions about the manufacturing industry contribute to a shortage of workers as well.

In fact, over the next decade, nearly 3.5 million manufacturing jobs will likely need to be filled. Because of the skills gap, 2 million of those jobs are expected to remain unfilled.⁸

Yet the industry isn't prepared. Tooling U-SME's Workforce 2021 Assessment,⁹ a five-year study, reveals companies are falling dangerously behind when it comes to addressing the manufacturing skills gap.

Nearly nine out of 10 (88 percent) say that their company is having problems finding skilled workers in manufacturing.

With the widening skills gap, apprentices are a positive solution with a measurable return on investment (ROI).

Implementing formal competency-based apprenticeship programs improve on current informal, tribal knowledge-driven approaches that do not validate that skills have been transferred to new workers.

These programs are of national interest, too, as manufacturing is an important economic driver for the U.S.

⁸ "The Skills Gap in US Manufacturing: 2015 and Beyond," Deloitte and The Manufacturing Institute, 2015.

⁹ "Mission Critical: Workforce 2021," Tooling U-SME, 2016.

OLD VS. NEW MODEL

The new Apprenticeship regulations benefit and strengthen the apprenticeship model by creating a system that can grow and adapt to the demands of an evolving economy and expands its role as a highly successful training and career option.

Career Pathways Through Apprenticeship

- ◆ Traditional time-based approach requires OJT and Related Technical Instruction (RTI)
- ◆ Competency-based approach requires the apprentice to demonstrate ability in defined job roles and requires OJT and RTI
- ◆ A hybrid approach requires the apprentice to complete a minimum number of OJT and RTI hours and demonstrate competency in specified subject areas.

OLD

- ◆ Straight educational hours combined with OJT
- ◆ No industry-wide standard
- ◆ Individual companies are responsible for implementing program design and management including assessments and OJT tracking

Traditionally, apprenticeship programs have been constructed through the completion of educational hours combined with OJT hours.

Unfortunately, the system has always lacked an industry-wide standard, leaving companies with the task of doing the heavy lifting to carry out the program design, implementation and management.

The modern day apprenticeship model is a competency-based approach. It tracks the Related Training Instruction (RTI) that is required for apprenticeship education, as well as the demonstrated OJT skills a worker should perform over the years of his or her development.

This solid framework defines specific knowledge and skill requirements that align with common

NEW

- ◆ Competency-based approach aligning the necessary knowledge and skill requirements of business
- ◆ Aligns with DOL regulations
- ◆ New framework allows organizations and workforce educators to customize the program towards specific business needs including pre- and post-assessments
- ◆ Allows for the inclusion of technology-based and distance learning

apprenticeship job functions. The level of detail allows apprentices to show competence in these roles through a more accelerated process. The system validates that knowledge has been transferred.

Some states recognize Prior Learning Assessment. This means that apprentices may test out of some RTI hours or be able to reduce OJT time if they demonstrate required skills.

This approach can drastically reduce the time for an apprentice to reach the journey level.

Although an industry-wide standard, there is flexibility. Organizations and workforce educators can customize an apprenticeship framework to meet specific business needs, allowing them to build apprenticeships that make a positive impact on business performance.

A COLLABORATIVE APPROACH

To ensure a national industry standard is met, successful apprenticeship programs involve industry, educators, DOL, unions, workforce agencies and community-based organizations. The following explains the role of each:

