

# THE NEW ERA OF APPRENTICESHIPS

Building Careers, Strengthening Industries

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## Introduction

As the landscape of the American workforce continues to evolve, the traditional pathways to a promising career are being reconsidered. The resurgence of apprenticeships offer a pragmatic alternative to the conventional, often costly academic routes typically pursued through colleges and universities. Apprenticeships in the USA, spearheaded by innovative institutions like the Institute for Workplace Skills and Innovation (IWSI) America, present a compelling proposition for skilling, upskilling, and reskilling the American workforce to meet the challenges of a rapidly changing economic environment.

At the forefront of this transformative approach is IWSI America, a dynamic force in workforce development for over two decades. IWSI America has not only collaborated with businesses and governmental bodies but has also led the charge in crafting modern, sustainable apprenticeship frameworks that benefit a diverse array of industries - from technology to healthcare, and beyond. The essence of their mission lies in their ability to bridge the gap between existing educational models and the real-time needs of today's industries, providing targeted training that equips workers with the necessary skills to thrive. Apprenticeships, under the guidance of IWSI America, are more than just training programs; they are an integration of on-the-job training and vocational education that pays apprentices while they learn, reducing the burden of education costs and simultaneously fostering a skilled workforce.

This model not only supports the economic structure by filling skill gaps but also enhances the personal and professional lives of individuals, offering them a direct route to meaningful employment and career advancement without the staggering debt often associated with higher education.

Moreover, IWSI America's role extends beyond just the formation of these programs. They are deeply involved in the strategic refinement of apprenticeship models to ensure alignment with evolving industry standards and work practices. This involves a meticulous process of identifying skill requirements, recruiting suitable candidates, and customizing training modules to fit specific industry needs. The result is a workforce that is not only skilled but also adaptable to new technologies and methods. In an era where the discourse around employment is predominantly focused on technological displacement and economic uncertainty, apprenticeships curated by IWSI America stand out as a beacon of innovation and adaptability. They offer a promising pathway for individuals across a spectrum of socioeconomic backgrounds, including traditionally underserved communities, thereby promoting inclusivity and diversity in the workforce.

Nicholas Wyman  
Executive Director, IWSI America



## IWSI America

The Institute for Workplace Skills and Innovation (IWSI) America is a work development organization that empowers enterprising businesses, non-profits and government agencies by unlocking the full potential of our most prized assets: people.

IWSI supports the development of modern apprenticeship programs that cater to a variety of participants, including young adults and those transitioning in their careers, enhancing broad-based workforce readiness.

For more than two decades IWSI America has worked with individual employers as well as states and localities to establish and build modern, sustainable apprenticeship programs. IWSI also advises on the design and implementation of new programs to help both non-profit and for-profit entities cultivate pipelines of talent to meet the needs of a dynamic workforce in a rapidly changing work environment.

For new apprenticeship programs and initiatives, IWSI America identifies the skills needed to fill talent pipelines and drive productivity. They also recruit target populations and customize training curricula to fit a particular industry or employer. Additionally, IWSI America identifies gaps or weak links in existing programs and initiatives, thereby improving efficiency. IWSI also helps new and existing apprenticeship programs establish mentoring, which reduces costly turnover for businesses, and creates a stronger workforce.

For nearly a decade, IWSI America has also teamed up with apprenticeship specialists to establish civil service apprenticeships in multiple states in the fields of IT, healthcare, transportation, and family services. In addition, IWSI provides consultative services to establish intermediaries, which support apprenticeships in several ways, such as engaging with state and federal apprenticeship agencies on program requirements and reporting. If an intermediary is handling the administrative side, a company or business can focus on defining the skills and responsibilities necessary to succeed on the job, and actually training apprentices.

IWSI America has worked with individual employers as well as businesses employing more than 4,000 apprentices. These innovative, successful efforts are active and growing and are well documented in both media and academic sources.

The core mission of IWSI is to spark collaboration and harness the inherent spirit in all of us. IWSI's unique methods bolster business strategy, enabling organizations not only to meet their objectives but redefine them in ways never thought possible.



# PART 2

## Setting the Stage for Success

The new work environment prioritizes collaboration, digital integration, flexibility and purpose, fostering a culture that supports innovation and risk-taking. It's about people and what they bring to the job, rather than just the process, which once made employees easily replaceable.

In essence, the definition of work has undergone a seismic shift. Job security and financial security are slightly less valued, as workers' priorities have shifted in the direction of purposeful employment, autonomy, engagement, and mobility. Younger generations such as Gen Z are seeking meaningful work, while both younger and senior employees are leaning toward flexible schedules.

And yet this new work environment must somehow navigate its way around old ways of thinking, outdated rules and regulations, and hierarchical systems that place a high value on titles. Valuable human assets are tucked away in silos rather than focusing on teamwork, interaction, and open communication. Of course, it will take time for more organizations to buy into this new mindset. The shift to a new work environment is an ongoing transition with some companies embracing the new world of work far more quickly than others.

Adapting to the new world of work means learning about and using the latest tools of technology, including AI, automation, augmented reality or new tools that are still in the incubation phase. But today's technology emerges not from some futuristic robotic wizards but from human beings who are curious, innovative, determined and searching for practical solutions to many concerns and issues, some small and others large in scale.

While we can achieve outcomes more easily these days using the latest technological tools, the changes we see today, including disruption, were not born in the twenty-first century. They are a byproduct of the curious, determined, innovative individuals who came before us. As one example of disruption, consider the cell phone. Alexander Graham Bell brought the first telephone to life in 1876, nearly 100 years before the invention of the mobile phone, which changed the way we communicate while providing extensive mobility.

But only a little more than 20 years later, in 1998, the mobile phone was disrupted by the Smart Phone, which integrated the cellular phone with computer technology. The point is that while disruptions change how we work, think and act, some are adopted quickly while others require a lengthy transition period as people adapt. Sometimes the disruption fails completely when people do not see the benefits, or the benefits are not significant enough for people to jump on board.



In the working world, remote work and hybrid work are disrupting the way in which many companies function. They are reshaping the hiring process, meetings, travel, communication, etc. But like most disruptions, not every person or business (or industry) is sold on the concept of remote work. In fact, there are an increasing number of businesses that are moving their employees away from remote work and once again into an office setting. Why? Because the benefits of mobile work do not benefit everyone or every business.

It might seem far-fetched to think apprenticeship could be a disrupter (for example, by disrupting college enrollment). Nonetheless, apprenticeship does meet some of the qualification requirements, as it provides significant benefits over the existing model. Apprenticeship programs reduce costs for employers (turnover and re-training) and also for the apprentices themselves, who are paid throughout the apprenticeship and will have a solid qualification and no college debt if they successfully complete it.

Like electric vehicles, which have existed since the late 1800s but only recently gained mainstream adoption due to advancements in technology and consumer demand, apprenticeships have a long history. Today, they are being refined and expanded to meet the needs of a modern workforce, providing significant benefits to both employers and employees.





# PART 3

## The Need for Skills Training

Change underscores the global landscape in which we now work and will be a feature of workplace life for at least the next generation. Continuous change, coupled with the need for continuous learning as new technology reshapes work, generates both excitement and anxiety in the global workplace.

To meet the demands of the changing business environment, companies will need to invest in training, upskilling, and reskilling. All are essential in ensuring employees stay competitive and effective. Thriving in a rapidly changing work environment requires flexibility, agility, and the ability to readjust and reinvent, on the part of both employers and employees. The ability to adapt even in the face of existential threats is crucial.

History shows that Americans have needed to pivot and make rapid transformations in the workplace before now. For example, during the Great Depression in the 1930s, job sharing was introduced by the Works Progress Administration (WPA) as a means of keeping more people employed, even if it meant lower salaries. The purpose of the program was to provide useful work for millions of victims of the Great Depression and thus preserve their skills and self-respect. It was also felt the increased purchasing power of the newly employed or re-employed would stimulate the economy.

More recently, the Covid-19 pandemic brought remote work to the forefront of the global workforce. The crisis also fostered a people-first mentality in the minds of employers, and in some cases built stronger bonds between employers and employees, who were on equal footing when it came to coping with the fears and uncertainties that accompanied the pandemic.

Now, in a post pandemic world, we need to make learning and training top priorities – which is why apprenticeships are so important. Continuous learning (aka lifelong learning) is essential for success in the ever-evolving world of work. This may include ongoing training, seminars, classes, shadowing experienced employees, or individual one-on-one training with an experienced mentor.



### **The Benefit of Mentors**

Like apprenticeships in general, the idea of having mentors in the workplace is reemerging. There has never been a better time to have someone in your corner. And apprenticeship programs almost always include mentors.

Mentors use their years of experience and knowledge to answer questions and provide sage advice, which is especially significant for younger employees new to the working world. A good mentor should also provide encouragement; and knowledge of the company, the culture, the industry, and best practices. A sense of camaraderie between mentor and apprentice very often emerges as apprentices familiarize themselves with the work, work environment and industry best practices.

Mentors provide a way to improve job performance and personal development. They can help apprentices adapt to change, build their self-confidence, advance their careers, and feel valued in a work environment.

### **The Soft Skills Are Not Forgotten**

According to a 2023 LinkedIn survey, 92 percent of talent professionals believe that soft skills are just as important, if not more important, than hard skills. Shockingly, only 37 percent of employers feel their entry-level employees have the necessary soft skills. Today's apprenticeships emphasize the need for effective communication, which includes active listening and asking questions. Employers also need workers who are resilient and adaptable.

Apprentices who are flexible, agile and adaptable to change are likely to be successful as they move into full-time positions. This emphasis on soft skills is in strong contrast to the apprenticeships of previous generations, which focused on learning and performing a single task or two, frequently in construction-related jobs. But many single-skill jobs have been shifted to technology, and most jobs today require more than just a single skill. There's an increasing need for soft skills, especially in solving problems and making decisions.

The concept of soft skills is another example of what seems new today but is grounded in the past. Andrew Carnegie, Warren Buffett, Steve Jobs, Walt Disney, and former apprentice turned notable statesman Benjamin Franklin were among many great leaders who had exceptional 'soft skills' long before the term became trendy.

The universal need for collaboration and problem-solving can separate top performers from their peers. Critical thinking, attention to detail, resilience, empathy and being open to innovative ideas are part of total skills package of the modern apprentice.



# PART 4

## Defining Apprenticeships

According to the United States Department of Labor (USDOL), an apprenticeship combines paid, on-the-job training with classroom instruction to prepare workers for highly skilled careers. Workers benefit from apprenticeships by receiving a career-focused education with work-based learning that prepares them for well-paying jobs. And employers benefit from the ability to recruit, build, and retain a highly skilled workforce as well as the productive contributions undertaken by apprentices.

