

INTRODUCTION

The Federal Reserve Bank of Philadelphia's Community Development Studies & Education (CDS&E) Department supports the Federal Reserve System's economic growth objectives by promoting community development in low- and moderate-income communities and fair and impartial access to credit in underserved markets. As part of its community development work, CDS&E has examined workforce development issues, with a particular focus on young people between the ages of 16 and 24. CDS&E hosted a conference on apprenticeships and other employer-led strategies in December 2015, organized a series of webinars, and reported on apprenticeship and other workforce initiatives in *Cascade*,¹ the Bank's community development publication. CDS&E has also conducted research on well-paying employment opportunities for workers with lower levels of formal education in the nation's largest metropolitan economies and in Pennsylvania, New Jersey, and Delaware. This research on "opportunity occupations" has been conducted with the Federal Reserve Banks of Cleveland and Atlanta.² Recently, CDS&E also published "Uneven Opportunity: Exploring Employers' Educational Preferences for Middle-Skills Jobs."³

One of the talent recruitment and development strategies that employers may examine is apprenticeship. Apprenticeship, which builds on a time-old tradition in which young people learn a craft or trade from older workers, has a precedent in craft guilds prominent in Europe more than 1,000 years ago.

Apprenticeship enables an employer to provide training and instruction according to an employer's particular needs and to prepare employees for positions that are difficult to fill or will be vacated by retiring workers. It's a way to transmit cultural and institutional knowledge from experienced workers and to develop employees who will be the mainstay of the future. Apprenticeship can provide employers with an additional source of talent and may increase employee retention and promote diversity.⁴ Some employers have reported difficulty in finding suitable candidates for middle-skills jobs that require some postsecondary education but not a four-year college degree; apprenticeship may be a response to this need as well.

At the same time, apprenticeship provides job seekers with a structured career pathway that enables them to simultaneously earn money and learn skills.⁵ Apprentices are usually full-time paid employees when they begin their apprenticeships and are paid incremental wages based on demonstrated competencies. As full-time employees, they also receive benefits.

In the U.S., the 80-year-old federal Registered Apprenticeship (RA) program administered by the U.S. Department of Labor (DOL) has been used traditionally in construction and the skilled trades, such as

¹ *Cascade*, which is published four times a year, provides news and analysis on community development issues for individuals working in the community development field in financial institutions, nonprofit organizations, government agencies, and other sectors. Visit www.philadelphiafed.org/community-development/publications/cascade.

² See Keith Wardrip, Kyle Fee, Lisa Nelson, and Stuart Andreason, "Identifying Opportunity Occupations in the Nation's Largest Metropolitan Economies," Federal Reserve Banks of Philadelphia, Cleveland, and Atlanta, September 2015; available at www.philadelphiafed.org/-/media/community-development/publications/special-reports/identifying_opportunity_occupations/identifying_opportunity_occupations_report.pdf?la=en.

³ See Keith Wardrip, Stuart Andreason, and Mels de Zeeuw, "Uneven Opportunity: Exploring Employers' Educational Preferences for Middle-Skills Jobs," *Cascade Focus*, January 2017; available at www.philadelphiafed.org/-/media/community-development/publications/cascade-focus/uneven-opportunity-exploring-employers-educational-preferences-for-middle-skills-jobs/cascade-focus_6.pdf?la=en.

⁴ See www.luminafoundation.org/resources/talent-investments-pay-off.

⁵ Apprenticeships are often referred to as having an "earn-and-learn" strategy. Academic concepts are contextualized and taught in a workplace or work setting, an educational approach known as "work-based learning." See materials on work-based learning in the Key Contact Individuals and Resources section of this guide.

those involving electricians, plumbers, and carpenters. In the past two years, significant DOL funding has expanded the use of RAs in high-growth sectors such as information technology (IT), health care, and advanced manufacturing, and has supported some new apprenticeship intermediaries and job-related training and instruction providers. Many newer programs in these high-growth sectors are two years or less in duration. New apprenticeship activity in financial services and IT is described later in this section.

PURPOSE

This guide is designed to inform private-sector employers in an even-handed way about the background of U.S. apprenticeships, trends, and new developments, particularly in Pennsylvania, New Jersey, and Delaware. The guide is intended to help employers understand the current state of apprenticeship and decide if they want to further explore apprenticeship as a talent development strategy.

This report focuses primarily on the federal RA program that is administered by the DOL. Non-RAs also exist, although much less information is available about them.

