



Manufacturing Talent:

The New Role for Apprenticeships
in Today's Labor Market

*Forward by Eric Seleznow, Senior Advisor, Jobs for the Future,
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Foreword

By Eric M. Seleznow

As the rapid pace of technological change reshapes the global economy, the needs of employers, workers, and job-seekers are often misaligned. Individuals are left out of job opportunities by requirements for degrees they don't have, or on-the-job experience they can't get. Companies increasingly report that "the jobs are there, but the skills are not."

Addressing this challenge in today's economy may require applying lessons we learned decades ago: one of the best ways to succeed in the workplace is to combine education and training with learning—and mastering—skills on the job. Modern day apprenticeships can do that for workers and employers. For the past 80 years, apprenticeship in the U.S. has trained millions of Americans for good jobs with good wages, engaging over 150,000 employers in more than 1,000 occupations. Today, apprenticeships are gaining traction as a way to prepare individuals to succeed in skilled work and help employers meet the needs of the future of work.

Apprenticeship in the U.S. has undergone a major transformation from a successful but largely blue-collar, union, and building trades training program to a more widely accepted innovation in the job training system that helps employers "grow their own" pipeline of skilled workers. The movement to expand apprenticeship in the U.S. is building and bringing more and more diverse stakeholders and businesses to the table, many for the first time.

Apprenticeships are a win-win for workers and employers alike. Individuals get access to training in critical and relevant skills without the challenges of time and money that often accompany the pursuit of a degree. Research has found that apprenticeship programs result in higher productivity, increased retention rates, and a substantial return on investment. It's a "grow your own" strategy that better aligns the needs of employers with the interests of the workforce.

While at the U.S. Department of Labor, I played a role in driving forward federal apprenticeship policy. Since then, I have helped launch the [Center for Apprenticeship & Work-Based Learning](#) with Jobs for the Future and have continued to see interest among policymakers and employers continue to grow. It has become clear that expanding apprenticeship and other forms of work-based learning approaches is critical to not only helping employers develop a skilled workforce, but also making the promise of economic mobility available to everyone.

But with increased attention also comes greater potential for misconception in the discourse. The apprenticeship model has great promise to help connect individuals with meaningful

opportunities, but amidst this enthusiasm, it's important to align around a clear understanding of how to maintain the quality and rigor of apprenticeships, how these models are best applied, and what kinds of outcomes they can produce for workers and employers.

This paper is designed as a field guide to demystify apprenticeships—debunking common misconceptions, highlighting best practices, and providing assistance in navigating the registration process. It will be a valuable companion to employers seeking to strengthen their workforce and fulfill the promise of work-based learning.



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Introduction

Employers today are grappling with two interrelated challenges. Amid growing national, state, and regional skills gaps, they struggle to identify and attract workers to fill high-demand roles. At the same time, recruitment and training costs are rising due to increased churn and falling retention rates. The challenge is exacerbated by endemic equity gaps that artificially constrain the talent pool and leave entire segments of the population feeling locked out of opportunities in the workforce.

And as the labor market tightens, the problem is becoming even more acute. It is estimated that while 53 percent of American jobs are middle-skill, only 43 percent of workers are trained to the middle-skill level.¹ LinkedIn's latest workforce report found that the Bay Area, Washington, DC, and Austin have the largest skills gaps among major cities.² Among entry-level workers, the average tenure ranges from nine months in the restaurant industry to 18 months in healthcare.³

Employers, in turn, play what has been characterized as an 'expensive zero sum game,' doubling down on online job postings and poaching talent from their competitors.⁴ But does it have to be a race to the bottom? How can employers shift their practice in ways that help them both identify talent and boost retention?

Against this backdrop, employers of all kinds are revisiting an old concept: apprenticeship programs that enable them to invest in talent with the potential to learn the skills necessary for success on the job, but who might not have the time and money to acquire those skills on their own. The process of delivering on-the-job training is becoming more efficient -- and effective," said Jamai Blivin, CEO of Innovate+Educate. As employers learn more about soft skills that help individuals succeed on the job, new technologies are helping to scale training programs and close persistent skill gaps across sectors.