### **Aren't Apprenticeships a Thing of the Past?**

Not any longer. From 2016 to 2023, states registered more than 15,900 new apprenticeship programs – onboarding over 1.3 million new apprentices – and reported that more than 414,000 apprentices successfully completed registered apprenticeship programs. The resurgence of apprenticeship programs was largely fueled by over \$500 million in federal grants. According to the American Institutes for Research® (AIR), “states are key drivers of a national effort to expand the U.S. Registered Apprenticeship system and position apprenticeship as a go-to talent solution for workers and employers in every sector of the economy.”

According to apprenticeship.gov, at the start of 2025 there are nearly 680,000 active apprentices in the United States, working and learning in a wide range of industries at registered apprenticeship programs in all 50 states.

### **Misconceptions about Apprenticeships**

Before diving into all the positive aspects of apprenticeships in America, let's dispel four of the most common misconceptions.

#### **Misconception # 1.**

#### **Apprenticeships are Only for Building and Construction Trades.**

**The Truth:** According to Urban.org, “widely used for many years as an effective recruitment practice in the building and construction trades, the apprenticeship model has recently been embraced by industries such as advanced manufacturing, accounting, healthcare, IT, and hospitality.”

In fact, according to the U.S. Department of Labor, more than 1,000 occupations have been recognized as being apprenticeable. Apprenticeships are increasingly considered as an alternative for training in the science and engineering workforce. And, as of January 2024, four states (California, Vermont, Virginia, and Washington) allow people to become lawyers through an apprenticeship program without attending law school.



**Misconception # 2.**

**Apprenticeships Lead To Lower Paying Jobs**

**The Truth:** Starting salaries vary considerably. A variety of employment surveys, as well as the DOL, post numbers ranging from \$40,000 to \$80,000 depending on the job, the industry and the location.

**Misconception #3.**

**Apprenticeships and Internships Are the Same Thing**

**The Truth:** According to Urban.org, apprenticeships are different from internships. Most internships are short-term and do not lead directly to full-time employment. While interns gain work experience, they are not considered employees and are typically unpaid. Apprentices, however, are paid employees who are formally trained on the job and certified to work in a specific industry.

**Misconception # 4.**

**Apprenticeships Are for Entry-Level and Blue-Collar Jobs**

**The Truth:** According to World at Work, an Arizona-based company that provides education and research for HR and rewards professionals, "Once seen as an option solely for training young workers for blue-collar jobs, apprenticeships are rapidly becoming a new way for employers to gain skilled employees for a wide variety of roles and from a diverse pool of candidates who possess a range of education and experience levels." FYI: White collar fields for apprentices include healthcare, accounting, data analysis, design, business operations, billing, IT and cyber security.

"All sectors are struggling to find employees who possess the requisite skills and training and many are turning toward apprenticeships to fill their needs," says Julie Lammers, Senior Vice President, Advocacy and Corporate Social Responsibility, American Student Assistance (ASA).



## What do Apprenticeships offer?

### 1. Hands-On Learning

Apprenticeships offer hands-on learning, which means students are engaging in the actual practice in which they are looking to excel. Hands-on learning often increases retention rate, because the student participates directly in the learning experience.

### 2. Preparing Apprentices to be Job-Capable

Today's apprenticeships are designed to create job-capable employees as opposed to job-ready workers. Unlike apprenticeships in the last century, which focused primarily on a specific skill or position, most of today's apprenticeships incorporate skills across different fields. This approach gives an apprentice greater flexibility in the workplace, which is extremely valuable in a rapidly changing work environment in which new processes are often introduced. Being job-capable also opens the door to additional opportunities and underlines the need for continuous learning, which is essential for personal growth. For a detailed comparison of Modern Apprenticeships, Career and Technical Education (CTE), and Internships, see the table in the Appendix.

### 3. Time Savings

Apprenticeships are time savers. Rather than running from the classroom to a job (which is often not in the student's field of interest), an apprentice saves time by learning and working concurrently. As a result, apprentices enjoy less commuting, less reading about the job and more learning while they are actually doing the job.

### 4. Career Options

For students graduating high school who know their chosen career path requires a college or advanced degree, college is clearly the first step in the plan. However, there are a rapidly increasing number of jobs today that do not require a college degree, such as web developers, IT support specialists, data analysts, software engineers, technical writers, graphic designers, electricians, construction managers, air traffic controllers, radiologic technicians, pharmacy technicians, aerospace technicians, and animators, to name a few. These are among the many jobs found in apprenticeship programs.

### 5. Fewer Barriers to Entry

While you do need to be accepted into an apprenticeship program, colleges typically have greater barriers to entry. Besides high tuitions, colleges review standardized test scores and ask for personal essays and letters of recommendations. They also want to know about AP courses taken, extracurricular activities, outside interests and other details, most of which have little or nothing to do with the various skills necessary to succeed at an actual job.



## College vs. Apprenticeships

### Why Does College Get So Much More Attention Than Apprenticeships?

#### The Short Answer Is: Money, Sports, and History

Quite a few colleges have amassed significant endowments, which are an accumulation of numerous assets donated to the college and university for decades to support their missions. As of 2023, according to Investopedia.com, Harvard University had an endowment of \$53.1 billion, which is more than any other university in the nation. These assets are used for new academic programs, research, scholarships, fellowships, libraries, student housing, attracting notable speakers and faculty, funding athletic programs and teams, building sports facilities, and recruiting new students.

While apprenticeship programs receive millions of dollars annually, all of the nation's apprenticeship programs together cannot match any of the top university endowments. Colleges also generate a lot of exposure and familiarity because of their sports programs.

Consider how many college football or basketball games you'll find on television in the fall and winter. And no, you won't find any grid iron games taking place between apprenticeship programs. Unlike collegiate sports, apprenticeship programs focus solely on career training and development, without the extracurricular activities associated with college life.

Many colleges also have long histories, notable alumni, expansive campuses, and for some students a family history. While not as common as it once was, legacy enrollment is still practiced at some schools.

Yes, fun and socialization at college is part of the overall experience, and we are not trying to diminish the college experience for those who wish to attend. However, according to the Education Data Initiative (EDI), more than 23 percent of students drop out of college each year. This is typically because of the financial burden, poor academic performance, lack of engagement or interest, family issues, or mental health issues such as anxiety, depression or fatigue.

The point is there are other legitimate options when it comes to career training and preparation. Apprenticeships offer a secure learning environment in which individuals can follow their own path and have fun and socialize while doing so. The reality is that these are two different approaches with potentially the same very rewarding outcome: a successful and engaging career.



### **The Cost Differentiation**

**Costs:** The average cost of college tuition has been increasing for many years. According to [educationdata.org](https://educationdata.org), the average annual cost of college tuition and fees in 1974 was \$512 for a four-year public college and \$2,130 for a four-year private college. As of 2023, the average annual cost for a four-year public college was \$9,750, and for a private college, \$35,248.

Conversely, the cost of an apprenticeship program is typically zero, since employers usually cover the training costs and apprentices do not have to pay for their education. In fact, apprenticeship programs pay their apprentices. The only expenses apprentices may incur are for the purchase of specific tools or materials required for their trade, and transportation.

While college does offer a lot of options for joining clubs, teams and various groups and organizations, one group you **do not** want to join is that of young and middle-aged individuals trying to dig out from under massive student loan debt which, as of the second quarter of 2024, totaled \$1.74 trillion, as reported by the Federal Reserve.

### **Shorter Timeframe to Completion:**

An increasing number of college students are completing their four-year college diploma in five or even six years, after which they must go job hunting. In sharp contrast, apprenticeships may take one year to three or four years to complete. According to the US Department of Commerce, 91 percent of apprentices find employment (typically with the business or organization that sponsored the program) shortly after completing the program. Gone are the countless stressful hours spent writing resumes, editing them for each specific job opening, and going to numerous interviews before landing that first job.



### **Is College Losing Its Luster?**

According to The National Center for Education Statistics (NCES), undergraduate college enrollment dropped from 18.1 million to 15.8 million between 2011 and 2023. Much of this decrease is attributed to the high cost of college, an uncertain economy, the Covid pandemic in 2020 and 2021, and the emergence of new career paths that may not require a traditional college degree. Since 2011, enrollment has decreased at a rate of about 1.5 per year as reported by NCES.

While college education has declined by 10 percent over the past decade, apprenticeships have increased by 63 percent since 2012, according to a Wall Street Journal article from March 2023. The same Journal article also cites the Covid-19 pandemic as prompting “a historic disengagement from school.” As a result, there’s been a shift away from the traditional American “college-for-all” model. Instead, younger generations are embracing the fact that they have options.

In short, college is not for everyone, nor is it the only pathway to success. There are numerous success stories of people who did not attend college, or left college to pursue other pathways to success, including those of Bill Gates, Oprah Winfrey, Michael Dell, or one of the many individuals who completed one of the 27,000 apprenticeship programs in the United States.

### **Registered Apprenticeship Opportunities**

In the United States, registered apprenticeships are nationally recognized and managed by the Department of Labor (DOL). A once narrow field of job possibilities has expanded significantly to meet the needs of business and industry while also fulfilling the goals and dreams of apprentices – whether they’re individuals just entering the job market or those looking for career stability their current job does not provide.

Registered Apprenticeship opens the door to exciting career pathways where employers can educate, develop and prepare their future workforce while providing individual apprentices with essential work experience. At the same time, apprentices earn fair wages with steady pay increases. Perhaps most significantly, it provides a means by which people can start careers they find meaningful and fulfilling.

# PART 7



*Dr Robert Lerman*

## Wisdom from the Godfather of Apprenticeships

In November 2024 Robert Lerman was named that year's winner of the Harold W. McGraw, Jr. Prize in Education for Lifelong Learning. Those who know Lerman's body of work were not at all surprised. Lerman, who received his Ph.D. from MIT in 1970, is an Emeritus Professor of Economics at American University, a Fellow at The Urban Institute, co-founder of Apprenticeships for America, and founder of the American Institute for Innovative Apprenticeships, an organization dedicated to supporting and encouraging apprenticeships in the United States.

For nearly fifty years, Lerman has been a leading advocate for apprenticeship. He believes wholeheartedly that college is not for everyone and, at the age of 80, continues to champion apprenticeship as an alternative means of starting a career. As college tuition reaches new heights, Lerman's message is resonating with people who recognize that on-the-job training is essential in the face of global skill shortages. Yet, Lerman also knows that change takes time, and replacing degree-based hiring with skills-based hiring is a hard sell in a college-oriented society. While Lerman did not start his own career in an apprenticeship program, he did start working while in college, in his father's company, Steel Warehouse, founded in 1948. It was while working in the warehouse that he learned skills come in various forms -- from academic skills to practical skills to trade skills that can be learned and mastered through appropriate training and hands-on experience.