- ◆ **Industry.** Employers are the center of apprenticeship programs, developing them in collaboration with other partners to ensure employees in the program obtain the skills, knowledge and abilities needed to fill open positions. Pay increases and other incentives reward employees for their commitment.
- ◆ **Education.** Community colleges, technical schools and other workforce educators work with manufacturers to develop curriculum geared toward specific business needs. Often, this incorporates established, national-level skill standards. Training can be conducted onsite at the employer's facility, at school or online.
- ◆ **Individuals.** Apprentices learn while they earn. They receive supervised, structured OJT together with classroom and online instruction – all while being paid. They are launched into lucrative careers, without the burden of heavy debt. Apprentices typically earn a certificate, which is recognized throughout the industry.
- ◆ **The Department of Labor.** The DOL offers a formal Registered Apprenticeship program providing graduates with a nationally recognized credential validating their skills regardless of company or geographic location. It combines OJT with job-related instruction in curricula tied to the attainment of national skills standards. The model involves progressive increases in an apprentice's skills and wages. State-based tax credits are an added benefit for many companies adopting Registered Apprenticeships.¹⁰
- ◆ **Unions.** Historically, unions acted as an important partner in apprenticeship development and this continues today. Often, unions work in partnership with manufacturers to create and administer programs, ensuring growth opportunities for member workers. Some unions introduce training funds into collective bargaining negotiations.
- ◆ **Workforce Agencies.** Organizations (such as CareerOneStop, sponsored by the Department of Labor and a partner of the American Job Center network) work closely with job seekers, students, workers, employers and more to develop career pathways. Workforce agencies offer tremendous tools and resources. They are often partners in DOL grants and are an important source for pre-apprenticeship training.
- ◆ **Community-Based Organizations (CBO's).** Non-profit economic development organizations, such as WIRE-Net and Jobs for the Future, work to fuel economic growth by bringing manufacturing jobs to local communities to build a skilled workforce.

¹⁰ "History and Fitzgerald Act," United States Department of Labor (www.doleta.gov/oa/history.cfm)

APPRENTICESHIPS IN ACTION

Manufacturers, workforce educators and other partners across the country are having success with innovative apprenticeship programs. Here are some of their stories.

COX MANUFACTURING: CULTURE AND RETENTION BENEFITS

Manufacturer Story

“It’s difficult to grow in manufacturing without the right people in place,” said Sean Althaus, training coordinator, Cox Manufacturing. “Companies need to have apprenticeship programs in place for the long run.”

Cox, a 60-year-old San Antonio maker of precision cut metal components, implemented a competency-based Registered Apprenticeship program, certified by the DOL, which accelerated the process.

Related Training Instruction (RTI) is 144 hours a year for three years with 6,000 hours of on-the-job learning (OJT). Most of the RTI is via online training by Tooling U-SME, with apprentices taking a minimum of eight classes per month to graduate on time.

These classes are off the clock, so productivity is not affected. Apprentices get paid one hour of overtime per week to cover this time. The program offers a rolling start, which helps speed up the process.

Althaus, who came in as an apprentice himself, said, “I’ve been able to see firsthand the apprenticeship program grow to a state-of-the-art model that can compete with other businesses and programs across the country.”

He added that, over time, guidelines have become stricter related to policy and procedures, creating what is now an industry standard.

“The biggest advantage for a company is related to culture and retention,” said Althaus. “Turnover has been on a downward trend the last two years. It’s an investment in the future.”

According to Althaus, the workforce feels like the company is invested when it sees the leaders doing what they say, such as providing pay raises on time or giving a bonus with each benchmark (e.g., offering an additional five-day vacation at the completion of the first year).

“Apprenticeships are a risk-free, debt-free way to get skills and education,” Althaus said. “You show up at work, do your normal duties, and the company pays you to learn while you are working. That is awesome.”

Althaus said an important advantage of the program is that apprentices come out with DOL credentials, which are objective third-party credentials recognized at any facility. “This becomes a trustworthy, transferable piece of paper,” he said.

Three Tips

For companies interested in setting up apprenticeship programs, Althaus offers these three tips:

- 1. Be proactive.** Allocate time and budget for a training coordinator who manages the program. Cox learned there was little progress when a team leader is running a department and managing the program.
- 2. Seek expert help.** Spend the time figuring out the DOL requirements and how to set up and manage the program. They are a great resource.
- 3. Provide benchmarks.** Build a plan for each apprentice, so he or she knows what to expect related to wage increases. Also, build in some incentive “pops” to break up the monotony (such as extra vacation time after the first year or a bonus at the end of year two).