Consider the case of Adobe's Digital Academy, which provides scholarships for low-income individuals to participate in tech training programs with an array of accelerated training providers. Successful students move on to three-month paid apprenticeships in technology jobs, and the highest performers are hired by Adobe full-time.



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But today's renaissance in apprenticeships is not limited to the high-tech fields that hog the headlines.

Manufacturing, engineering, and other areas that offer family-supporting income can benefit from the development of on-the-job training programs that provide some mix of technical training and soft skills development that employers increasingly crave. Furthermore, the rise of online learning is enabling new and emerging hybrid models, drawing upon education providers that can operate independently or in conjunction with the traditional educational ecosystem, to deliver apprenticeship training at scale and in tight coordination with employers providing on-the-job training.

Penske Truck Leasing, needing to hire 2,000 additional technicians by 2018, joined forces with Penn Foster to provide on-the-job certification programs for technicians — and found that employees who got certified were 50 percent more likely to stay with the company than those who did not.⁵ Employers are learning that when they invest in talent early, they not only expand their talent pipeline, but they also develop workers that are more likely to stay with them for the long haul.

This paper considers a wide variety of the issues and perspectives surrounding apprenticeships and offers insights from the experience of savvy employers that are making apprenticeship work.



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Modern-day apprenticeship programs are enabled by the advent of advanced assessments, which allow employers to understand the skills and competencies that a job-seeker walks in the door with and then target training to his/her unique needs.

Ryan Craig, Managing Director of University Ventures

Apprenticeships In Brief

At its core, the apprenticeship is really just another term for real world-augmented learning. Often rooted in partnerships between employers and education institutions, including community colleges, localized apprenticeship programs have proven effective in many cases, but are often hard to scale. Online providers can offer greater potential to expand, but have often lacked the relevance to on-the-job experiences that makes apprenticeship a uniquely successful model of training.

New and emerging hybrid models, however, draw upon the capabilities of education providers that can operate independently — or in conjunction with the traditional educational ecosystem — to deliver related technical instruction (RTI) at scale and in tight coordination with employers providing on-the-job (OJT) training.

“Apprenticeships are rightfully gaining traction in policy and media circles as a faster and cheaper alternative to college,” says Ryan Craig, Managing Director of University Ventures and author of *College Disrupted: The Great Unbundling of Higher Education*. “Modern-day apprenticeship programs are enabled by the advent of advanced assessments, which allow employers to understand the skills and competencies that a job-seeker walks in the door with and then target training to his/her unique needs.”



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Debunking Three Apprenticeship Myths

MYTH #1: APPRENTICESHIPS ARE NOT A FORM OF HIGHER EDUCATION

Apprenticeships are not an alternative to higher education for those less capable; they're an applied form of higher education requiring similar levels of mastery of core subjects, skills and competencies. And in a changing education-to-employment landscape, apprenticeships respond more acutely to the needs of today's learners. As Jamai Blivin, CEO of Innovate+Educate, has put it, fewer and fewer individuals have “four years of time and four years of money at the same time.”⁶

According to the [National Skills Coalition](#), over 80% of jobs in the US require some level of postsecondary education or training.⁷ In some cases, the credentials required for a job are directly linked to a particular skill, like user experience design or wood flooring installation. But in many others, degree requirements are simply a proxy for soft skills. It's a phenomenon called upcredentialing and it means that while individuals are left-out, employers are missing out on talent. According to research conducted by Innovate+Educate, while only 1% of high-risk young adults in Albuquerque could qualify for a job based on existing academic requirements, more than 30% of those same young adults had the skills and cognitive ability equivalent to an individual with a college degree.⁸

MYTH #2: APPRENTICESHIPS ARE JUST FOR TRADES

Today's “apprenticeable trades” are not only ones where you learn a skill and slowly get better. Apprenticeships require a blend of classroom learning as well as applied or “on-the-job” learning in order to produce a fully productive worker — and both are equally important.

Work-based learning that falls under the apprenticeship umbrella is relevant in a variety of fields — from healthcare to appliance installation and everywhere in between.

As the “experienced employee” becomes a scarcer commodity to find, the notion of combining education and experiential learning to gain the advantages of both has branched out over thousands of registered apprenticeable fields.



