WORKFORCE, EDUCATION, AND LABOR

The Implementation of Registered and Unregistered Apprenticeship

Evidence from the Scaling Apprenticeship and Closing the Skills Gap Grants

Karen Gardiner **Daniel Kuehn** **Pamela Loprest** **Stephanie Petrov**

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DISCLAIMER

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Glossary

Group program: A program with one sponsor where multiple employers agree to the apprenticeship standards.

Independent or nongroup program: A program with one sponsor and one employer.

Institution of higher education (IHE): Generally, a two- or four-year college or university. For purposes of the grants, applicants had to represent a consortium of institutions of higher education as defined in Section 102 of the Higher Education Act of 1965 (20 U.S.C. 1002) or be a state system of higher education, such as a community college system office, or a single state higher education board.

Joint program: A program sponsored jointly by a labor organization and one or more employers.

Mentor: Provides on-the-job training opportunities for apprentices. Mentors are other employees of the hiring employer.

Non-joint program: A program not sponsored by a joint labor management organization.

Occupation, occupational field: The specific job associated with an apprenticeship program. The US Department of Labor Office of Apprenticeship or a state apprenticeship agency, which assigns the job a distinct occupational code, must approve occupational fields. Grantees can operate multiple apprenticeship programs within an occupational field, and sponsors can operate multiple programs across different fields.

On-the-job training (OJT): Every apprenticeship program includes OJT (called "on-the-job learning" in apprenticeship regulations and OJT in the funding announcement). Apprentices get hands-on training from an experienced mentor at the jobsite for typically not less than one year. Structured OJT experiences are developed by mapping the skills and knowledge that the apprentice must learn over the course of the program to be fully proficient at the job. Employers traditionally bear most training-related costs.

Pre-apprenticeship program: Prepares individuals to enter and succeed in an apprenticeship program through an approved training curriculum based on industry standards. Can include educational and pre-occupational services (e.g., career and industry awareness workshops, job-readiness courses), hands-on training in a simulated lab experience or through volunteer opportunities, and assistance in applying to apprenticeship programs. Pre-apprenticeship programs involve formal partnerships with at least one apprenticeship program sponsor.

Registered apprenticeship program (RAP): A paid, structured program of work-based learning under mentors, providing both value to employers and formal technical instruction to workers, and culminating in an industry-recognized credential that meets standards for registration by a registration agency. The US Department of Labor Office of Apprenticeship recommends that a registered apprenticeship program includes at least 144 hours per year of related technical instruction and requires at least 2,000 hours of on-the-job training. An apprenticeship sponsor for a specific occupation runs the training program. Sponsors are responsible for registering individual apprentices and determining whether they have successfully completed the apprenticeship program.

Registered apprenticeship program addition, expansion, maintenance, or revision: Changes to an existing registered apprenticeship program, including the development of programs in additional occupational fields by an existing apprenticeship sponsor. Maintenance or expansion may also entail transitioning from a time-based apprenticeship to a competency-based or a hybrid apprenticeship.

Registration agency: The US Department of Labor Office of Apprenticeship or a federally recognized state apprenticeship agency acts as a registration agency, responsible for evaluating an apprenticeship program's apprenticeship standards and for ongoing evaluation of apprenticeship programs to determine whether they comply with federal regulations related to program design, worker protections, and other criteria. Registered programs can access federal resources, state tax credits where available, and technical assistance.

Related technical instruction (RTI): Instruction that complements the apprentice's on-the-job learning, delivering the technical concepts and workforce and academic competencies needed to succeed on the job. A community college, a technical school, an apprenticeship training school, or the employer itself can provide the instruction. Education partners collaborate with employers to design the curriculum to deliver the skills and knowledge needed by apprentices. All partners work together to identify how to pay for the RTI, including the cost to the employer and other funds that can be leveraged.

Sponsor: Entity responsible for the overall operation of the registered apprenticeship program, working in collaboration with the partners. Sponsors can be a single employer or a consortium of employers. Alternatively, the sponsor can be any of a range of workforce intermediaries including an industry association or a joint labor-management organization. Community colleges and community-based organizations can also serve as sponsors.

Standards of Apprenticeship: Document describing apprenticeship components for a specific job role. Its individual standards include the purpose of the proposed apprenticeship program, term of the apprenticeship, provision of related technical instruction, wage progression for the apprenticeship,

supervision of apprentices, safety, registration of apprentices, work process schedule, probation period, periodic evaluation of apprentices' performance, completion requirements, and apprentice-mentor ratio.

Unregistered apprenticeship program: Includes paid, work-based learning; on-the-job training; an educational or instructional component; and an industry-recognized credential upon completion. Unregistered programs do not have sponsors or Standards of Apprenticeship and are not directly reviewed and approved by federal or state apprenticeship offices.