### **A Little History**

"I think it's important that people know about the Davis-Bacon Act of 1931," Lerman notes, "which has played an important role in apprenticeships by guaranteeing what we call prevailing wages. The Davis-Bacon Act required that any project subsidized by government had to pay prevailing wages to the workers -- except for registered apprentices. Therefore, if you were an apprentice, the contractor was not required to pay you those high prevailing wages which were typically union wages. This led to contractors developing apprenticeship programs because they could pay the apprentices lower wages while training them in the skills they needed to do various jobs. This was the upside -- apprentices were getting the training and education to excel at the jobs once they became employees."

In essence, this was the starting point for apprenticeships as we know them today. Says Lerman, "once the apprentices completed the apprenticeship program they would earn prevailing wages. Over the course of many years, excellent high-skill programs were developed as a training ground for future employees of a company." He adds that "for many years, these apprenticeships were primarily in the building trades. This, however, has since changed significantly."



### **Lerman on Apprenticeship Programs and Sponsors**

Lerman describes sponsors succinctly as “the group, or company that determines what skills are going to be taught for a specific occupation.” He notes that “sponsors report to the Department of Labor, where they track the progress of everyone in the apprenticeship program and provide information on who completes the program and receives a certificate.”

While Lerman has seen significant changes in apprenticeships over the past five decades, he has noticed an increased pace of change in recent years. And thanks in part to the influx of technology, Lerman has seen a much wider range of occupations covered in apprenticeship programs.

“Broadly speaking, in some sectors we are seeing a growing interest in newer programs, such as in healthcare occupations as well as some of the IT jobs. An increasing number of businesses in various industries are now starting out with apprenticeships,” says Lerman proudly.

One industry that is now starting to embrace apprenticeship is education. Lerman expects to see more teaching apprenticeships, as both Federal and state governments have increased efforts and funding for apprenticeships. “This is also an indicator that apprenticeships in America are on the rise,” says Lerman.

### **A New Breed of Sponsors**

Sponsorships have also evolved over Bob Lerman’s long run promoting apprenticeship programs. “Today, most apprenticeship programs are still sponsored by companies but they are also sponsored through union management relationships, high schools or even industry groups. For example, the Wireless Infrastructure Association (WIA) sponsors apprenticeships for the telecommunications industry,” says Lerman, referring to WIA’s Registered Apprenticeship Program (TIRAP), a competency-based program designed to increase the productivity of the telecommunications workforce.

### **Decades of U.S. Military Support for Apprenticeships**

Lerman is also quick to remind us that the United Services Military Apprenticeship Program (USMAP), which began in the mid 1970s, is the largest registered apprenticeship program in the country, with roughly 115,000 apprentices in U.S. military active-duty programs. “A lot of the apprentices first go for school-based instruction and then go to their military occupational specialty,” explains Lerman, noting that “some U.S. military personnel are in an apprenticeship program while still working within the military.”



**To Qualify for a Certificate of Training in the USMAP, an Apprentice Must:**

- Be actively participating
- Have completed at least 50 percent of the required program hours (including pre-registration credit)
- Have submitted at least one semi-annual progress report
- Be within 120 days of their active-duty expiration date
- Have completed OJ and related instruction for the apprentice to accompany such requests

*List above courtesy of the USMAP*

Lerman is aware of how difficult it is to sell apprenticeship to employers and policymakers in a “college for all” environment. In a 2024 issue of *Forbes*, journalist Michael Bernick wrote, “Lerman’s studies of labor markets over the past four decades have convinced him that academic attainment and test scores bear little relation to the skills that employers need, especially for mid-level technical jobs. But the thought process of educators and even employers continues to link skills to degrees.”

But Lerman remains committed to advancing skills training and raising awareness and understanding of apprenticeship as a viable option. A growing number of young people are seeking careers that don’t require a college degree, and prefer on-the-job training to classroom academics.

**Rewards Along the Way**

Dubbed “the Godfather of Apprenticeships” by *Forbes Magazine*, Bob Lerman has been the recipient of many awards for his years of dedicated work in the field. Yet his greatest reward is watching an increasing number of young people complete apprenticeship programs and proceed into a wide range of jobs, many of which did not exist when Lerman began his mission to bridge the gap between college degrees and apprenticeships.



# PART 8

## The Role of Mentors

### Mentoring in Practice

Mentorship is a critical component of any apprenticeship program – as important as developing the skills profile and curriculum. Without mentors, an apprenticeship program can become just another job training exercise, with a much greater risk that new employees will slip through the cracks and ultimately leave.

The key idea behind mentorship is not new: older, more experienced employees pass on their hard-won knowledge to younger workers. Many long-time employees – like older adults in general – are happy to pass on what they've learned to a younger generation. But mentorship in the context of apprenticeship requires a bit more planning and training. Apprenticeship mentors fill many roles, each of them crucial to the well-being and development of the apprentice.

The goal is not only for apprentices to learn the skills needed to do the job, but for them to become an integral part of the workplace and stay on with the company when the apprenticeship ends.

Mentors can be recruited from different areas, depending on company structure. Some businesses might have quite a few older employees, maybe nearing retirement. By recruiting some of these older employees as mentors, a business can not only make great use of their experience and expertise, but also free up senior positions for upcoming staff. However, older employees are not the only sources of mentorship. For some businesses, it might make more sense to have a line supervisor act as mentor – someone directly superior to the apprentice, and maybe not so long out of their own apprenticeship. The key connector is the role the mentor plays.

And the first role, of course, is that of instructor. The mentor is there to instruct the apprentice in the specific skills needed to accomplish the job. But not just to accomplish the job – to excel in the job. The mentor can do this in numerous ways. Explaining the job requirements is probably the first step, with the mentor outlining what's needed to perform the work correctly. Following that might be direct demonstration, which allows the apprentice to see exactly what must be done, from someone who knows exactly how to do it. At some point, the apprentice will try out the work, under the mentor's guidance and instruction. None of these methods stand alone – each is interwoven with and complementary of the other. And a skilled mentor will alter the balance among them as needed.



Because things won't always go right, even if you're doing everything right, another skill a mentor can help an apprentice learn is troubleshooting, which involves critical thinking (the first task usually is figuring out what the problem isn't) and problem-solving skills. While not specifically task-related, they're essential job skills.

Mastering job skills is not the only component of the mentor-apprentice relationship, however. What makes the mentor so crucial to apprenticeship is their ability to unlock other vital keys to success in the workplace. Understanding workplace culture, for example, is very important for new employees. If the workplace emphasizes teamwork, apprentices need to know they can and should assist other employees if called on to do so. And they'll find out that help is reciprocal, that they should call on other team members if needed, and don't need to solve every problem alone. Other aspects of workplace culture might be picking up after yourself or refilling used supplies. Knowing the culture makes an apprentice much more part of the team.

In addition to workplace culture, it's important for the mentor to pass on workplace norms. For instance, young apprentices don't always understand that timeliness is not an option, but a necessity. Being where you're supposed to be, when you're supposed to be, is how you show yourself to be reliable, committed to the job, and committed to your team members. Another important workplace norm is learning how to communicate. Young employees need to know how to ask questions and add their own input in a professional, respectful manner. Mentors can help apprentices learn these norms, so they become valued employees in addition to skilled ones.

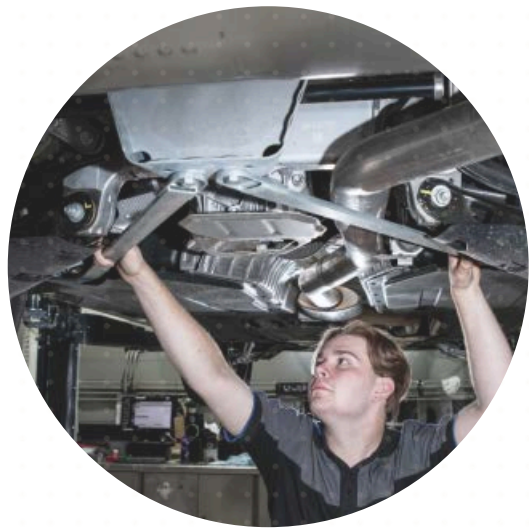
Learning workplace norms and culture are sometimes referred to as "soft skills," but this label understates their importance in workplace success. Not only are these skills transferable, but they're in great demand. Business owners want team players, communicators, respectful co-workers and problem-solvers. Gaining these soft skills will help an apprentice succeed in the program, as an employee with their sponsoring company, and as an employee at any other company. Mentors are the key to imparting soft skills in an apprenticeship.



Mentors play another key role for the apprentices under their guidance: supporter and confidant. New employees – and particularly those who aren't part of the mainstream workforce – need someone to talk to and confide in when things aren't going well. They need someone who will listen, keep their confidence and help them get past difficult times. Having a mentor in your corner might be the difference between sticking with an apprenticeship and walking away.

Finally, it's important to note that mentorship is not a one-way street. Mentors can also learn from apprentices, who might have a new approach to the work or the workplace, bringing in fresh ideas that can revitalize a business. The mentorship can be just as enlightening for the mentor as it is for the apprentice.

To sum up, mentorship is a vital component of any apprenticeship program. Mentors share their wisdom and experience on specific job skills, but they also do a lot more. They bring apprentices into the workplace as a whole and help them thrive. They teach them skills that will bring them success in any job, help them gain confidence and make them a valued member of the team. The mentor role is valuable both to the apprentice, who learns vital skills, and the company, which gains a fully rounded and committed employee.





## Value to Employers

We've explored the demonstrable benefits of apprenticeship to the apprentices themselves, who get training in the classroom and on-the-job, and rather than spending a ton of money on tuition, are paid for their work. But what about the businesses that hire apprentices, often from programs they have sponsored. Do they benefit from apprenticeship? The short answer is a resounding 'yes.'

### Increased Productivity

According to the National Bureau of Economic Research, apprentices are 10 percent more productive than their non-apprentice counterparts. Additionally, a study by the U.S. Department of Labor found that businesses that participate in apprenticeship programs have higher employee retention rates than businesses that do not participate in such programs. Part of the increased productivity comes from a positive company culture that embraces continuous learning, on-the-job training and employee engagement. When employees feel actively involved in the business – something the hands-on-training of an apprenticeship facilitates – they will be more engaged and take greater pride in their work and the work of their team. The result? More productivity, which is a win-win for everyone involved.

### The power of mentorship for employers

Mentorship isn't just about apprentices--it can transform workplace culture in unexpected ways. Take a large hospital that hesitated to implement mentoring, fearing it would burden HR.

Instead of centralizing the effort, they opened it up to mid-career professionals across departments--finance, accounting, operations. The response? Overwhelming. Employees saw mentoring as a chance to give back, develop leadership skills, and feel more connected to their work.