The guide includes a Case Studies section featuring five active RA programs in Pennsylvania and New Jersey that are more than 10 years old and have had a substantial number of apprentices. Three of these case studies report on Oberg Industries, a contract manufacturer in the Pittsburgh region; Philly Shipyard, Inc., a commercial shipbuilder; and the Tri-M Group, LLC, an industrial electrical contractor. These three employers started RA programs because they could not find skilled workers to meet their production needs. Oberg Industries has had more than 700 apprentices since it started its program 35 years ago; Philly Shipyard, Inc., has trained more than 300 apprentices since starting its program 13 years ago; and Tri-M has had 240 apprentices since the beginning of its program 38 years ago.

The other two case studies include a joint labor–management program launched 48 years ago by the Northeast Carpenters Apprentice Training and Educational Fund and an IT apprenticeship program, one of the first in the U.S., developed through an unusual partnership between the School District of Philadelphia and a nonprofit affiliate. Together, these five case studies offer a wealth of experience in operating RA programs. Additional exemplary apprenticeship programs exist in Pennsylvania, New Jersey, and Delaware.

The five case studies are instructive for different reasons. The Northeast Carpenters Apprentice Training and Educational Fund has a pre-apprenticeship that helps participants decide if the carpentry field is the right career choice and has taken a series of steps to recruit women and minority candidates. Oberg Industries recruits high school students for a pre-apprenticeship that leads to an Oberg RA program. Philly Shipyard, Inc., has had good experience recruiting apprentices from its own workforce. Tri-M recently decided to manage its RA program in-house and provides on-site training during work hours in order to give its employees greater work–life balance. At Oberg Industries, Tri-M, and other employers, the RA programs are part of a broader commitment to training.

The guide also includes a section on some new and noteworthy apprenticeship programs that have been started in high-growth sectors by new types of sponsors, such as a chamber of commerce and a community college. Many of the programs are in health care, a sector in which apprenticeship was largely unknown until recently, and include programs for emerging positions such as community health workers. This section illustrates the unfolding activity taking place in nontraditional programs outside construction and the skilled trades.

This publication also includes key contacts and resources. The regional contacts in the DOL and the state apprenticeship agencies in Pennsylvania and Delaware are a good first step in finding other RA employers and sponsors and in exploring the feasibility of apprenticeship at your company.

THE U.S. APPRENTICESHIP SYSTEM

In 1911, the first state apprenticeship program was created in Wisconsin. In 1937, Congress enacted the National Apprenticeship Act, which authorized the federal government to administer RAs in cooperation with the states.⁶

The U.S. has a dual apprenticeship system. In 25 states, including Pennsylvania and Delaware, state apprenticeship agencies act on behalf of the DOL to oversee registration of RAs, assist employers, and monitor regulatory compliance. In the remainder of the states, including New Jersey, RAs are approved by DOL staff.

Key Facts About Registered Apprenticeship Programs

RAs have two key components: on-the-job learning (OJL) and related technical instruction (RTI)⁷:

- With OJL, which has been known until recently as on-the-job training, apprentices gradually learn the duties of a position under the supervision of an experienced worker usually at an employer's facility. Apprentices are also typically assigned a mentor who provides general guidance on OJL, RTI, and other matters. The mentoring role is sometimes fulfilled by the supervisor.
- RTI, which enables the apprentice to master technical skills for a particular position, can be designed and delivered on-site by the sponsor or can be outsourced to an external provider, such as a community college or other training provider. RTI may be a combination of in-person instruction and/or online courses. Apprentices usually receive industry-recognized credentials and may receive college credits for part of or the entire apprenticeship program. They also receive a DOL certificate of completion at the conclusion of their apprenticeship.

Union programs and jointly managed labor-management programs tend to pay for RTI, as do most private-sector employers. Some employers may be reimbursed for training wages for some apprentices through Workforce Innovation and Opportunity Act (WIOA) funds, which are administered by the states.

An RA program has a sponsor, which is responsible for completing all the paperwork related to the program. A sponsor may be a single employer or it may be a group of employers, an industry or trade association, a labor organization, an institute of higher education, a nonprofit, or an intermediary⁸ that connects the apprentice with one or more employers. Most RA programs are sponsored by individual employers but a considerable number are "group nonjoint," which involves a group of nonunion

⁶ The act pioneered national standards for apprentice training, enabling thousands of previously unemployed youths to be trained during World War II, according to the Eastern Seaboard Apprenticeship Conference. State apprenticeship agencies worked with the DOL to encourage the growth of apprenticeship training.