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MYTH #3: APPRENTICESHIPS ARE JUST FOR RECENT HIGH SCHOOL GRADUATES

Apprenticeships are being used today as a critical component of the career ladder at many companies—helping tenured workers upskill for new roles, rather than just as a piece of the recruiting funnel for high school-age workers.

The jobs that apprenticeships train for are high-paying and require dedication. Workers with experience, a track record of reliability, and soft skills, who just need greater technical instruction to advance in their careers, are often better suited for employer investments than entry-level workers or recent high school graduates.





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Build vs. Buy: A New Paradigm for the Talent Pipeline

Today, American employers spend exorbitant sums on online job posting sites like Monster, Indeed, and LinkedIn. Workforce guru Josh Bersin estimates the size of the recruitment market to be \$200 million worldwide.⁹

The reasoning is intuitive if not effective. In an era when the labor market is tight and typified by lateral churn, employers often figure that to increase hires, they must increase applications.

But in an ironic twist, sharp increases in applicants enabled by online job postings have fueled demand for costly applicant tracking systems and led to a phenomenon called “resume spam,” in which individuals (or, increasingly, algorithms) stuff their resumes with keywords that will catch the attention of the applicant tracker.¹⁰ These developments all contribute to the narrative that employers are all competing for a finite pool of talent.

But what if the talent is simply not available? Many employers in manufacturing and construction are finding themselves in this very position due to the skills gap in the skilled trades industries. A 2016 Department of Commerce (DOC) report notes that many firms often require employees to have a high level of company-specific knowledge that cannot be found in the labor market.¹¹ When positions are continually left open, employers must deal with the consequences of delivering products late or turning down work altogether.

To combat the skills gap in skilled trade industries, many firms are turning inward to establish internal skills development programs and apprenticeships. Not only does developing talent from within help narrow the skills gap, but it also enables firms to retain the company-specific knowledge they would otherwise not find in the talent market — and drive employee loyalty and retention.

Consider the [case](#) of MetroPower, an employee-owned electrical contractor serving the southeastern U.S. Upon beginning employment at MetroPower, every new hire is enrolled in their four-year, DOL-registered electrician apprenticeship. Through this program, MetroPower



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Satisfied employees create satisfied customers and [we] recognize the need to invest in our people.

Tony Varamo, Workforce Development Manager at MetroPower

has created a learning culture that empowers workers to reach their full potential. As Tony Varamo, Workforce Development Manager at MetroPower, has put it, “satisfied employees create satisfied customers and [we] recognize the need to invest in our people.”

ROA: Return on Apprenticeships

According to Michael Horn, Co-Founder of the Clayton Christensen Institute for Disruptive Innovation, “The savviest employers are going to see apprenticeships as a way to not just avoid highly competitive recruiting landscapes, but also to bolster their bottom line with a clear return on investment.” For example, Siemens USA reported achieving over a 50 percent rate of return on apprentice graduates from its CNC machinist program in comparison to machinists hired off the street.¹² Workers who graduate from apprenticeship programs gain a deep understanding of the work and the principles that form the foundation of those skills through a combination of on-the-job training (OJT) and related instruction. These employees have better judgment and



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flexibility, which make them powerful assets for the company.

For employers utilizing distance learning providers for related technical instruction, their apprentices' flexibility is a game-changer; these workers are able to study theory on their own time and from their homes — as opposed to in an onsite classroom or local school. Indeed, the productivity of the graduates from the same Siemens apprenticeship is so high that these workers only fall behind on their tasks 13% of the time, in comparison to 33% of the time for employees hired from the local talent pool.¹²

Several executives interviewed in the same DOC study also noted that apprenticeships spurred more rapid advancement in their companies, enabling them to develop their future leaders.¹¹ Employees supported by development programs from their employer tend to foster strong loyalty toward the organization, in turn boosting their engagement, motivation and retention at the company. However, employers aren't the only ones getting major benefits from apprenticeship programs. According to ApprenticeshipUSA, 91% of people who complete an apprenticeship find a job, typically with the company that trained them.¹³

As an additional incentive to employers, many states provide businesses with tax credits and labor benefits to host an apprenticeship program. These breaks typically come in the form of funding for technical assistance and career and technical training to prepare students for apprenticeships. Based on the positive results of these programs for both employers and apprentices, the U.S. Department of Labor (DOL) has invested \$265 million since 2015 to expand apprenticeships.¹¹



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Apprenticeships Go Online

As industries such as manufacturing and utilities become increasingly high-tech and modernize their processes, so too do the learning approaches used by workers in these fields. As online learning continues to expand, businesses in the skilled trades must innovate to incorporate this learning approach into their training programs.