After some basic training (which they enjoyed), mentors became highly engaged, morale lifted, and productivity ticked up across teams. The company had worried about extra workload but instead unlocked hidden enthusiasm, strengthened internal networks, and built a more invested workforce--all without hiring extra staff.

### Increased Training Possibilities

In a rapidly changing business environment, there's a high demand for employees who can jump right into a position with the skills to handle, and even excel at the job. Unfortunately, the gap between the need for well-trained, skilled employees and the population with such skills is widening, especially when it comes to technology, which is constantly advancing. This is where the apprenticeship approach especially benefits employers. No longer focused only on a single skill, modern apprenticeship trains apprentices in a variety of skills, many of which are transferable. This means the workforce of tomorrow can take on more functions and handle new challenges. Learning real-world skills will allow future workers to come into a job with flexibility, resiliency and a can-do mentality.



They'll be prepared not only for today's jobs, but for jobs that don't even exist yet. And they'll be able to move more easily up the company ranks, as they'll have leadership skills in addition to job skills. And finally, by equipping apprentices / employees with transferable skills, companies will create employees who are ready to work with colleagues, customers and clients all over the world. As businesses expand their global identities, they'll have employees already primed to join the globalized workforce.

### **Retaining Employees**

When business-sponsored apprenticeship programs show an ongoing interest in the training and wellbeing of their apprentices, they're more likely to be able to retain those individuals as they move from apprentice to full-time employee.

In-house training, coupled with mentorship provided through the apprenticeship program, typically creates a stronger bond between apprentices and employers – a bond built on trust and familiarity. This type of bond often leads to a longer retention rate. Like the sports world, where professional teams bring talent up through their minor league affiliates, creating your own pipeline of new and well-trained employees can reduce turnover.

Apprentices learn not only specific job skills, but also the nuances of a company. And apprentices in the same program often bond with one another – another boon to retention rates. Better retention saves businesses time and money.

### **Saving Money**

Recruiting talent, hiring and training workers externally can be costly. Training employees internally minimizes this cost. There's an additional financial incentive in government tax credits to companies that have created and successfully run apprenticeship programs.

### **Building a Stronger Business Culture**

Apprenticeship programs can help build a business culture or enhance the existing culture because they exemplify teamwork and collaboration while encouraging the need for ongoing learning. They also illustrate a commitment to expanding the company, with a focus on developing new talent. In essence, businesses that create and support apprenticeship programs show they are forward-thinking companies with a culture of growth, new ideas and innovation rather than one built around old-school norms, resistance to change and long-standing ways of conducting business.

Apprenticeship programs also help build a sense of loyalty. And while apprenticeship programs are not new, their resurgence demonstrates an innovative approach to building, developing, and nurturing a strong company culture. Remember, this is not your grandfather's apprenticeship program. It is part of a rising trend that values a more inclusive, engaged business culture than in previous decades.



# PART 10

## Apprentices Talk about Apprenticeships

Makayla Braeuner is an 18-year-old woman working as an electrical technician for Proctor and Gamble's Cape Girardeau location in Perryville, Missouri. Thanks to one of the many apprenticeship programs offered by P&G she was able to get an early start on her career. "I went through the program, which took a few months, and then took a test to work for P&G. I waited for the results, and when I passed they interviewed me and ended up hiring me," explains Makayla, adding "I'd say this for sure, it was one of the best decisions I've ever made – I'm glad I decided to do it."

Makayla was able to select from a range of P&G programs covering fields that included engineering, manufacturing, and business management. All these programs, including the one Makayla was in (electrical tech), combined both classroom learning and on-the-job training.

"It's a very good program and has really benefited me greatly," says Makayla, noting that along with on-the-job training, she shadowed experienced technicians, which "was a wonderful way to learn how things are done".

From a social perspective, Makayla says "I've made friends through the program and all the guys I work with are very kind and easy to work with." Taking a broader look at where she is today, Makayla says,

"There's no way I would have been able to do the things I do now if I had tried learning it all on my own. It [the apprenticeship] was a good start for my future and will definitely benefit me for the rest of my life."

One of the most significant aspects of apprenticeship is that there are fewer hurdles to entry. Rather than relying on test scores such as SATs and college entrance exams, apprenticeships look for people who want to get a jump start on their careers. Makayla says she was happy that it was not a long stressful process to get started in an apprenticeship, but she agrees that "you need to be prepared to work hard."



### Meet Adam Romero

Graduating with a high school diploma, an associate's degree and as a qualified machinist sounds extraordinary, but Missouri's Adam Romero, 17, has a good chance of achieving all three. Currently, he's a school-based machine operator apprentice for an aerospace and military defense machining company, Seyer Industries.

"I get to work on different machines as the work requires. Now I'm working in a bottleneck area. The faster you work, the more you get done and the better you are as a machinist. I'm currently running two machines, plus an auto-loading robot that I have to write a mini program for so it can pick up pallets and move them to bigger machines, saving us having to do it by hand. I'm pretty hyped about running those by myself," explains Adam.

Adam works up to 24 hours a week at the company while managing his studies at Fort Zumwalt North High School. He takes courses daily in chemistry, advanced placement government, college algebra, American literature, and metals.

"I had advanced math/algebra class in eighth grade, so I could take college algebra in high school. That meant I didn't have to do as many mandatory classes in high school. I knew back then that I wasn't good for college. I wanted to work with my hands, see what I can make. So, when my teachers recommended I do those extra classes, it made sense," says Adam.

Romero offers some advice for anyone considering a school-based apprenticeship. "I would say work less because school is more important. If you start failing school, then you can say goodbye to the apprenticeship."

Romero is considering going for a four-year degree, but for now wants to work on the floor "as long as he can." He also feels a strong connection with Seyer's culture of quality and as a result takes great pride in his own work.



### **Meet Gage Kellett**

At 19 years old, Gage is already working toward his future with a multi-faceted plan. He shoots archery at a professional level while also attending Lindenwood University in St. Charles, Missouri, where he is on the school's archery team (FYI, professional archers can make anywhere from \$35,000 to over \$150,000 annually through tournaments and/or sponsorships). At Lindenwood, Gage majors in business.

At the same time, Gage is enrolled in an apprenticeship program where he works as a welder at Custom Cut Fabrication and Welding in southeast Missouri. "I wanted to do archery and at the same time have something to fall back on," says Gage, who carefully arranged his schedule to include college, archery practice, competitions and his welding job so they don't overlap.

"It's sort of the best of both worlds. I'm learning a trade through job training from guys who have been doing it for a long time while getting paid, and still working toward a college degree. Then I'm also participating in something I really enjoy." As an additional benefit, Gage adds that he "has made what may be some life-long friends through the apprenticeship and at school."

It was while he was attending Jackson High School that Gage learned about the apprenticeship program from the school's career technology department. "They ran programs to provide jobs and to help kids out," explains Gage, who says he already wanted to get into the welding business before he started learning the ins and outs of welding.

Gage needs to reach 2,500 hours to complete the apprenticeship program and officially become an employee at Custom Cut Fabrication and Welding Company. He's more than halfway there already, in his sophomore year of college, and is enjoying the various options and opportunities he has created for his future.



### **Expanding Apprenticeship Access: Programs for People with Disabilities**

One of the most overlooked groups when it comes to steady employment has long been disabled individuals. Unconscious bias, misperceptions and doubts about the interests and abilities of people with disabilities can be barriers to employment, along with physical barriers that impede access to jobs.

Modern apprenticeship has opened the doors to this group with programs that benefit individuals with disabilities. As a result, a growing number of individuals with disabilities have successfully taken part in apprentice programs specifically designed to meet their needs. From the point of view of disabled apprentices and program developers, these programs have been a win-win for both employers and employees.

### **Kansas City's Down Syndrome Innovations Program**

Amanda Myers is the Employment Coordinator for Down's Syndrome Innovations in Kansas City Missouri. "Our apprenticeship program helps young people (18+) with Down's Syndrome become productive employees," says Myers, adding that "the youth apprenticeship program was started in 2023 with 24 people, and it has been quite successful." Meyers helped form a partnership for the program with Nautical Manufacturing and Fulfillment, a third-party logistics company that offers supply chain services to businesses.

Among their clients are Target and Wal-Mart, which they assist with packing, loading and shipping products from their warehouses to various retail locations.

Debbie, who assembles and loads boxes on a rapid assembly line says, "I like working in production and have become very fast at it." She also adds, "I really like working with my friends," referring to the larger group which has bonded during their months in the program.

Jacob, who has been working in the program for 15 months, says "I make boxes, load them and also assemble and load the pallets [the wooden platforms used in warehouses to store and stack goods so they can be moved by forklift for shipping]."



Debbie, Jacob and the 22 other participants of the apprenticeship program have a busy schedule, starting with a few hours working in the factory and followed by Ace Academy classes for their RTI Technical Instruction.

The program also includes an occupational therapist, speech and language pathologist, behavior analyst, and wellness coordinator. “Everyone on our team teaches classes. We teach everything that could impact the ability of the apprentices to stay employed. We keep track of their physical and mental and health while they learn their skills,” says Amanda, who emphasizes the skills learned can be used in numerous kinds of jobs. She also takes the apprentices to other job sites so they can be exposed to a variety of career options.

The program has seen great success. “We spoke at an apprenticeship conference in November 2023 because the program we created can be replicated across other states,” explains Amanda, adding that they’ve even won an award. Down’s Syndrome Innovations is one of many community programs that help people with disabilities get job training in the classroom and working on-site, and it serves as a productive model of what such apprenticeships can do.

Programs like Kansas City’s Down Syndrome Innovations and California’s Ready, Willing and Able demonstrate how apprenticeships can provide meaningful career opportunities for people with disabilities. While Down Syndrome Innovations focuses on individuals with Down Syndrome in Missouri, Ready, Willing and Able is a statewide initiative in California that supports a broader range of individuals with disabilities.





“I would never have thought that I would be able to go into the medical field and come out confident and learning about all these medical terms that I will use for my career.”

*Joyce Lui completed an apprenticeship as a Medical Biller & Coder through the Ready, Willing & Able program.*

### **The Ready Willing and Able Program**

Launched in May 2022, the Ready, Willing and Able disability employment initiative is a new approach to creating long-term employment opportunities for Californians with a disability. RWA leverages the unique features of the mentored apprenticeship model to help Californians with a disability prepare for, start and maintain ongoing employment.

It’s an approach that’s already paying off. The program has helped Californians with disabilities access apprenticeship pathways and successfully secure exciting full-time career opportunities. It is also providing California employers with a blueprint on how to use apprenticeship to bridge the disability employment gap and expand the diversity and skills profile of their labor force.

Ready, Willing and Able provides a multitude of benefits for participating individuals with a disability, including access to a competitive wage from day one, ongoing personal case-management support and workplace mentoring, a structured training plan with a clear pathway to a nationally recognized qualification or associate degree, and ongoing employment opportunities after completing the registered apprenticeship.