⁷ For each year of the RA, the apprentice normally participates in 2,000 hours of OJL and at least 144 hours of RTI.

⁸ In the event that the sponsor is not an employer, the apprentice must also have an employer and be paid a wage by that employer throughout the course of the program.

employers, or “group joint,” which involves union employers (management) and their union workforce (labor union locals).

An employer or sponsor of an RA program generally does the following:

- Develops apprenticeships for new employees or incumbent workers, or both
- Identifies minimum qualifications for an apprenticeship program, such as having certain academic skills, having the ability to physically perform essential functions, possessing a driver’s license and a clean driving record, and having the ability to pass initial and random drug testing
- Is responsible for determining the length of time for the program and/or the set of competencies associated with program completion, identifying in advance the competencies or time increments associated with wage increases, supervising the OJL, and measuring and recording an apprentice’s completion of necessary requirements
- Develops a curriculum that covers both OJL and RTI

RA employers or sponsors sometimes rely on an apprenticeship intermediary to help them design the curriculum, recruit and select apprentices, and manage their programs.

RA programs increasingly are one or two years in length, although traditional RA programs in construction and the skilled trades may be four years or longer. RA programs are competency-based (progress is marked by the apprentice’s ability to perform necessary job functions), time-based (progress is marked by the number of hours the apprentice has completed in OJL and RTI), or a hybrid (progress is measured through a combination of hours and demonstration of competencies).

A Snapshot of Activity in Registered Apprenticeship Programs

Table 1 provides a summary of RA activity nationally and in Pennsylvania, New Jersey, and Delaware. Table 2 provides a breakdown of the occupations with the largest number of RAs in Pennsylvania, New Jersey, and Delaware.

Table 1. Registered Apprenticeship Programs for the 2016 Fiscal Year

	Active Apprentices	New Apprentices	Total Completers	Active Programs	New Programs
National	505,371	206,020	49,354	21,339	1,701
Pennsylvania	14,110	4,654	1,190	745	37
New Jersey	6,235	2,344	865	577	73
Delaware	1,141	224	145	308	10

Notes: The number of active apprentices includes new apprentices. The number of active programs includes new programs. About 20 percent of the national total of 505,371 active apprentices were active duty members of the Navy, Marine Corps, and Coast Guard through the United Services Military Apprenticeship Program. For additional data on the number of RA programs and apprentices, see https://doleta.gov/oa/data_statistics.cfm/. Source: U.S. Department of Labor.

Table 2. Occupations with the Largest Number of Registered Apprenticeship Programs

Pennsylvania		New Jersey		Delaware	
Leading Occupations by Number of Apprentices	Number of Apprentices	Leading Occupations by Number of Apprentices	Number of Apprentices	Leading Occupations by Number of Apprentices	Number of Apprentices
Corrections Officer	2,363	Carpenter	1,846	Electrician	309
Carpenter	2,204	Electrician	898	HVAC Worker	108
Electrician	1,989	Plumber	504	Plumber	98
Plumber	892	Corrections Officer	304	Construction Laborer	61
Pipefitter (Construction)	751	Steelworker	296	Sheet Metal Worker	45

Source: U.S. Department of Labor. Data are current as of May 2017.

RECENT FUNDING AND ACTIVITY IN REGISTERED APPRENTICESHIP PROGRAMS

The Obama administration and Congress provided more than \$265 million in funding⁹ in an effort to double the number of apprentices from 2014 to 2019 and to launch apprenticeships in fast-growing industries. The \$265 million included \$175 million in American Apprenticeship Initiative¹⁰ grants to develop new apprenticeships and \$50.5 million to help states develop and implement strategies to support apprenticeship expansion. Some of the \$265 million has also been targeted to increase apprenticeship opportunities for women, people of color, disconnected youth, and other populations that have been underserved in traditional RA programs¹¹ and to integrate apprenticeship into state education and workforce systems.

Most of the funds have been allocated to apprenticeship intermediaries and workforce development organizations. A small amount of the funds can be made available to for-profit businesses to help get apprenticeship programs started.

Recent DOL funding is promoting the expansion of occupations in apprenticeship training and is cultivating new apprenticeship sponsors, intermediaries, and RTI providers.