ONLINE LEARNING AND APPRENTICESHIP

With more than 150,000 businesses with apprentice programs in the U.S., apprenticeships remain core to the workforce development system.¹³ These programs consist of two elements — on-the-job training (OJT) and related technical instruction (RTI) — and can last anywhere from one year to six years, depending on the occupation and program. While OJT is core to enabling apprentices to practice new skills and be productive workers for their business, RTI provides these trainees with the education and theory behind these skills. For example, instead of just learning how to fix an engine, apprentices learn the details of how the engine was built and why the engine must be serviced in a particular way. By offering RTI through an online program, both employers and their apprentices reap a myriad of benefits.

BENEFITS TO EMPLOYEES

Overall, the concept of apprenticeship is enticing to workers because it allows them to learn the professional skills they need to grow their career and simultaneously get paid for their onsite work and continued education. Upon completion, apprentice graduates earn an average of \$50,000 a year.¹³ Furthermore, by offering RTI online, companies provide apprentices with increased flexibility to complete courses at home or on the go, without the restrictions of needing to be present in a brick-and-mortar school. This convenience also means they're free to continue their studies when traveling for offsite projects. According to Tony Varamo, Workforce



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Development Manager at MetroPower “The online delivery of education has improved both the flexibility and productivity of the apprentices in our program. It’s an ideal situation for everyone and is helping turn out employees who are fully prepared to be successful in the real world.”

BENEFITS TO EMPLOYERS

The flexibility provided by online learning is not only valued by the apprentice. By enabling employees to learn from home, businesses improve employee productivity and minimize the cost of time spent traveling to an offsite community college during work hours. Furthermore, employers can easily scale up the number of apprentices in an online program based on training needs, whereas brick-and-mortar schools typically impose enrollment minimums and/or maximums, based on instructor availability and demand. This scalability also naturally streamlines training at all plant locations, ensuring workers across the nation have the same quality of experience and are trained in the same processes and techniques.

By integrating online learning with apprenticeship, employers can also appeal to a new generation of talent by ensuring learning programs are modernized and meet the changing needs of today's workforce. With 87% of millennials listing “learning and development opportunities” as a top priority in job selection, offering high-tech, flexible programs can make a significant impact in a company's ability to recruit new talent.¹⁴

The online delivery of education has improved both the flexibility and productivity of the apprentices in our program. It’s an ideal situation for everyone and is helping turn out employees who are fully prepared to be successful in the real world.

Tony Varamo, Workforce Development Manager at MetroPower



Five Tips for Launching Your Own Apprentices Program

While we most often hear about apprentice programs in the skilled trades, apprenticeships exist in over 1,000 occupations across the U.S., including healthcare, information technology (IT), and energy.¹⁵ As a proven solution for employers to recruit, train and retain a skilled workforce, apprentice programs continue to receive significant support from the federal government. In fact, the Labor Department is pushing to expand apprenticeships into a wider range of fields, including retail, policing, and more.

Has your business been considering apprenticeship as a training and development solution for your employees? Figuring out where to start can be a challenge, so to facilitate the process we've compiled a five-step overview to planning – and launching – your own registered apprentice program.

1. ASSESS THE WORKFORCE

You already know that apprenticeship has proven to be an effective workforce development solution, but you still need to identify for exactly which areas it would be most effective in your business. Most often, this is directly influenced by the challenges your company has identified. Are you having difficulty finding and recruiting enough machinists? Are you challenged by high turnover? Does your entry-level workforce need to be upskilled? To identify which skills to train for and how to structure your program, [conduct an assessment](#) — both written and practical — of your employees to understand where the greatest gaps are and design your program accordingly.