While the initiative is focused on creating registered apprenticeship opportunities within the allied health sector in Orange County, support from employers, disability support service providers and community groups is likely to result in the program expanding its scope of services in the coming years. Ready, Willing and Able has already successfully placed many Californians with a disability into rewarding, ongoing employment in allied healthcare, clerical and manufacturing occupations.

Currently, Ready, Willing and Able works with CVS, West Los Angeles College, Healthcare Career College, and the Uniquely Abled Academy, but the program continues to seek more employer partners to create long-term employment opportunities for Californians with a disability. For more information on how your organization can get involved, visit [www.readywillingable.us](http://www.readywillingable.us)



### Meet Michael Hasrouni

Michael Hasrouni was attending a job fair in Southern California when he learned about apprenticeships programs, and in particular Ready, Willing and Able, a program in which individuals with a disability can get hands-on training in a real-world work environment.

After completing an apprenticeship program at Healthcare Career College, Michael started a job as a medical billing and coder professional at ACEF Enterprises in Los Alamitos CA, where he still works today.

“I did very well during the apprenticeship,” says Michael. He greatly appreciated the teacher and others who guided him through the learning process. “They were always available to help you,” notes Michael, adding “I’m enjoying what I’m doing and now they are giving me more responsibilities.”

Looking back, Michael, now 26, says he would recommend the program, explaining that the material is taught very clearly and there is plenty of hands-on experience. He also met people through the apprenticeship and has had social interactions with fellow employees at the job.

Ready, Willing and Able (RWA) is a partnership between the California Department of Rehabilitation and the Institute for Workplace Skills and Innovations America (IWSIA), which helps California residents with disabilities access full-time career opportunities.



### The College for Adaptive Arts (CAA)

The College for Adaptive Arts is a unique school **opened in 2009** to provide an equitable and lifelong collegiate experience to adults with intellectual and developmental disabilities. The goal is to help this population, who have not historically had access to higher education, reach their full potential. Its hybrid in-person and virtual delivery model has reached over 500 students of differing abilities and ages in 17 states and two countries. In recent years, CAA has made apprenticeship programs available.

### Meet Arjun

Arjun began an apprenticeship program in 2024 at the CAA in Saratoga, California. The 21-year-old IT apprentice learned various tech skills, including troubleshooting, in his seven months at CAA. “My teacher will tell me to help students, or other teachers, with their technical issues,” says Arjun, adding that he is often assisting others with their computer connections.

“I try to help them do things in a better way to solve their tech problem.” Arjun, who will finish his apprenticeship by 2026, found out about the College of Adaptive Arts through word of mouth and has enjoyed learning and working in the program, while also making friends along the way.

### Notable Apprenticeships in History

Apprentices have part of the American workforce for many years. In fact, it’s likely that you’ve heard of some of the many people who were once apprentices.

*For example:*

- **Benjamin Franklin** was a printing apprentice for five years starting in 1718
- **Paul Revere** became an apprentice in 1734 at the age of 13 as metalworker in his father’s silversmith shop.
- **George Washington** was an apprentice surveyor in the mid 1700s when he was a teenager.
- **Henry Ford** was an apprentice machinist in the late 1800s
- **Walt Disney** was an apprentice in commercial art, animation, and filmmaking in the 1920s
- **Maya Angelou** was an apprentice cook in the 1940s
- **Elvis Presley** was an Electrician’s apprentice in 1954
- **Oprah Winfrey** was an apprentice for a news anchorman in the 1970s
- **Jamie Oliver** was an apprentice in the culinary arts in the 1990s which led to his career as a chef. Today, some 30 cookbooks, six television series’ and 40 restaurants (owned or established) later it is estimated that Oliver is worth some \$300 million.



## Apprenticeship Programs: A Closer Look

There are many types of apprenticeship programs. At their core they serve the same purpose: helping individuals learn skills and crafts that lead to careers.

In this section we look at four apprenticeship programs:

- a program over 9,000 miles away from the United States that can serve as a model for successful programs worldwide.
- a model program for those who enjoy the great outdoors and want to have an impact on conserving nature.
- two distinctive Missouri-based programs, both of which are growing quickly.

Each is an example of how apprenticeship programs start and how they benefit the workforce.

### **Program # 1: Exxon Mobil's Australian Apprenticeship Offers Key Lessons**

Oil and gas behemoth Exxon Mobil's Australian subsidiary (Esso) has shown it can pay to partner with external providers for guidance on setting up an award-winning apprenticeship program.

Initially, Esso site managers were openly hesitant to take on a large cohort of apprentices. Their concern was that a contingency of apprentices would change company roles and workloads. Such concerns are not unusual. In fact, employers often cite the same hurdles to establishing an apprenticeship program, including:

- believing it's too difficult to develop local talent in-house
- needing workers urgently
- having limited HR capability to manage young apprentices effectively
- uncertainty about business needs when apprentices complete their training.

Esso's workforce needs at two industrial sites in regional Victoria were highly specialized. They needed to re-imagine how a training program could be structured to address the barriers to apprentice completion and retention.



### Working with an Intermediary

Esso opted to engage a group apprentice intermediary to act as a legal employer of the apprentice program, overseeing program design, standards, and registration with the relevant regulator (in the U.S. this could be the Department of Labor or a state apprenticeship office). Importantly, an intermediary manages administrative aspects of the apprenticeship such as mentoring and coaching.

In this case, the intermediary was the not-for-profit Institute for Workplace Skills and Innovation's (IWSI) Australian entity, Work Place Connect (WPC) Group. WPC found and vetted apprentice candidates and placed them with Esso to begin on-the-job training and actual work. Esso provided day-to-day supervision and practical experience, exposing the apprentices to industry-specific skills as set out in the program.

### What was Involved in Setting up the Program?

Setting up the apprenticeship program was a strategic, long-term investment. It took two years from the initial discussion with WPC to Esso's launching their recruitment drive. That time was spent:

- working out the competencies and skills apprentices would need to develop
- linking those skills to in-house and external training
- identifying and training supervisors and mentors, and
- ensuring a company-wide understanding of the roles and their progression.

WPC consulted with Esso's executive suite, staff, jobseekers, parents/guardians, schools, community organizations, and First Nation leaders. They created a structured yet flexible model that can be modified as required. WPC encouraged registered training organizations to review, revise, and re-sequence their training programs and upgrade their equipment to make it more relevant to Esso's specific needs. The final model covered apprenticeships in Mechanical Engineering, Electrical and Instrumentation, Business, Process Plant Operation and the dual trade pathway Electrical/Instrumentation.

More than 800 applications were received for the initial intake. The first lot of 23 apprentices started with 8-16 weeks of intensive full-time training. Throughout the three-year program, Esso and WPC focused on retention. They methodically identified barriers to apprenticeship completion and rolled out strategies to minimize those risks.



#### Here Are the Key Elements of the Program

- WPC coached and supported apprentice supervisors
- Individual training plans and workplace rotations were developed for each apprentice
- Opportunities were established for apprentices to take up a dual trade pathway
- WPC assigned its staff to mentor apprentices either on-site or remotely



#### Local and Global Impact: Sharing Success Across Borders

To date, 88 apprentices have graduated through the WPC-Esso program – some are even third and fourth-generation apprentices – and the program displayed a range of benefits. After completing their apprenticeship, 95 percent of program graduates continued to work for Esso, much higher than the apprenticeship program average of 60 percent (who stay with their employer for at least six months after they complete the program). The program also demonstrated a proven system for developing a talent pipeline.

Recruitment costs are now negligible due to the near 100 percent retention rate. And fewer external contractors are needed because of the way apprentices are scheduled to support qualified tradespeople.

In addition, Esso's workforce morale improved, and in 2021, just three years after the program hired its first apprentice, the company won the prestigious Australian Apprenticeships – Employer Award. Since then, the program has been shared with Esso's global partners in Papua New Guinea and in the United States.

The WPC-Esso program shows that regardless of role specialization or the complexity of the work environment, organizations can build a professional and productive workforce from within by reaching out.



### **Program # 2: An Apprenticeship in the Great Outdoors**

The Forest Service is working with USDOL to create a new apprenticeship program for the role of forestry technician. “It is a program that many other businesses, as well as state and local governments, can leverage as an apprenticeable occupation,” says Dr. Amy Firestone, a national workforce development and apprenticeship leader based in Washington D.C.

Established in 1905, the Forest Service (part of the U.S. Department of Agriculture) oversees 154 national forests and 20 national grasslands spanning 193 million acres across 43 states, Puerto Rico, and the Virgin Islands. The agency helps communities; state, local, and tribal governments; forest industries and private forest landowners improve conditions in both urban and rural areas. Like many U.S. businesses and organizations, the Forest Service has challenges recruiting and retaining skilled workers. There is a turnover rate of 10 percent for forestry technicians (these are entry-level roles in the forest service, separate from firefighting), who make up approximately 3000 of the total Forest Service workforce of roughly 10,000.

“Forestry technicians are a high-demand occupation with a large footprint in our agency, so the high turnover in staff creates a burden to keep posting jobs, interviewing, and attending job fairs,” says Dr. Firestone.

Turnover affects another high-demand occupation for the Forest Service, engineering technician, which has a high attrition rate among the approximately 400 permanent staffers with this role. An even higher turnover affects a smaller group—survey technicians—where 20 percent of a 60-person workforce leaves each year.

Firestone explains: “Turnover affecting these priority roles represents a huge gap we’re going to fill through pre-apprenticeship programs and career apprenticeship programs that will help nurture a pipeline of loyal, skilled staffers. It’s a very large plan as these roles are needed from Alaska to Puerto Rico and everywhere in between.”

“We also understand that a lot of people are familiar with the Forest Service but don’t really know about the huge gamut of outdoor and indoor career opportunities it can provide over time,” says Firestone.



### **Forestry ‘Jack or Jill of all Trades’**

The job of a forestry technician is to support the health of forests and ecosystems, which includes forest management, fire management, environmental compliance and ensuring that forestry activities are legal and sustainable. Defining the skills needed for this work is somewhat difficult, however, as forestry technician work changes depending on the region, landscape and environment. The Forest Service is working with the Department of Labor to set out the skills that will make “forestry technician” an apprenticeable occupation. Once approved, the agency can fully design and implement its registered apprenticeship program.

“That’s innovative,” says Firestone, “because the Forest Service is going to be the national leader in creating a new apprenticeship – forestry technician – that many other businesses, state and local governments can leverage as an apprenticeable occupation.” Firestone goes on to explain the initial requirements for the role, noting that contenders need basic literacy and math skills, should have an interest in building a public service career, are comfortable interacting with the public and enjoy working outdoors. “You could call forestry the ‘Jack or Jill’ of all trades. Ideally, apprentices will have exposure to different parts of what the forest service does,” says Firestone.