⁹ A summary of DOL funding streams may be found at www.dol.gov/featured/apprenticeship/grants.

¹⁰ This included awards to Philadelphia Works, Inc., to develop apprenticeships in health care and IT and to the West Central Job Partnership in New Castle, PA, to develop apprenticeships in manufacturing.

¹¹ Jobs for the Future, located in Boston, one of four national equity partners, is working in several cities, including Philadelphia, where JEVS Human Services, a Philadelphia-based not-for-profit organization that originated as the Jewish Employment and Vocational Service, is providing technical assistance as an apprenticeship intermediary and facilitator.

Pennsylvania

In 2016–2017, new apprenticeship programs were started in Pennsylvania for certified nursing assistants, community health workers, early childhood education teachers, and emergency medical technicians and paramedics. Some of these programs are described in the New and Noteworthy Programs section of this guide. A Pennsylvania Apprenticeship and Training Office was recently established in the Pennsylvania Department of Labor and Industry to explore nontraditional apprenticeship opportunities in high-priority industries such as health care and education. According to Eric M. Ramsay, director of the office, the office plans to have representatives in southeast, central, and western regions of the state and is working with the Keystone Development Partnership¹² to expand apprenticeship programs.

The Pennsylvania Apprenticeship and Training Council approved new RA programs¹³ in the child-care, construction, health-care, manufacturing, and science/technology sectors at its May 2017 meeting. The programs include an apprenticeship program for biomedical research technicians that was developed by the Wistar Institute,¹⁴ other university biomedical research centers, and pharmaceutical companies.

Two notable long-established comprehensive skilled trades programs that serve large geographic regions are operated by the Finishing Trades Institute of the Mid-Atlantic Region¹⁵ and the Sheet Metal Workers Local Union 19.¹⁶

Philadelphia

Philadelphia Works, Inc. (PW), which received an American Apprenticeship Initiative grant to develop health-care and IT apprenticeships, has funded the development of pre-apprenticeship curricula for an IT program and for another program to train youth to work in the areas of behavioral health or intellectual disabilities. It has also helped develop and register several RA programs, including one program started by WES Health System for psychiatric rehabilitation assistants and another started by JEVS Human Services for direct support professionals. PW has also worked with university research centers and pharmaceutical companies to establish an RA for biomedical research technicians, and it is developing a pre-apprenticeship program linked to high school career and technical education programs and another connected to a manufacturing industry partnership. It is also working to integrate RAs in public workforce services and to inform PW customers about available RAs.

In addition, JEVS Human Services is providing technical assistance as an apprenticeship intermediary and facilitator.¹⁷ JEVS is a sponsor of behavioral health apprentices who will receive preparation to become direct support professionals at JEVS¹⁸ and is developing a pre-apprenticeship IT curriculum for youth. The organization is also working to include a pre-apprenticeship component and a multi-

¹² See www.kdpworks.org/.

¹³ The programs are approved by the Pennsylvania Apprenticeship and Training Council, registered by the Pennsylvania Apprenticeship and Training Office, and recognized by the DOL's Office of Apprenticeship.

¹⁴ See www.wistar.org/.

¹⁵ See www.fti.edu/.

¹⁶ See www.smartlu19.org/apprenticeships.html.

¹⁷ JEVS's work is related in part to a DOL contract with Jobs for the Future to increase RA participation by women, people of color, and disconnected youth.

¹⁸ For further information, see the description on the District 1199C Training & Upgrading Fund in the New and Noteworthy Programs section of this guide.

employer-sponsored model in a new Pennsylvania IT apprenticeship program. JEVS is providing technical assistance and increasing employer awareness in order to expand the use of apprenticeships.

New Jersey

Apprenticeship programs have been developed in the New Jersey Health Care Talent Network,¹⁹ and apprenticeship opportunities are being explored in the state's Advanced Manufacturing Talent Network. A state program, New Jersey Builders Utilization Initiative for Labor Diversity (NJBUILD), seeks increased participation in apprenticeships in the construction trades by women and members of racial and ethnic minorities. Another state program, Youth Transitions to Work,²⁰ connects high school students to apprenticeships. Each of the networks and programs mentioned here enables participants to obtain college credit. The state also funds county apprenticeship coordinators²¹ who help develop RA curricula and link high school co-op and career and technical education programs to pre-apprenticeships and RAs.