2. KNOW YOUR PARTNERS

As we know, apprenticeships are structured around two main components: on-the-job training and related instruction. Whether onsite at a client or at your own headquarters, OJT occurs



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under the supervision of a manager, journeyman, or experienced mentor who is typically also employed by your company. However, identifying the right partner to provide related instruction for your program is key. For example, selecting an online provider can help you scale your apprenticeship across multiple plant locations and offer your workers more flexibility in their schedule. Based on the results of the needs assessment, your education partner can work with you to develop a curriculum for your program that teaches the technical, theoretical, and workplace competencies needed for the role.

3. DESIGN AND BUILD

With the correct partners in place, you can officially begin building out your apprenticeship program. Building out the related instruction portion will be critical to determining the skills taught, but identifying the highly skilled and tenured employees at your company who will serve as mentors to the apprentices will help establish the groundwork. You will also need to determine the design of the apprenticeship: Will you have a pre-apprenticeship program to develop a waiting list? Will the related instruction component be taught simultaneous to OJT, or will you front-load instruction so apprentices are only focused on hands-on work in the second half of the program? What will the reward structure look like as apprentices gain skills or complete years? All of these are questions that will help guide your apprenticeship design process.

4. JOIN THE NETWORK

By registering your apprenticeship, your business becomes eligible to receive a variety of benefits, including access to resources from the federal government, state-based tax credits and tuition support, technical support, access to a nationwide network of apprenticeships, and the opportunity to provide your employees with a national, industry-recognized credential.¹⁶ To register your program, determine whether your state runs its own apprenticeship system or if it belongs to the broader federal apprenticeship system. Employers must then align their



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apprenticeship curriculum with the requirements of the governing body (as an online provider of related instruction content, Penn Foster can help with this task!) With federal and state bodies continuing to build on the support for apprenticeship, the Department of Labor has developed a [*handy tool*](#) to kick off your registration process.

5. LAUNCH YOUR PROGRAM

You're ready to start. Now it's time to get the word out! To open the program to current employees, launch an internal marketing campaign by sending announcement emails, putting up flyers in your workplace, and creating a landing page that employees can visit to gather more information. Reach out to community associations and issue a press release to recruit external candidates for the apprenticeship. Once the program officially kicks off, make sure to continually assess the performance of the program to ensure it is training apprentices effectively and addressing your original business challenges.





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which officially established the national apprenticeship system and empowered state agencies to register and administer these programs. Today, there are over 21,000 registered apprentice programs across the nation and over 500,000 apprentices working in those programs.¹⁷ With significant federal support being directed toward the system from the current administration, we see little signs of these workforce development programs slowing down. In a June 2017 executive order, President Trump doubled the amount of money allocated for apprenticeship grants to \$200 million per year.¹⁸

So, why is it important to register your apprenticeship and what do you need to know in advance? We've provided answers to your most frequent questions below.

WHAT DOES IT MEAN TO REGISTER YOUR APPRENTICESHIP? WHY DO IT?

By registering your apprenticeship, your business validates that its program fulfills the national standards set by the U.S. Department of Labor – or federally-recognized State Apprenticeship Agencies – and will result in a nationally-recognized industry credential for your apprentices. In addition to the national recognition, employers can receive a variety of other benefits by registering their program, including tuition support, tax credits, complimentary federal resources, and access to the entire ApprenticeshipUSA network.¹⁹

WHAT ROLE WILL THE GOVERNMENT PLAY IN MY REGISTERED APPRENTICESHIP?

No matter whether your apprenticeship is registered at the national or state level, the Office of Apprenticeship (OA) or your State Apprenticeship Agency (SAA) will work with your business to administer the program. Responsibilities of the governing bodies include ensuring the program continues to meet the outlined standards, protecting the safety and welfare of apprentices, issuing credentials and certifications, and promoting the development of new programs through marketing initiatives and assistance.²⁰ Because of these responsibilities, employers may receive augmented support with their registered apprenticeship that they may otherwise not have access to.



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WHAT DO I NEED TO KNOW BEFORE BEGINNING THE PROCESS?

1. Verify that the occupation you want to register is an apprenticeable trade.

Though skilled trade occupations typically come to mind first when thinking about apprenticeship, the fact is that there are over 1,000 apprenticeable trades recognized by the Department of Labor.¹⁵ Generally, apprenticeable occupations are those that involve the acquisition of manual or technical skills and are universally recognized by an industry. While occupations in industries like manufacturing and construction fall into these categories, apprenticeable trades are now commonplace in industries like healthcare, hospitality, and information technology.