FCA US APPRENTICESHIP PROGRAM HELPS FILL LABOR GAP

Manufacturer Story

“Between technology constantly changing and a large group of employees eligible to retire, there is a shortage of skilled workers,” said Connie Donelko, Employee Relations, FCA-UAW Apprentice Program, Fiat Chrysler Automotive US, LLC. “Our apprentice program gives us the opportunity to train our own and fill the gap.”

The company’s two-year-old program requires a four-

year, 8,000-hour commitment, including more than 700 hours of training at a local college or university and OJT assignments.

“The skilled trades are always in demand, offering rewarding work and monetary benefits, so there is a lot of interest in apprentice positions,” Donelko added.



BY THE NUMBERS¹¹

448,000

Registered Apprentices
in the U.S. (2015)

91%

those completing an
apprenticeship that are still
employed nine months later.

8,000

hours typical apprentice
spends in program

150,000

number of businesses
with DOL Registered
Apprenticeships

\$15

starting hourly wage for
Registered Apprentice

\$50,000

average annual wage for a
fully-proficient worker who
completes an apprenticeship.

4

average number of years
to complete apprenticeship

\$300,000

approximate amount
apprentices who complete
their program earn
during their career over
non-apprenticeship workers.

¹¹ "Frequently Asked Questions," United States Department of Labor (www.dol.gov/apprenticeship/toolkit/toolkitfaq.htm#1a)

LAKE MICHIGAN COLLEGE & MANUFACTURERS TACKLE SKILLS GAP

Educator Story

One Midwest community college, Lake Michigan College (LMC) in Benton Harbor, Michigan, is addressing the skills gap through a successful apprenticeship program. The program brings together OJT training, instructor-led classes and online courses.

“For companies to grow like they want to, they need to find the right employees,” said Dr. Kenneth Flowers, Dean of Career and Workforce Education, Lake Michigan College. “We are continuing to build our apprenticeship program by partnering with area companies that are eager to provide ongoing opportunities to the next generation of manufacturers.”

Situated west of Kalamazoo, nearly on the shores of Lake Michigan, LMC currently has 145 apprentices working for about 45 companies. Some local businesses have as many as 14 apprentices at a time; others may have just one. Most apprentices are age 25 and up. The school is certified with the 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.

The LMC Apprenticeships take four years to complete, including 8,000 hours of OJT and a minimum of 576 hours of classroom time, including online training. This

training can lead to many career paths including sales, design, work as a foreman, and more, according to Flowers who completed an apprenticeship program in the 90s and has recently completed his PhD.

Flowers explained that LMC’s approach to apprenticeships has changed dramatically over time. “When I went through the apprenticeship program at the college, I picked my classes and did it all on my own. The reason our program is successful is that we now do things differently by helping students sign up, finalize their schedules and advise them on the process six weeks before classes start. This hands-on approach ensures there are no worries for either the company or the apprentice.”

Manufacturers are fully invested. “We meet with employers to develop the apprenticeship programs and most will buy subscriptions to cover the online Tooling U-SME classes the apprentices need,” said Flowers.

CUYAHOGA COMMUNITY COLLEGE: ACT NOW OR BE OUT OF BUSINESS

Educator Story

Back in November 2015, U.S. Secretary of Labor Thomas E. Perez participated in a roundtable on apprenticeship programs at Cuyahoga Community College (Tri-C) in Cleveland, Ohio, commenting that apprenticeships are an important “on-ramp” to the “skills superhighway.”¹²

It’s no surprise that Tri-C was selected for this opportunity; the workforce educator’s robust pre-apprenticeship and apprenticeship programs have helped strengthen the local pipeline and economy.