### **Building on a Tradition of Apprenticeship**

Since 1989, the Forest Service has run its own wildland firefighter registered apprenticeship program. “It has been successful through the ups and downs in the agency and society in general,” says Dr. Firestone of a program that hires about 300 new apprentices each year.

Firestone notes that this apprentice model has positive effects on employee productivity and reduces turnover. “It’s worth the risk to invest because the data shows apprentices stay employed longer than non-apprentices, thanks to the wrap-around support and mentorship.”

But it’s not as simple as using the firefighter apprenticeship program as a template for the other three priority roles the Forest Service needs to fill. Each registered apprenticeship program must meet its own standards, which can involve hundreds of pages of apprenticeship regulations. However, once recognized as an apprenticeable occupation, any other organization or business can take 75 percent of the program and customize the remaining components to meet their unique needs.



Dr. Firestone has been working to reframe Forest Service recruitment so entry-level roles such as forestry technicians begin with a pre-apprenticeship program followed by an apprenticeship. The pre-apprenticeship gives potential apprentices the necessary skills to meet entry requirements and facilitate success in the apprenticeship program. This approach builds a career pathway that opens many doors and opportunities. The program will complement the popular Forest Service Job Corps program, a nationwide residential career training program for people aged 16 to 24. Job Corps graduates will now have the option of entering the apprenticeship program.

### **Getting Help from Experience**

For over a year, the Forest Service has partnered with IWSI America, tapping into their experience creating apprenticeships in multiple occupations for a federal agency. Other IWSI partners include the Department of Labor, the Forest Service's regional office, the forestry sector (associations and businesses), and colleges.

Dr. Firestone and her team have also liaised with several European countries, including the United Kingdom, Switzerland, Austria and Germany, seeking insights into their forestry apprenticeships.

“Those countries are so much smaller than the US, so we must think about the roles differently and at a much bigger scale, says Dr. Firestone,” while also acknowledging that she and her team benefitted from their European tour of apprenticeship programs.

### **Optimism and Excitement**

To get to this point, “all levels of leadership in the Forest Service needed to appreciate that apprenticeship works and will have a huge and positive impact on our agency,” says Dr. Firestone. The Forest Service aims to design pilot pre-apprenticeship and apprenticeship programs in several states by the end of 2025.

The first step is to partner with local non-profit organizations to help train and mentor individuals who need basic entry-level skills and experience. Dr. Firestone is working with regional partners for guidance on identifying and recruiting from their communities. “We can't launch any pilots until we're ready – we've done the legwork, have the budget and resources, and trained staff to be mentors. We have a good system in place. It's going to take time to get it right.”



### **Program # 3 Fort Zumwalt Apprenticeships**

The Fort Zumwalt School District is headquartered in O'Fallon, Missouri, which is part of the St. Louis metropolitan statistical area. The district has 27 schools and 17, 276 students. As these students pass through high school, some will have the opportunity to apply to the Fort Zumwalt Apprenticeship Program, where they can complete one of the many Career and Technical Education (CTE) apprenticeships offered, in fields such as Business, Healthcare and IT.

Once they've successfully completed the CTE apprenticeship, and with the recommendation of two instructors, students are eligible to apply for a USDOL registered apprenticeship at a local business. The next step is an interview, after which, if hired, they'll be registered with the program and can start to fulfill the requirements of the program. These requirements include a minimum 2000 hours of on-the-job training, which may be completed after graduation.

### **The Growth of a Program**

Just a few years ago, Andy McHaffie, an industrial technology teacher in the Zumwalt School District, began focusing on how the school could help students use their skills with wood, metals, or drafting to connect with industries in need of such abilities.

"My colleagues and I heard that the U.S. Department of Labor had created exceptions so that instead of being 18 to work in hazardous occupations they could be 16 if they were apprentices in an apprenticeship program," explains McHaffie, outlining the impetus for what would become the Fort Zumwalt Apprenticeship Program.

McHaffie was excited about the possibility of linking the high school curriculum with the actual needs of local businesses, especially as some major machining and aerospace companies, including Boeing, are in the St. Louis area.

"We started out pretty small, with just two partnering companies that hired four apprentices, including one in cabinet making and one in machining," explains McHaffie, who also appreciated the help DOL provided in developing the program.

Operational for just a few years, Fort Zumwalt Apprenticeships now has over 50 apprentices and 20 different partnering companies, including National HealthCare Corporation (NHC), Quest Specialty Products, Merric Millwork and Seating, National Cart, Patterson Mold and Tool, Fixture Concepts Inc, Seyer Industries (a precision Aerospace machining company) and AVMATS (which provides parts for Challenger, Falcon, Hawker, Gulfstream, Learjet, and Sabreliner aircraft).



**Apprentices in the Fort Zumwalt Program are:**

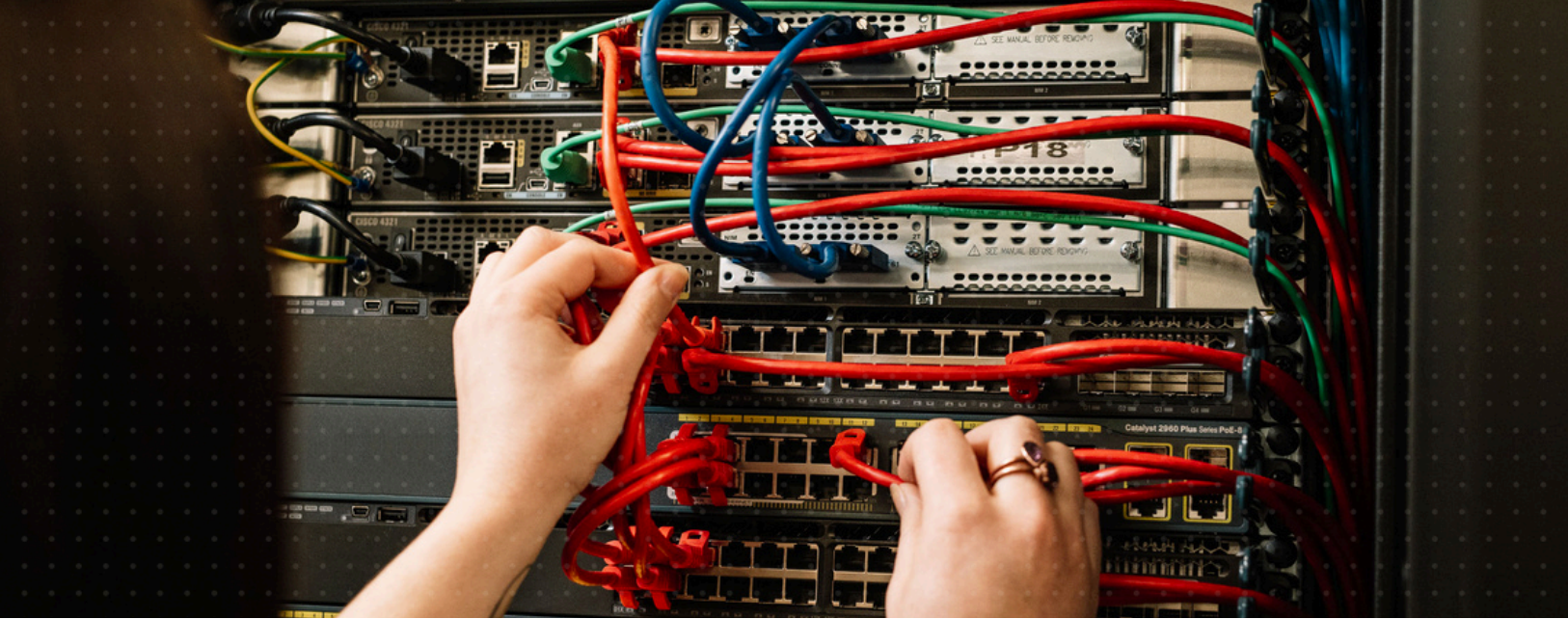
- Paid hourly wages for on-the-job training
- Given the opportunity to earn high school credit while on the job
- Given the opportunity to earn 45 hours of college credit through St. Charles Community College in Cottleville, Missouri, just a few miles outside of St. Louis
- Able to earn a nationally recognized USDOL certificate as a Mechanical Engineering Technician, production technologist, IT generalist or health support specialist among other positions.

**Final Words**

Says Andy McHaffie, who is now Apprenticeship Coordinator for the program, “some people still think that apprenticeships are difficult to manage, with a lot of regulations and paperwork. The truth is the DOL is supportive of apprenticeships and very helpful.

I tell companies that we’ll take care of the paperwork while you take care of the on-the-job training. Students will be richly rewarded and you will have a pipeline to continue bringing in skilled employees to meet the specific needs of your company. I strongly believe that apprenticeships are the way to go.”





#### **Program # 4: Access Point: Wrapping Around Apprenticeship Training**

In only two years, the non-profit organization Access Point has established a strong presence as a provider of apprenticeship programs. Co-founders Ron Daugherty of Daugherty Business Solutions and Bill Mitchell, IT ambassador for apprenticeships for the U.S. Department of Labor, have created an apprenticeship program with an edge.

Along with comprehensive, hands-on job training and education, the Access Point Foundation provides wraparound services, which are especially significant for young adults from under-represented communities.

“Wraparound services address the challenges and barriers that prevent many young students from moving forward when it comes to education, job training and securing a good job,” says Mitchell. The idea of apprenticeships to train the future workforce has been around for decades, but engaging a larger, more diverse market is something both Daugherty and Mitchell believe will benefit a greater number of high school students.

Access Point is open to all but is expressly focused on providing opportunities to groups who are underrepresented in the IT sector, and historically under-resourced. Access Point participants are often younger and less experienced than other student populations, with less access to resources, fewer role models and thinner support structures.

Mitchell had already learned a lot about the additional needs of many students while working in state programs. “I learned across the states of Missouri, California and Nevada while starting up apprenticeship programs.

There were significant barriers in the multi-cultural school districts. For example, many students had low reading and mathematics skills; others were also living in poverty and without additional services, which we call wraparound services, were not going to be successful. So, what Ron and I decided after the first two years [of running a program] was that we needed to build the missing services, which included what we called Hyper Coaching.”



Daugherty Business Solutions, with between 100–200 employees, decided its own project managers understood the professional skills needed to succeed in the workplace, so they recruited them as Hyper Coaches.

“Under the Hyper Care component, the program could offer help providing transportation, food, access to necessary tools and so forth,” explains Mitchell, adding that “there is also an important learning curve built into the Hyper Care component, such as learning about corporate culture, dressing appropriately for the job, and how to manage their time so they can engage in other activities while in the program and then while they are employed.”