Executive Summary

Several of the US Department of Labor's (DOL's) grant programs aim to expand apprenticeships to nontraditional occupations (i.e., nonconstruction trades) and to increase opportunities for all Americans. Two such grant programs—Scaling Apprenticeship Through Sector-Based Strategies (hereafter Scaling Apprenticeship), which launched in 2019, and Apprenticeships: Closing the Skills Gap (hereafter Closing the Skills Gap), which launched in 2020—focused on expanding apprenticeships in sectors with high demand for skilled workers, including health care, information technology (IT), and advanced manufacturing. Between the two grant programs, DOL awarded almost $284 million to 51 grantees (see box ES.1). In this report we present findings from the implementation evaluation of the two programs.

Apprenticeships are structured work-based training programs that combine classroom instruction with on-the-job training (OJT) under a mentor at the employer's worksite. Apprentices are employed during their training and earn progressively higher wages.

The Scaling Apprenticeship and Closing the Skills Gap grants had similar goals: expanding apprenticeships in H-1B industries and occupations with high demand for skilled workers[1] and increasing apprenticeship opportunities generally. Both grants focused on similar industries: advanced manufacturing, IT, and health care. Both supported creating new and expanding existing apprenticeship programs, either registered or unregistered. DOL requires all registered apprenticeships and unregistered apprenticeships under these grants to contain the following elements: paid, work-based learning at an employer site; OJT and mentorship; an educational or instructional component; an industry-recognized credential upon completion; and safety and supervision policies and procedures.

Registered apprenticeship programs are approved by either the DOL Office of Apprenticeship or a federally recognized state apprenticeship agency and adhere to guidelines applying to the length of related technical instruction (RTI) and OJT. A sponsor is responsible for the program and maintains the Standards of Apprenticeship, which documents RTI, OJT, wage increases, and other aspects of the program. Unregistered programs are not reviewed and approved by the Office of Apprenticeship or a

[1] The H-1B visa program (authorized and modified through several immigration laws since foreign worker visas were included in the Immigration and Nationality Act of 1952) helps employers who cannot otherwise obtain needed business skills and abilities from the US workforce by authorizing the temporary employment of qualified individuals who are not otherwise authorized to work in the country. https://www.dol.gov/agencies/whd/immigration/h1b.

state apprenticeship agency and are not required to have a sponsor or Standards of Apprenticeship. They may be shorter in duration than registered apprenticeships because they do not have to meet the same requirements for the number of RTI and OJT hours.

Grantees differed in some respects. For example, only institutions of higher education (IHEs) could apply for and receive Scaling Apprenticeship grants, whereas the Closing the Skills Gap grant program did not restrict grantee organizational type. Additionally, only Scaling Apprenticeship grantees could use grant funds to support pre-apprenticeship programs.

BOX ES.1

Scaling Apprenticeship Grantees:

- Awarded in June 2019 to 23 grantees; grants ranged from $2 million to $12 million.
- Only institutions of higher education (IHEs) were eligible to apply.
- The average grantee proposed to serve 3,583 participants and 2,582 apprentices.
- Grantees could support pre-apprenticeship programs.

Closing the Skills Gap Grantees:

- Awarded in February 2020 to 28 grantees; grants ranged from about $2 million to $6 million. Three grants ended early and are not included in the study.
- IHEs, industry or employer associations, labor unions, and workforce intermediaries could apply.
- The average grantee proposed to serve 3,402 participants and 3,119 apprentices.
- Grantees could not support pre-apprenticeship programs with grant funds.

Implementation Evaluation

The DOL Chief Evaluation Office commissioned an evaluation of the Scaling Apprenticeship and Closing the Skills Gap grant programs, which includes an implementation study, an impact study, and a cost-benefit study (the latter two studies will be reported separately). The implementation study includes 48 grantees: 23 Scaling Apprenticeship and 25 Closing the Skills Gap grantees. The primary objectives of the study are to report the types of components, models, partnerships, and strategies grantees implemented, how they implemented them, and what grantees and their partners report as promising strategies for reaching the goals of the grant programs. It also describes what typologies or dimensions of apprenticeship emerge from what these grantees report and suggests what DOL or other policymakers and practitioners seeking expansion of apprenticeship might want to replicate. The implementation study will also inform interpretation of the findings of the forthcoming impact evaluation, which will assess apprentice outcomes, and the forthcoming cost-benefit study, which will estimate the net benefits of apprenticeship.

The **implementation study research questions** are as follows:

- What apprenticeship components, models, partnerships, and strategies did Scaling Apprenticeship and Closing the Skills Gap grantees design or expand?
- How did grantees implement the components, models, partnerships, and strategies?
- What components, models, partnerships, and strategies do grantees and their partners report as promising for supporting positive outcomes for apprentices and employers?
- What aspects of apprenticeships might be replicable?

The data sources for the implementation evaluation include DOL administrative data and virtual site visits with selected grantees, supplemented by grant documents and program data that grantees submitted to DOL. Of the 51 grantees, three Closing the Skills Gap grantees' programs ended early and are not included in the most recent grant documents used for the study or the most recent quarterly reports to DOL. As a result, analyses based on those sources are based on 48 grantees. However, one of the three Closing the Skills Gap grantees whose program ended early reported data on its grant-funded participants to DOL's administrative database before its grant ended, so analyses using those data include 49 grantees. A description of each source follows.