“Companies are seeing many employees close to retirement in three to five years,” said Dave Bredenbeck, Program Manager, Precision Machining and Apprenticeship Program, Cuyahoga Community College. “They will lose 40 to 60 percent of top-quality senior workers.”

With difficulties finding employees on the open market, Bredenbeck said companies are struggling to retool their workforce and are looking at apprenticeships as a solid model.

“Companies can’t stand back and think they can solve it themselves,” he said. “They need to take it into their own hands to develop young people – or be out of business.”

Tri-C works with Cleveland area manufacturing businesses of all sizes and in all industries to implement apprenticeship programs for both pipeline and incumbent workers covering:

- ◆ Pre-Apprenticeship – entry level: prepares those new to the industry for a Registered Apprenticeship program (seven months of training).
- ◆ Apprenticeship program – formal competency-based DOL Registered Apprenticeship program (8,000 hours over 4 years).

Tri-C and Tooling U-SME created a hybrid program combining online and classroom instruction with OTJ training and related technical instruction. The flexibility of the online program means apprentices just need to attend class one night a week, which does not interfere with their productivity on the shop floor.

In the last four years, more than 80 students have completed the program and landed quality jobs with local manufacturers.

Three Tips

Bredenbeck offers these best practices for other workforce educators looking to develop or improve their apprenticeship programs.

- 1. Build Strong Connections with Companies.** For an apprenticeship program to be successful, training has to match market need. Strong communication with local manufacturers will assure that the curriculum stays on track, keeping up with modern technology and trends. Tri-C has an advisory committee that meets twice a year when companies can weigh in and offer feedback on the program to continue developing clear career pathways for students and apprentices.
- 2. Provide One-Stop Shopping.** Companies are more likely to adopt apprenticeship programs if the process is seamless. Schools can make it easy on busy employers by handling everything: setting up the program with the state, enrollment, billing and more.
- 3. Implement a Formal Process.** Human Resource managers want a concise roadmap for the company to navigate when it comes to apprenticeships. They rely on the school to guide them. Offering a hybrid curriculum (online, classroom, shop) where learning objectives are mapped to competency-based courses, ensures consistency, efficiency and results.

¹² “U.S. Labor Secretary Promotes Apprenticeships During Cleveland Visit,” Crain’s Cleveland Business, Nov. 2, 2015

TAKING THE APPRENTICESHIP MODEL NATIONAL

Educator/Manufacturer Story

As part of an initiative to address the manufacturing skills gap, Mohawk Industries, the world's largest flooring company, is taking an apprenticeship model developed in partnership with the Robert C. Byrd Institute (RCBI) at corporate sites in more than a dozen states.

The program will provide standardized, industry-endorsed, online instruction and OJT learning for manufacturing companies in multiple states. The RCBI program will serve at least 1,000 apprentices and 415 pre-apprentices across the United States.

The model was first introduced at the Unilin/Mohawk plant in Holden, West Virginia. After which, Mohawk implemented the proven apprenticeship model at facilities in Arkansas, North Carolina, Georgia, South Carolina, Texas and Virginia this year, with plans for more sites coming on board next year.

"There are not enough workers pursuing careers in manufacturing," said Lucinda Curry, director of RCBI's Apprenticeship Works. "For companies to compete successfully and grow, they often require customized training programs and apprenticeships to increase the skills of their current workforce, raising them to a higher level."

Before the Mohawk partnership, RCBI already had a strong customized training model in place, working with local employers at their sites across West Virginia.

"Our goal is to magnify our model Apprenticeship Program to ensure that manufacturers near and far have the skilled workers they need to grow and prosper in the competitive global economy," Curry said.

A DOL grant set the plan in motion. DOL awarded RCBI \$4.9 million for Apprenticeship Works, the National Advanced Manufacturing Apprenticeship Program.

The five-year initiative makes apprenticeships, like the one through Mohawk, more affordable to employers and more accessible to employees and individuals considering careers in manufacturing.