Delaware

Delaware's Department of Labor Division of Employment and Training, the state apprenticeship agency that oversees apprenticeship activity in Delaware, is assisting employers and sponsors to start a statewide automotive technician program as well as hotel associate and carpentry programs in Sussex County. Apprenticeship activity in Delaware traditionally has been in construction and the skilled trades.

In a unique feature, the Delaware Department of Education (DDOE) pays for an apprentice's RTI if the RTI is provided at one of the state's four adult vocational-technical high schools. In order to take the RTI without cost to the apprentice, the apprentice provides the adult vocational-technical high school with an Apprenticeship Agreement signed by the apprentice, a sponsor or employer, and the state apprenticeship agency. The DDOE allocates up to \$1.7 million a year for apprenticeship-related RTI under House Joint Resolution #9 enacted nearly four decades ago, according to Kyle Maguire, apprenticeship training manager in the Division of Employment and Training. The funds allocated for RTI, however, cannot presently be used in Delaware's community college system, Maguire said.

Delaware also had the distinction of being one of only 10 states selected in January 2017 for a \$2 million three-year grant in an initiative of the Council of Chief State School Officers and JPMorgan Chase & Co. The initiative is intended to expand and improve career pathways for all high school students.²²

Apprenticeships in Financial Services

The DOL is encouraging corporations in the financial services sector to consider starting RAs. Aon, Zurich North America,²³ the Hartford Financial Services Group, Inc.,²⁴ and JPMorgan Chase & Co.

¹⁹ See the description of the health-care network's apprenticeship activity in the New and Noteworthy Programs section of this guide.

²⁰ See http://careerconnections.nj.gov/careerconnections/plan/foryou/youth/youth_transitions_to_work.shtml.

²¹ See http://careerconnections.nj.gov/careerconnections/hire/training/apprentice/registered_apprenticeship.shtml.

²² For information, see www.ccsso.org/News_and_Events/Press_Releases/JPMorgan_Chase_and_CCSSO_Announce_20_Million_to_Improve_Career_Education_for_Young_People_in_10_US_States.html.

²³ For information, see <https://www.zurichna.com/en/careers/apprenticeships> or contact Olivier Meyenhofer at olivier.meyenhofer@zurichna.com. Zurich is working with Harper College, a community college located near Chicago in Palatine, IL, which has developed curricula for RTI in several programs. See employer resources at <http://goforward.harpercollege.edu/academics/apprenticeships/>.

²⁴ For information, see www.thehartford.com/careers/claims-apprentice or contact Cindy Angelini at 602-395-3448 or cindy.angelini@thehartford.com.

have started RA programs in one or more of the following apprenticeable occupations approved by the DOL: general insurance associate, information management, career development technician, computer support specialist/desktop support technician, computer support specialist, computer systems analyst, and network and computer systems administrator. (Companies often use different job titles than those on the DOL's list of apprenticeable occupations.) The parent companies of Aon and Zurich, located in the UK and Switzerland, respectively, have apprenticeship programs. In addition, one financial institution and one insurance company were developing RA programs as of May 2017, according to the DOL.

JPMorgan Chase & Co. is participating in a one-year Houston Community College (HCC) Technology RA Program²⁵ in Houston in cooperation with the DOL. (HCC²⁶ received a \$4.2 million American Apprenticeship Initiative grant to start IT and health-care programs as well as to upgrade an existing program in plumbing-related occupations.) The program is designed for HCC graduates who have earned an associate of applied science degree in computer science and who will be considered for IT positions. Current plans call for 43 apprentices over a five-year period. The first round of apprentices started in March 2017 and a second round of apprentices is expected to start later in 2017.

Tammy L. Newman, vice president of Global Technology Infrastructure Global Service Operations at JPMorgan Chase & Co. in Houston, said: "JPMorgan Chase has agreed to participate in the American Apprenticeship Initiative by providing alternate career pathways and real practice experience through a combination of workplace learning and formal training. Students will receive a Formal Technology Apprenticeship certification within Financial Services — Infrastructure Operations, which will be a nationally recognized credential issued by the DOL at the successful completion of the program."

This is the first apprenticeship program in North America for JPMorgan Chase, which is evaluating the IT program for possible replication in other locations. The company operates apprenticeship programs in Bournemouth and Glasgow in the UK as well as in Singapore.

Apprenticeships in Information Technology

IT apprenticeships are also being organized in a wide range of corporations that have IT departments. The DOL's approved occupations for apprenticeship programs include IT generalist, IT project manager, database administrator, network security administrator, web developer, and software developer.