Mitchell uses an analogy to better define the wraparound features of Hyper Care in the Access Point program. “The lack of a Hyper Care component is akin to teaching mountain climbing skills, but without a way to get to the mountain, having the necessary equipment, or an experienced guide who knows the ropes, so to speak.

As a result, the climbers will never get off the ground. So I helped secure the budget for Hyper Coaching and Hyper Care,” says Mitchell, adding that “millions of dollars of funding came from the state to provide the much needed wraparound services which are a critical element of apprenticeships, especially in multi-cultural and under-represented communities.”

### Looking Forward

Access Point has been quite successful thus far, connecting with sponsors; and making inroads with companies, high schools, and communities. Their future agenda is rich with plans such as:

- Providing student “Hyper Care” with family engagement
- Providing examples of real-world success stories/mentorships
- Giving high value experiences to build students’ self-worth
- Continuing to work with participants after they enter full-time work
- Helping participants with work/life balance, financial literacy, professional skills and future education.
- Leveraging dual enrollment so high school students can take college level courses, generally for less than half the typical cost.
- Doubling the number of students in the St. Louis and Minneapolis programs, and expanding the pipeline in Atlanta
- Increasing corporate support for talent acquisition and programs



# PART 12

## Social Benefits

Learning and mastering skills on the job and in the classroom with the apprenticeship model is a marvelous way to launch a career. But in addition to skills training, apprenticeships offer important social benefits.

To start, apprentices at a local business make contacts in the community as they interact with management, co-workers, suppliers and customers. They also form friendships with fellow apprentices, who may become future colleagues. And because co-workers share the same goals, an orientation toward camaraderie and teamwork often develops within apprenticeship programs.

Another common takeaway from apprenticeships is the increased self-confidence that comes from mastering a skill. In his book *Mastery*, author Robert Greene says, "Mastery is not a destination but a way of life. The more you practice, the more your self-confidence grows." Very often, self-confidence extends beyond learned skills and shows up in other aspects of life, including personal relationships and community activities.

The combination of hands-on-learning and feedback and support from instructors and mentors also provides encouragement and offers validation that many apprentices do not receive in traditional classroom learning. This validation can be particularly important for individuals who have felt disconnected in traditional educational environments.

### Access to Opportunities

Modern apprenticeship programs are designed to be accessible and beneficial to a wide range of participants, ensuring equitable opportunities across industries. This means the door to apprenticeship is open to minorities, to individuals with disabilities and to those living in underrepresented communities.

### Advantages When Job Hunting

In 2023 and 2024, youth unemployment rates fluctuated between 10.5% and just over 14%. Individuals aged 20-24 consistently faced higher unemployment—often ranging from six to nearly double the national average, depending on the time period. In contrast, the overall unemployment rate in the United States was 4.1% in 2024. Of course, unemployment rates do not always tell the whole story. Students may be counted as unemployed (although many students do have jobs while attending their – often costly – colleges). There is also the underemployment factor, where people are working at jobs below their skill level. While not technically unemployed, they're making less money than they could make in the field for which they've been trained.



But apprentices have an advantage in this difficult job market. For young employees with little or no job history, an apprenticeship provides actual work experience and shows a future employer they've been in a work environment, learning and performing. And the skills they're learning include soft skills such as problem-solving, interpersonal skills, communication skills and emotional intelligence. In addition, looking for a job becomes easier with skills training. For some—as mentioned several times in these pages—they'll start work and a career at their sponsoring company immediately after receiving their accreditation.

And while the completion rate for apprenticeships is over 54 percent, even those who do not finish still have the skills to get a good job. They are further advanced than those without any skills training. Having skills while job hunting is like warming up a car on a cold day instead of trying to get a freezing cold car up and running. It's likely to stall out, just as those with no or minimal skills often stall out when job hunting.

Being well-prepared for a new job has benefits even if you're still working for your sponsoring company. In an unsteady economy, companies have their highs and lows. On one hand, they might be expanding and bringing in additional employees. Expansion can present an opportunity for skilled employees to switch to a job that pays more and entails greater responsibility.

On the other hand, companies may find themselves going through a downtime if sales and profits are low. Layoffs are not uncommon in any industry but having honed skills and tested work experience makes it easier to make a move to a different company. Skills, confidence and knowing the ins and outs of both your industry and the workplace in general are advantages in the job market. These are the exact benefits that come from an apprenticeship program and a good mentor.



### **Career Advancement**

Another social benefit of apprenticeship is that most companies with apprenticeship programs strongly support apprentices in their future endeavors. Apprenticeships often lead to well-paying jobs with options for clear career advancement, and getting a head start on a steady career can be a life-changing experience. It might mean gaining traction in high-demand sectors such as healthcare, advanced technology or other fast-growing industries that require highly skilled employees and offer good salaries.

### **Quality of Life**

Apprenticeship programs introduce both a sense of structure in the workplace and the flexibility needed for a healthy work-life balance. This structure can encompass satisfying, mindful work with ongoing options for learning as well as physical fitness, mental well-being and opportunities to engage with friends, family, colleagues and community.

Apprenticeships can lead to a better quality of life, not only for apprentices/employees but for their families as well, and even their communities. Higher salaries also mean more options, such as investing in a new house, new car or long-awaited vacation. The bottom line is apprenticeships can enrich the lives of those who participate in them and those around them.





# PART 13

## The future of Apprenticeships

How will apprenticeships go forward? Bill Kraus, a registered apprenticeship expert, apprenticeship program development consultant and notable thought leader on the topic says “I do believe there will be ongoing changes. But you have to remember apprenticeship programs are at the mercy of government agencies, policies, and the latest administration.”

Fortunately, the last several administrations have supported apprenticeship programs. In fact, according to the Department of Labor, federal funding for apprenticeship programs increased from about \$27 million in 2000 to over \$244 million in 2024. The funding increase reflects an acknowledgement that apprenticeship plays a significant role in developing the future workforce.

It makes Kraus happy to see apprenticeships on the upswing, having spent years in the field as USDOL’s director of apprenticeships for the southern states and then as director for Georgia and Tennessee before moving north to hold director jobs covering New Jersey, New Hampshire, and a portion of New York State. The locations and responsibilities changed as he travelled around the country, but the goal was always to help employers attract, train and retain a quality workforce through apprenticeships.

### Key Issues

“There are always issues that come to light when dealing with the government, such as regulations,” says Kraus who spent 21 years following regulations as a member of the United States Navy and is well aware of the many regulations that govern apprenticeship programs. Having watched the regulatory pendulum swing back and forth from one administration to the next, Kraus now says, “I think as we move forward, we may see less regulatory interference. There have been times in which we’ve had so many bells and whistles added to the regulatory structure that it became almost impossible to get anything accomplished. We were deluged with a ton of reporting, the need for constant approvals, and paperwork ad nauseam; at those times, Big Brother was really in your shorts, heavily;” says Kraus.

Additional problems that arise from tight government regulations include the lack of necessary flexibility, little input by industry leaders, and no modernization within an industry. “When many of the USDOL standards were established, the technology wasn’t there, the sophistication of the workforce wasn’t there, innovation wasn’t there, and the tools and equipment we have today were not yet around. Unfortunately, some of these old regulations never disappear. Not long ago I even saw something that referred to punch cards still being included in regulations. You have to be over 50 to remember when punch cards were common in the workplace;” adds Kraus.



Along with staying in step with the times and the needs of industry, regulators should consider specific company needs. Kraus poses an example: “If a chain of restaurants is seeking cooks, and they look at the DOJ website it will tell them that cooks in an apprenticeship will need four years of training. This can’t possibly meet the needs of restaurants from coast to coast. Should it take the same amount of time to train a cook who will work in IHOP as it would take to train a chef to work in a 3-star Michelin-rated restaurant in Manhattan?”

It’s worth noting that the chef at Eleven Madison Park, one highly acclaimed restaurant in the heart of New York City, took only three years in training, not the four years required by the DOL. Adding fuel to Kraus’s argument that a single arbitrary requirement is not necessarily appropriate for every situation is the success of First Course NYC, which offers an intensive culinary apprenticeship program in a 14-week timeframe, including both classroom instruction and on-the-job training in restaurants. They’ve effectively provided a shorter path to becoming a line cook via the apprenticeship model.

“The point is that while you want apprentices to be well trained in the general aspects of any job, the context of the industry and especially of the employer is significant. That is what the industry needs to bring to the table, whether it’s in culinary skills, technology or healthcare. The regulatory reins must be loose enough to provide the necessary flexibility,” says Kraus.

“I was on a couple of panels that decided what to do about certain regulations and whether they should be in or out,” recalls Kraus. “In many cases, I think, along with a credential from completing an apprenticeship, it’s more important to look at credentialing within the industry, which is an industry-driven and marketplace-driven element that is specific to each industry. My son, for example, is an IT VP of a major bank in California. He was a high school graduate with two years of college who also had a portfolio full of credentials. That’s where his company wanted him to be,” explains Kraus.

In essence, regulations need to be balanced fairly between government and industry, and credentials should be indicators of best practices within the industry or the business as necessary.

As Bill Kraus sees it, “The future of apprenticeship has great possibilities providing it moves forward with the times. First it’s important to recognize that apprenticeships have a formalized system, provide established credentials and create a means of handing down jobs from incumbent workers to new workers.”



### **Apprenticeships and College Unite**

And finally, Kraus is among those who would like to see a stronger bond between colleges and apprenticeships. “When I was in school you had to do an internship program. I did that, got 15 credits and got paid. I worked very hard but the outcome was phenomenal,” says Kraus.

According to the Urban Institute, there is already a growing connection between schools and apprenticeships. This connection is defined by the Urban Institute as “a registered apprenticeship program which pairs on-the-job training with related instruction in the classroom. Educational organizations including high schools, community colleges, technical schools, career centers, trade schools, associations, and other workforce training entities provide related instruction.”

A 2024 article by Laura Aka from Workingnation.com reports that “the number of community college sponsors with active apprentices has seen a steady increase since 2016. Starting from just 30 sponsors with active apprentices, the number climbed to over 200 by 2023.” This trend may very likely be the future of apprenticeship in the United States, combining academics with a wealth of specific job skills required to keep pace with the rapidly changing work environment. In the near future we may see one key word changing: from “college or an apprenticeship” to “college with an apprenticeship.”

### **The Future of Apprenticeships: Food for Thought**

1. It would benefit everyone involved in apprenticeships if government-funded programs could focus more attention on sustainable, quality, long-term funding models. This focus would allow programs to expand their services, develop high-quality resources and attract top instructors who can spend more time working with apprentices to familiarize them with the tools and skills necessary to thrive in the modern workplace.

2. Industry representatives, and regulatory boards or government agencies, need to address the ongoing balancing act between regulations and flexibility. Regulations provide guardrails to prevent hazards while also maintaining a level of quality. However, too many regulations can strangle the system and stifle new ideas that can be beneficial for everyone involved. A system that ensures consistency but leaves room for innovation and customization can provide the best balance.