Through the RCBI program, apprenticeships are being established initially in occupations that include manual and computer-numerical-controlled machining (CNC) as well as the emerging fields of additive manufacturing (better known as 3D printing), composites and robotics.

Working in a variety of industries — including flooring, automotive, aerospace, robotics, defense and related industries — the RCBI program will develop apprenticeships and pre-apprenticeships nationwide. It will include innovative pre-apprenticeship programs for women, transitioning military personnel and disadvantaged youth.

RCBI and DOL worked with Tooling U-SME to build an apprenticeship competency model mapped to DOL guidelines as well as to national credentials including the NAM Skills Certification System, covering certifications such as National Institute for Metalworking Skills (NIMS), American Welding Society (AWS), SME and Manufacturing Skill Standards Council (MSSC). Apprentices progress through the training by mastering particular skills, enabling employers to measure progress and reward individual initiative.

REGISTERED APPRENTICESHIPS BOOST ECONOMY

Department of Labor Story

“The Governor of the Commonwealth, the Secretary of Commerce and Trade, and the Commissioner of the Department of Labor and Industry (DOLI) are focused on growing the economy in Virginia,” said Thomas Cecere, Apprenticeship Related Instruction Specialist, DOLI. “Their joint efforts have been successful in recruiting companies to bring jobs to the state.”

Apprenticeships contribute to this by helping build good paying jobs, he said. Currently, there are more than 13,000 apprentices throughout the Commonwealth, meeting the needs of approximately 2,000 Virginia businesses.¹³

Credentials for Registered Apprenticeships are awarded by the state. This is a more formal approach to apprenticeships, which brings benefits to both companies and employees. There is some paperwork involved, but no cost.

“These are nationally recognized credentials, so both apprentices and their employers feel confident that the correct training is in place,” said Cecere, who added that each program is audited.

To promote and facilitate the process, Virginia has 13 consultants who speak with companies about formal training and help register them for the program.

“With changes in the workforce due to baby boomers retiring, voids are coming up. Additionally, fewer students are coming out of high school with the skill sets needed. Employers say ‘Hurry up and get the workforce trained,’” said Cecere.

A formal training program with an apprenticeship program is a good strategy, especially when the timeframe for completion can be accelerated through a competency-based approach.

A Registered Apprentice completes a minimum of 2,000 hours of supervised on-the-job training and a minimum of 144 hours of related classroom instruction for each year of apprenticeship.

Apprenticeship terms are occupation specific, but the average term is four years.

“Companies can look at loyalty and retention to support the decision. It’s an investment in the future. It’s an opportunity to grow and to employ life-long learning for the employee. It shows management that individuals are skilled and eager to learn other skill sets.”

According to the DOL, 91 percent of those completing an apprenticeship are still employed nine months later.

The best formal training programs show recognition of an employee’s progress, and offer an incremental pay scale. Companies in the Registered Apprentice program have committed to incremental pay increases.

In Virginia, the DOLI helps companies solve their staffing challenges by creating and customizing the curriculum for the apprenticeship program, often working with Tooling U-SME for online training as part of a blended, hybrid approach. The Tooling U-SME program allows more control over the curriculum since it is in-house. With administrative rights, companies can monitor progress to see which courses employees have taken, scores and more.

Successful completion of the Registered Apprenticeship Program earns the apprentice nationally recognized state certification as a journey person.

¹³ "Registered Apprenticeship," The Virginia Department of Labor and Industry (www.doli.virginia.gov/apprenticeship/registered_apprenticeship.html)

APPRENTICESHIP PROGRAMS OBTAINABLE FOR SMALL BUSINESSES

Community-based Organization Story

With limited resources, small and mid-sized companies are often challenged to implement apprenticeship programs. One nonprofit economic development organization in Cleveland, Ohio, offers a solution.