A number of American Apprenticeship Initiative grants have been awarded for the development of IT apprenticeships. These include a grant to develop a competency-based RA program to recruit, train, and place women, minorities, veterans, and others who are underrepresented in the IT industry. The program, known as Apprenti, is operated by the Washington Technology Industry Association Workforce Institute.²⁷

One of the only financial institutions in the U.S. with an IT apprenticeship program is Barclaycard US, which is in the fifth year of operating a nonregistered IT apprenticeship program at its Wilmington, DE, facility. The two-year program is based on an apprenticeship program operated by its parent company

²⁵ See <https://careers.jpmorgan.com/careers/programs/HCCtechnology-apprenticeship>.

²⁶ See www.hccs.edu/continuing-education/departments/apprenticeship/american-apprenticeship/.

²⁷ See www.washingtontechnology.org/wtia-workforce-institute-officially-opens-registered-tech-apprenticeship-program-apprenti/.

in the UK. Barclay has taken a new cohort of five apprentices a year for four years but increased the number of apprentices in its 2017 cohort to eight.²⁸

DISCUSSION: THE POTENTIAL OF APPRENTICESHIP IN THE U.S.

Modernizing Apprenticeship

There is a lack of awareness and understanding of apprenticeship in the U.S., resulting in part from limited funds for marketing to employers and the public. Apprenticeship is well-understood and effective in construction and the skilled trades, but it needs to be explained and interpreted in high-growth sectors such as IT and health care.

The dual, or bifurcated, system, in which the DOL has RA oversight for half the states and state apprenticeship agencies have oversight for the balance of states, has contributed to some fragmentation in the apprenticeship field.

The more the RA program is streamlined and modernized, the more likely it is to be used by employers. The DOL is working to streamline the registration process and is taking a flexible approach in considering the design of new RA programs, according to DOL staff.

In a few cases, apprenticeship intermediaries have handled RA registration and program requirements for employers and have organized a significant level of activity.²⁹

Efforts are also underway to integrate apprenticeships with other federal programs. Workforce development corporations are gradually making their customers aware of RAs and are including RAs on their eligible training provider lists, making these programs eligible for some grants.

Learning from European Counterparts

The U.S. departments of Commerce, Education, and Labor signed declarations of intent in the summer of 2016 with their counterpart agencies in Germany and Switzerland to share information on apprenticeships and career and technical education. Apprenticeship is relatively embedded in the culture of Germany and Switzerland,³⁰ and educational and employment systems in those countries are more closely linked than those in the U.S. Unlike the U.S., government-paid educational expenses in Germany and Switzerland reduce both the cost of an apprenticeship program and the potential cost of training an apprentice who might later move to another company. RTI doesn't result directly in productivity, and this is a cost that requires longer-term employment in order for the employer to realize a full return. Unlike the

²⁸ For more information, contact Jocelyn Stewart, vice president of Human Resources at Barclaycard US, at JSutton@barclaycardus.com. Also, see Keith L. Rolland, "Barclaycard US Apprenticeship Program in Delaware Enters Fourth Year," *Cascade*, No. 92, Summer 2016; available at www.philadelphiafed.org/community-development/publications/cascade/92/04_barclays-us.

²⁹ Two leading intermediaries are Apprenticeship Carolina, an economic and workforce development initiative led by the state of South Carolina and embedded in the state's community college system, and Vermont HITEC, an educational nonprofit active in Vermont and New Hampshire.

³⁰ For information on Switzerland's vocational education and training system, see www.eda.admin.ch/content/dam/countries/countries-content/united-states-of-america/en/Apprenticeship%20Brochure%20160329%20Web.pdf and <https://swisseducation.edu.ch/en/vocational-education-and-training-0>.

U.S., Germany and Switzerland have an education minister who presides over curricular decisions and government entities and can better coordinate education and workforce development efforts.³¹

In the UK, apprenticeship has grown rapidly with government support in the past decade, and the total number of apprenticeships far exceeds a population-based comparison in the U.S. Although the UK initially encouraged participation by private-sector companies with government funding, the UK recently has changed its approach so that companies above a certain size pay a tariff if they fail to provide enough apprenticeship opportunities.