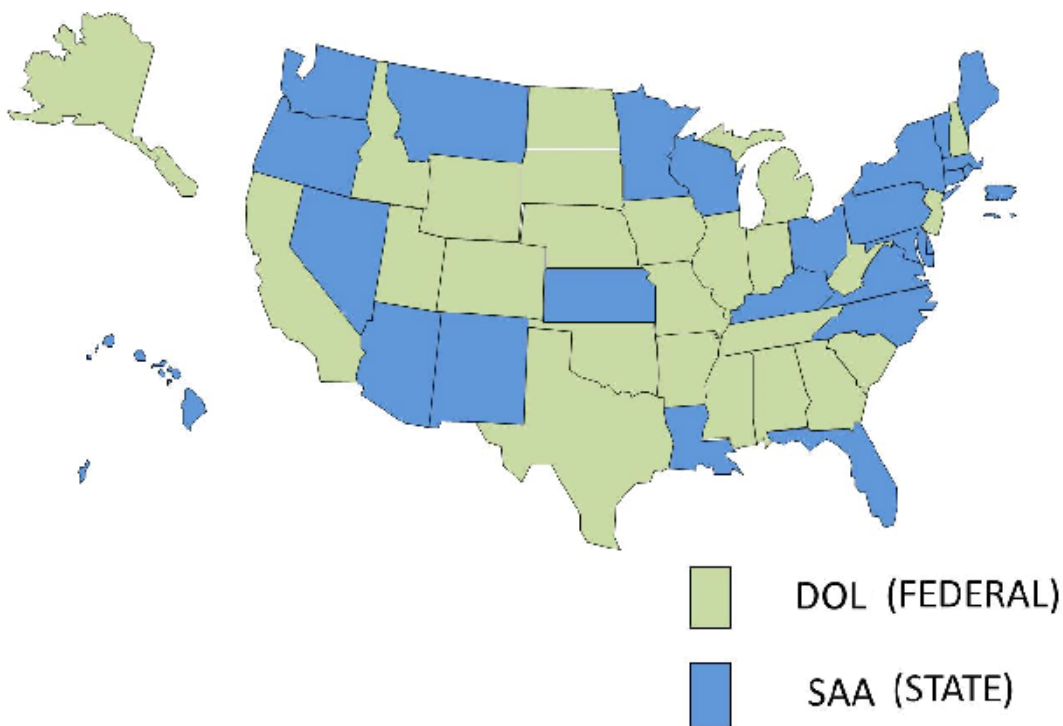




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2. Determine whether you need to register your apprenticeship at the state or federal level.

In the U.S., there are 25 states, in addition to the District of Columbia and Puerto Rico, with recognized state apprenticeship operations. To know where to begin your apprenticeship registration process, it's important to know what agency you need to reach out to in advance. Check out the image below to see whether your state has developed an SAA or utilizes the federal Office of Apprenticeship to register programs.²¹





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Conclusion

Apprenticeships, like manufacturing, have evolved in positive ways, and employers have become increasingly involved in making apprenticeships even more integral to the success of the country's economic bottom line. Penn Foster is among many entities playing an active role in providing effective workforce development solutions to employers and helping them design and implement new ways to address their skills gaps. One of the leading online educators and skills training providers in the country, Penn Foster is proud of its track record of making apprenticeship central to its approach toward mitigating the skills gap. Through our expansive partner network of hundreds of leading organizations, Penn Foster has provided the related technical instruction component of apprenticeship to thousands of apprentices.

By offering its skilled trades certificate and degree programs through an increasing number of partnerships with employers that offer apprentice programs, Penn Foster is now also one of the leading apprenticeship providers in the U.S. and provides training for more than 100 different occupational pathways. Penn Foster helps organizations build both registered and unregistered apprenticeships in all variety of industries and roles. Through the online delivery of related instruction, Penn Foster enables companies to scale their programs and accelerate their growth rate to match national demand.

To learn more about Penn Foster's capabilities in working with employers to create and administer apprentice programs, please contact partnersolutions@pennfoster.edu or visit www.workforcedevelopment.com.



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