3. As we move forward, employer engagement should be the backbone of apprenticeship. Employers should be deeply involved in the design and delivery of apprenticeship programs. When businesses are part of the process from the start, training is more likely to meet real-world needs. This means developing programs in partnership with industry, so apprentices learn skills they can use immediately in the workforce. Employers should feel that apprenticeships are a direct pipeline to meeting their specific talent needs, not just general training programs.



4. We need to build strong pathways and support at all levels. Whether apprentices are starting a program or nearing completion they should be provided with more than just classroom learning and/or on-the-job training. Anyone in a learning process needs personal and professional support and guidance. In this case mentors are also significant, as well as career guidance counselors. There is a saying, “the more you give, the more you get,” and giving more to apprentices will result in more productivity and longer retention rates.

5. Prioritize quality, not just quantity. It’s not about how many apprentices you have; it’s about having apprentices who strive to reach rigorous standards. It’s better to have fewer well-trained apprentices, ensuring that graduates are fully prepared for their careers, than rushing more apprentices through training, which will often result in poorer quality work and more errors to correct.

6. And finally, as mentioned earlier in these pages, with this generation of work you need to be aware of intangibles such as soft skills, engaged employees, open communication and means of lifelong learning. Moving forward, these and other human aspects of apprentice training will go hand-in-hand with skills and technical training.





# Resources

This list includes resources that were not specifically mentioned by name within the various parts of the booklet. All resources were utilized between October 2024 and January 2025.

## Part 1: IWSI America

- IWSI America.org
- Personal interview with Deborah Williamson, October 2024

## Part 2: Setting the Stage for Success in the New World of Work (aka New Work)

- Workpath Editorial Team
- Article: "The Definition of New Work - Everything You Need to Know", July 15, 2020, [Workpath.com/en/magazine/new-work-definition](https://workpath.com/en/magazine/new-work-definition)

## Part 3: The Need for Skills Training

- Britannica entry: Works Progress Administration (WPA), [Britannica.com/topic/works-project-administration](https://britannica.com/topic/works-project-administration)
- Justin Dile, The Workplace Whisperer
  - Article: "The Importance of Soft Skills in the Modern Workplace", March 1, 2023, [linkedin.com/pulse/importance-soft-skills-modern-workplace-justin-dile](https://linkedin.com/pulse/importance-soft-skills-modern-workplace-justin-dile)

## Part 4: Defining Apprenticeships

- U.S. Department of Labor, Site: [dol.gov/general/topic/training/apprenticeship](https://dol.gov/general/topic/training/apprenticeship)
- The American Institutes for Research® (AIR), Gina King-Wells and Meghan Willis
  - Infographic: "State Apprenticeship Expansion by the Numbers", [Air.org/resource/infographics-state/apprenticeship-expansion-numbers](https://air.org/resource/infographics-state/apprenticeship-expansion-numbers)
- Urban Wire, Jessica Shakesprer
  - Article: "Five Common Misconceptions about Apprenticeships", April 22, 2019, [Urban.org/urban-wire/five-common-misconceptions-about-apprenticeships](https://urban.org/urban-wire/five-common-misconceptions-about-apprenticeships)
- The Council on Licensure, Enforcement and Regulation (CLEAR)
  - Article: "States Consider Apprenticeship Programs for Lawyers", May 4, 2023, [Clearhq.org/news/states/states-consider-apprenticeship-programs-for-lawyers](https://clearhq.org/news/states/states-consider-apprenticeship-programs-for-lawyers) (Note: There is a spelling error in the word "lawyers" in the link)
- Evolve Magazine: World at Work, Tom Starner
  - Article: "Apprenticeships Are a Growing, Attractive Solution for U.S. Employers", March 9, 2023, [worldatwork.org/publications/evolve-magazine/apprenticeships-are-a-growing-attractive-solution-for-us-employers](https://worldatwork.org/publications/evolve-magazine/apprenticeships-are-a-growing-attractive-solution-for-us-employers)

## Part 6: College vs. Apprenticeships

- Education Data Initiative, Melanie Hansen
  - Article: "Average Cost of College Over Time: Yearly Tuition", Last Updated: December 26, 2024, [Educationdata.org/average-cost-of-college-by-year](https://educationdata.org/average-cost-of-college-by-year)
- Motley Fool, Jack Caporal
  - Article: "Student Loan Debt Statistics in 2025", Updated September 3, 2024, Motley Fool
- Wall Street Journal, Douglas Belkin
  - Article: "More Students Are Turning Away From College and Toward Apprenticeships", March 16, 2023, [wsj.com/articles/more-students-are-turning-away-from-college-and-toward-apprenticeships](https://wsj.com/articles/more-students-are-turning-away-from-college-and-toward-apprenticeships)

## Part 7: Wisdom from the Godfather of Apprenticeships: Robert Lerman

- Personal interview with Robert Lerman, November 2024
- Revised National Standards of Apprenticeship Developed by the United States Service Military Apprenticeship Program (USMAP), [usmap.osd.mil/docs/National%20Standards.pdf](https://usmap.osd.mil/docs/National%20Standards.pdf)



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- Education Data Initiative, Melanie Hansen
  - Article: "Average Cost of College Over Time: Yearly Tuition", Last Updated: December 26, 2024, [Educationdata.org/average-cost-of-college-by-year](https://educationdata.org/average-cost-of-college-by-year)
- Motley Fool, Jack Caporal
  - Article: "Student Loan Debt Statistics in 2025", Updated September 3, 2024, Motley Fool
- Wall Street Journal, Douglas Belkin
  - Article: "More Students Are Turning Away From College and Toward Apprenticeships", March 16, 2023, [wsj.com/articles/more-students-are-turning-away-from-college-and-toward-apprenticeships](https://www.wsj.com/articles/more-students-are-turning-away-from-college-and-toward-apprenticeships)

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- Revised National Standards of Apprenticeship Developed by the United States Service Military Apprenticeship Program (USMAP), [usmap.osd.mil/docs/National%20Standards.pdf](https://usmap.osd.mil/docs/National%20Standards.pdf)

#### Part 8: The Role of Mentors

- Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Unemployment rate changed little at 4.2 percent in November 2024 at <https://www.bls.gov/opub/ted/2024/unemployment-rate-changed-little-at-4-2-percent-in-november-2024.htm> (visited February 25, 2025).

#### Part 10: Apprentices Talk about Apprenticeships

- Personal interviews with apprentices Makayla Braeuner, Gage Kellett, Michael Hasrouni, and Arjun, November 2024
- Deborah Williamson
  - Article: "America's Ready, Willing and Able Program Helps Organizations Create Their Talent Pipeline", [isaiaamerica.org/news/IWSI-Americas-Ready-willing-and-able-program-helps-organizations-create-their-talent-pipeline](https://isaiaamerica.org/news/IWSI-Americas-Ready-willing-and-able-program-helps-organizations-create-their-talent-pipeline)
- Personal interview with Amanda Myers, Employment Coordinator for Down's Syndrome Innovations, October 2024
- Personal interviews with apprentices Debbie Yost and Jacob Webster, October 2024

#### Part 11: Apprenticeship Programs: A Closer Look

- Program #1: Exxon Mobil's Australian Apprenticeship Program Offers Key Lessons
  - Blog Post: "From Hesitancy to Success: Exxon Mobil's Apprenticeship Model in Australia Offers Lessons for U.S. Businesses"
- Program #2: Forestry Apprenticeships in the Great Outdoors, Dr. Deborah Williamson, Forest Service, US Department of Agriculture, [www.fs.usda.gov/](https://www.fs.usda.gov/)
- Program #3: Fort Zumwalt Apprenticeship Program
  - Fort Zumwalt School District, Site: [Fzk12.mo.us](https://www.fzk12.mo.us)
  - Personal interview with Andy McHaffie, Apprenticeship Coordinator, Fort Zumwalt Apprenticeships, November 2024
- Program #4: Access Point: Wrapping Around Apprenticeship Training
  - Personal Interview with Bill Mitchell

#### Part 12: Social Benefits

- Quote on Mastery, Robert Greene, "Mastery", Penguin Books; Reprint edition October 29, 2013
- Bureau of Labor Statistics
  - News Release: "Employment and Unemployment among Youth, Summer 2024", [bls.gov/news.release/pdf/youth.pdf](https://www.bls.gov/news.release/pdf/youth.pdf)

#### Part 13: The Future of Apprenticeships

- Workingnation.com, Laura Aka
  - Article: "The role community colleges can play in growing U.S. apprenticeships", September 25, 2024, [Workingnation.com/report: The role community colleges can play in growing U.S. apprenticeships](https://www.workingnation.com/report/the-role-community-colleges-can-play-in-growing-u-s-apprenticeships)
- Personal Interview with William Kraus, December 2024
- Duvine.com, Kelsey Knoedler
  - Article: "Chef Q + A with James Beard Winner Daniel Humm", May 29, 2015, [Duvine.com/blog/chef-q-a-with-james-beard-winner-daniel-humm/](https://www.duvine.com/blog/chef-q-a-with-james-beard-winner-daniel-humm/)

# Appendix:

## Key Differences in Training Pathways

PROGRAM COMPONENT	MODERN APPRENTICESHIP	CAREER AND TECHNICAL EDUCATION (CTE)	INTERNSHIP
Hands-on industry experience	Yes	Usually	Yes
Structured on-the-job training	Yes	Sometimes	Sometimes
Earning while learning	Yes	No	No
Work-based and classroom learning	Yes	Yes	No
Full-time employment upon completion	Yes	No	No
Strong professional mentoring and/or coaching	Yes	No	No
Improved employability and interpersonal skills	Yes	Sometimes	Sometimes
Part-time and/or temporary employment upon completion	Sometimes	Yes	Yes
Associate degree	Sometimes	Sometimes	No
Nationally recognized industry credential upon completion	Yes*	No	No
Student debt upon completion	No	Yes	No

\*For Registered Apprenticeship programs

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## About IWSI America

The Institute for Workplace Skills and Innovation America (IWSI America) partners with businesses, nonprofits, and government agencies to build stronger, more adaptable workforces. Through technical assistance and program design, IWSI helps organizations develop sustainable talent pipelines and meet evolving workforce needs.

With a track record of launching over 20,000 skill-based careers, IWSI also operates hands-on skills programs, including [readywillingable.us](http://readywillingable.us) and [careerlaunchpad.org](http://careerlaunchpad.org). Additionally, it is working with the U.S. Forest Service to establish a national apprenticeship program for forestry technicians.

## Authors



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**Dr. Deborah Williamson** specializes in consulting on apprenticeship initiatives. She holds a master's degree from the University of Cincinnati and a PhD in the social sciences from the University of Kentucky.



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