Middle-Skills Jobs

Apprenticeships often lead to “middle-skills” jobs and require some education, typically in a community college, but not a four-year college degree. There is ongoing debate in the U.S. among educational leaders as well as young people, their parents, teachers, and guidance counselors about whether a four-year college education should be the desirable goal for all young people. Diane Jones, senior fellow at the Urban Institute, observed: “It is important to provide information about actual wages associated with more technical careers to end the myth that a college degree is what guarantees higher lifetime earnings. Many vocational workers out-earn those who have a college degree and even those who have advanced degrees, depending upon the occupation.”

Pre-apprenticeships

Pre-apprenticeships are receiving substantial attention in the apprenticeship field, and, according to DOL staff, pre-apprenticeships are becoming increasingly common.

Pre-apprenticeships give participants an opportunity to prepare for and explore an occupation before committing to an apprenticeship. These programs also help participants meet various workplace expectations, including soft skills such as teamwork and communication, and may enable employers to better gauge participants’ interest and aptitude.

Questions raised in discussions of pre-apprenticeship programs are whether they are closely connected to actual apprenticeships and whether they should operate independently of apprenticeship programs.³² Pre-apprenticeships may lead to higher completion rates³³; the limited data that exist on this matter are at the state level, such as the state of Massachusetts, which has a state pre-apprenticeship program.³⁴

The Apprenticeship Improvement Act of 2017 (H.R. 2377), introduced in Congress in May 2017, would amend the WIOA to include individuals participating in pre-apprenticeship programs offered by employers and provide that such employers may be reimbursed under the act.³⁵

³¹ Source: Diane Jones, senior fellow at the Urban Institute.

³² A useful compilation of resources is available at <https://apprenticeshipusa.workforcegps.org/resources/2017/02/02/10/56/Apprenticeship-Youth>. Some guidance on pre-apprenticeships is provided in a DOL training and employment notice at https://wdr.doleta.gov/directives/corr_doc.cfm?DOCN=5842.

³³ The DOL estimates that the RA completion rate in the states in which the DOL has direct oversight of RAs was about 44 percent in the 2016 fiscal year. Earlier, a Mathematica Policy Research study found that about 45 percent of participants completed their apprenticeships. See Debbie Reed, Albert Yung-Hsu Liu, Rebecca Kleinman, et al., *An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States*. Oakland, CA: Mathematica Policy Research, July 25, 2012; available at https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2012_10.pdf. (The 10 states reviewed include New Jersey and Pennsylvania.)

³⁴ See www.mass.gov/lwd/labor-standards/das/new-pre-apprentice-procedures.html.

³⁵ For information, see www.congress.gov/bill/115th-congress/house-bill/2377.

STARTING NEW REGISTERED APPRENTICESHIP PROGRAMS

Employer interest in apprenticeships may originate in any functional area, but a commitment to start an RA typically will need to involve multiple areas of a company, such as the executive area and the human resources, finance, legal, and production departments. It may also be worthwhile to involve front-line managers because they will play significant roles in mentoring and teaching apprentices.

Employers weigh the costs and benefits of initiatives such as apprenticeships. A report prepared by the U.S. Department of Commerce's Economics and Statistics Administration in partnership with Case Western Reserve University provides insight about the return on investment (ROI) for 13 employers and intermediaries that have operated RA programs. One of the 13, Oberg Industries, is profiled in a case study in this report.³⁶

An employer or sponsor that wants to start an RA program develops the Standards of Apprenticeship in conjunction with the DOL or the state apprenticeship agency. This includes a description of the planned program and occupational position, plans for a curriculum covering OJL and RTI, and a work process schedule. Also, the employer or sponsor is responsible for putting together an Apprenticeship Agreement with each apprentice that outlines incremental wages based on attainment of competencies. This agreement can be paper-based or electronic.

If an employer is starting an apprenticeship program for which the DOL has previously approved an apprenticeable occupation,³⁷ the employer can use previously determined Standards of Apprenticeship and receive expedited approval. If the occupation has not been previously approved, the employer submits to the DOL or the state apprenticeship agency documentation on the need for an apprenticeship program and a curriculum for the planned program. Approval can take one to six months, according to the DOL.³⁸

Intermediaries can fulfill an important role in handling the paperwork for employers and sponsors. If an intermediary is the sponsor of an RA, employers can sign a one-page employer participation agreement.

Employers that want to offer national apprenticeship programs, including in some states overseen by state apprenticeship agencies and others overseen by the DOL, can apply to the DOL for national program status, thereby eliminating the need to gain approval in each state.