WIRE-Net, supporting local manufacturers since the late 80s, has created an apprenticeship program for a consortium of these smaller companies. The program combines OJT, customizable and implemented by each company, along with classes at the local community college and online courses from Tooling U-SME.

“With the average age of manufacturing employees around 50, there is an important need for manufacturers to develop talent,” said John Colm, WIRE-Net President and Executive Director.

Creating and certifying a formal Registered Apprenticeship program through DOL takes administrative time and expertise. In addition, selection criteria must be outlined, curriculum developed and progress for each apprentice tracked. This can be a daunting task for busy manufacturers.

“To help, we developed a talent development solution around apprenticeships and act as administrator for the program,” said Colm, who added that the program ensures apprentices meet standard credentials. Funding for the program comes from the consortium companies as well as through donations and grants, such as one from the Cleveland Foundation.

He said a common misperception is that apprenticeships can be implemented only in unionized environments; however, they also are available for non-union sites.

WIRE-Net recently launched the first of three apprentice programs:

- ◆ Maintenance Mechanic
- ◆ CNC Machinist
- ◆ Certified Production Technician

While the first Maintenance Mechanic apprenticeship program is a traditional time-based model, the others will be competency-based programs, designed to be completed in three to 3.5 years. The first 10 individuals to enter the program are incumbent employees. The program will later expand to include new employees.

Working with the local school district, the initiative also focuses on pre-apprenticeships, increasing work-based learning in high school where students learn hard and soft skills to help prepare them for the Registered Apprenticeships.

“At an early age, it is critical to provide exposure to students, counselors, and families, introducing them to the benefits of manufacturing apprenticeships,” said Colm. “They need to know that apprenticeships have a big impact on employees in terms of personal development, earning power and future career opportunities.”

Colm said the strength of the consortium apprenticeship program is three-fold:

- 1. Customizable.** Companies can easily adapt the model to fit their needs.
- 2. Common Approach.** One curriculum (community college/online) creates an industry standard.
- 3. Community Interest.** Producing high-wage earners helps the local economy.

“The apprenticeship program trains for real jobs that provide family sustaining wages,” said Colm. “Upon completion of the program, apprentices make \$50,000 to \$60,000 annually, are debt-free, and are working on a terrific career path.”

IMPROVED APPRENTICESHIP MODEL

With the dwindling number of skilled workers, and an effort to rebuild apprenticeship programs across the country, industry has been presented with an opportunity to improve the apprenticeship model.

By establishing apprenticeship programs based on industry-wide standards, American employers who sponsor apprenticeship programs can more quickly build a pipeline of skilled workers, boost retention, reduce recruiting costs and improve productivity.

The improved apprenticeship model is being embraced by:

- ◆ Manufacturers
- ◆ Workforce Educators
- ◆ Individuals
- ◆ Department of Labor
- ◆ Unions
- ◆ Workforce agencies
- ◆ Community-based organizations

Listen to their success stories and it will be clear: If manufacturers haven't committed to building strong competency-based apprenticeship programs, they should.

Contact

For more information about how Tooling U-SME has innovated the apprenticeship model and developed a modernized approach for manufacturing organizations, please call Tooling U-SME at 866-706-8665 or email info@toolingu.com.

About Tooling U-SME

Tooling U-SME delivers versatile, competency-based learning and development solutions to the manufacturing community, working with more than half of all Fortune 500® manufacturing companies, as well as 600 educational institutions across the country. Tooling U-SME partners with customers to build high performers who help their companies drive quality, profitability, productivity, innovation and employee satisfaction. Working directly with hundreds of high schools, community colleges and universities, Tooling U-SME is able to help prepare the next-generation workforce by providing industry-driven curriculum. A division of SME, a nonprofit that connects all those who are passionate about making things that improve our world, Tooling U-SME can be found at toolingu.com or on Facebook ([facebook.com/toolingu](https://www.facebook.com/toolingu)) and Twitter (twitter.com/toolingu).