Resources for employers are available from the DOL and the American Institute for Innovative Apprenticeship.³⁹ The institute's resources include information on national occupational frameworks (NOFs) for some positions.⁴⁰ The DOL has contracted with the Urban Institute to develop voluntary consensus-based NOFs to help employers and sponsors develop new programs and to assist state and other officials who evaluate apprenticeship applications.

³⁶ The report, released in November 2016, is available at www.esa.gov/sites/default/files/the-benefits-and-costs-of-apprenticeships-a-business-perspective.pdf.

³⁷ For a list of DOL-approved apprenticeable occupations, see www.doleta.gov/OA/occupations.cfm.

³⁸ For details on RA applications, see www.doleta.gov/OA/regulations.cfm.

³⁹ See <http://aiaa.staging.wpengine.com/employers/>.

⁴⁰ NOFs have been posted for community health workers, medical records and health information specialists, cybersecurity support technicians, information technology generalists, and medical assistants.

A new Urban Institute technical assistance guide, *Starting a Registered Apprenticeship Program*, explains how employers and sponsors can make an internal business case for apprenticeships and evaluate their readiness to start apprenticeship programs. The guide, released in June 2017, also contains detailed instructions on registering apprenticeship programs.⁴¹

Employers and sponsors that are interested in developing new programs in Pennsylvania and Delaware will want to contact respective state apprenticeship agencies and regional DOL apprenticeship specialists. In New Jersey, employers and sponsors should contact regional DOL apprenticeship specialists. See the Key Contact Individuals and Resources section at the end of the guide.

Veterans and Apprenticeships

Employers can hire skilled veterans as registered apprentices and can assist veterans to access their GI Bill benefits. How these benefits can be used in connection with RAs is not always clear, and the following information is provided as a starting point for employers.

When the DOL registers an RA program, it is “GI Bill qualified” but not “GI Bill approved.” When approved for the GI Bill, the RA program can assist current and future veteran apprentices to obtain the benefits they earn. Veterans who have existing benefits under the GI Bill may qualify for a monthly stipend paid by the U.S. Department of Veterans Affairs (VA) in addition to the wages they receive through the apprenticeship to help them meet their monthly expenses. The VA and the DOL are working to facilitate GI Bill approval for RA programs.⁴²

When seeking VA approval for an RA program, the following actions must be taken:

1. The employer contacts the respective state approving agency because VA GI Bill benefits are managed by each state even if an employer has registered a national RA program with the DOL. (Note: The state approving agency is not the same as the state apprenticeship agency.)
2. The employer completes and submits VA Form 22-8865: Employer’s Application to Provide Job Training and VA Form 22-8794: Designation of Certifying Official(s). The state approving agency will also ask for a copy of the DOL-approved Standards of Apprenticeship package.
3. The state approving agency sends the forms to a VA representative for the state. Upon approval, the VA will send a letter to the employer issuing a Facility Code and VA Form 22-1999: Enrollment Certification for employers to register veterans for the program.

The employer or sponsor incurs the time involved in completing and maintaining the relevant documentation. State approving agency representatives for Pennsylvania, New Jersey, and Delaware and a DOL representative who specializes in veterans benefits are listed in the section on Key Contact Individuals and Resources section.⁴³

Employers may also want to know about a new U.S. Department of Defense initiative that provides a “bridge” for active duty military service men and women who are transitioning to civilian life. The initiative, DoD SkillBridge,⁴⁴ enables service members meeting certain qualifications to participate

⁴¹ The guide is available at https://innovativeapprenticeship.org/wp-content/uploads/2017/06/Employer-Guide_June-2017.pdf.

⁴² See <https://doleta.gov/OA/veterans.cfm> and www.doleta.gov/OA/pdf/Appshp_Sponsor_FactSheet.pdf.

⁴³ For state approving agency contact information for all states, see www.nasaa-vetseducation.com/Contacts.aspx.

⁴⁴ See <https://dodskillbridge.com/>. For information, contact Mark Toal, national veterans’ employment manager at the DOL, at 202-693-4708 or Toal.Mark.J@DOL.gov.

in apprenticeships, internships, and other employment training during the last six months of their active duty service.

The next section contains five case studies that examine longstanding programs. The Insights sections of these case studies may be of particular interest. This guide also contains material on new and noteworthy programs and contact information and resources on apprenticeship.