- **Grant documents:** These documents include grant applications, grant modifications, and Quarterly Narrative Reports that grantees submitted to DOL to report on their programs' progress. They are included for 23 Scaling Apprenticeship and 25 Closing the Skills Gap grantees (48 grantees in total) in this study.
- **Quarterly Performance Reports (QPRs):** Grantees used QPRs to submit program data to DOL. The QPRs described grant targets, aggregate characteristics of participants, their in-program activities, and completion rates. The data also included the number of programs created or expanded and the number of employers engaged in grant activities. This report uses QPR data through March 31, 2024, unless otherwise indicated. These data are included for 23 Scaling Apprenticeship and 25 Closing the Skills Gap grantees (48 grantees in total) in this study.
- **Workforce Integrated Performance System (WIPS):**[2] Data in WIPS, DOL's administrative database, included individual-level information about Scaling Apprenticeship and Closing the Skills Gap participants. The data contains demographic characteristics, employment status at

[2] WIPS is the performance management system for programs under the Workforce Innovation and Opportunity Act and for other DOL-funded workforce programs. Data are entered and updated quarterly for participants.

program entry, highest education level completed at program entry, and program entry and exit dates. This report uses data extracted as of December 31, 2023. The study includes all individuals reported by 23 Scaling Apprenticeship and 26 Closing the Skills Gap grantees (49 in total) in this study.

- **Virtual site visits:** Visits with 18 grantees (nine from each grant program) in fall 2022 and summer 2023 focused on apprenticeship components, program models, partnerships, and strategies designed or expanded and implemented and that appeared promising for supporting positive outcomes for apprentices and employers. The team gathered detailed information about 62 apprenticeship programs implemented by these 18 grantees. The team selected grantees to ensure variation in grant programs; apprenticeship models used (registered apprenticeship, unregistered apprenticeship, and pre-apprenticeship); industry and occupational focus of the grant; program size; target population(s); geographic area served by the grant; and inclusion in the impact evaluation.

The initial implementation study report chapters focus on outcomes for all grantees (chapter 3) and grant participants (chapter 4). Subsequent chapters provide details, based on site visits, to highlight key themes described in earlier chapters.

Study Caveats

Readers should keep in mind the following considerations when reviewing this report:

- Because the team did not randomly select site visit grantees, they are not representative of Scaling Apprenticeship and Closing the Skills Gap grantees. Although statistical representativeness of grantees is important for quantitative outcome and impact studies, it is not a key factor in sample selection for qualitative implementation research, which aims to document the range of activities and strategies the grantees implemented. The implementation study uses the site visit interviews to describe what grantees and partners report as promising practices for expanding apprenticeship that DOL and other policymakers can use to inform future apprenticeship initiatives.
- The team used WIPS data to confirm information gathered from the grant documents, quarterly performance data, and site visits, as well as to provide additional information not captured by those data sources. The team did not formally test differences between subgroups for statistical significance.

- Findings are descriptive and should not be interpreted as ascribing a causal link between grant activities and services—including those that respondents described as promising—and participant outcomes.

Summary of Findings

The study notes that a key contextual factor in program implementation was COVID-19-related disruptions, confirmed by grantees during site visits. The pandemic-related shutdowns occurred just weeks after DOL awarded the Closing the Skills Gap grants in February 2020, causing delays in implementation. Although DOL awarded the Scaling Apprenticeship grants earlier, in 2019, Scaling Apprenticeship site visit grantees also described COVID-related disruptions to grant activities. With this context in mind, the key implementation study findings are the following:

- **Institution of higher education (IHE) grantees leveraged their position in the postsecondary education sector to recruit from their student populations and provide classroom instruction (related technical instruction, or RTI) on-site before connecting apprentices with employers.**

Across both grant programs, 37 grantees were IHEs. IHE site visit grantees stated that they had built-in access to a wide pool of candidates, including participants in noncredit workforce training programs on their campuses. In 71 percent of the apprenticeship programs described in detail by grantees, IHEs provided the RTI on-site. Two grantees offered RTI before apprentices were hired.

Differences between IHE and non-IHE grantees appeared at the grant application stage. Each grantee proposed participant and apprentice targets upon which they were assessed. DOL defined participants as anyone enrolled in an apprenticeship program, but also anyone receiving a grant-funded service, including enrollment in a pre-apprenticeship program (Scaling Apprenticeship grantees only), an assessment related to training, and case management. DOL defined apprentices as those participants who were hired by an employer. Thus, all apprentices are participants, but not all participants became apprentices.[3] IHE grantees collectively proposed to enroll more participants than apprentices, thus expecting some drop-off between enrollment into grant-funded services and being hired as an apprentice. Specifically, the average IHE grantee expected 77 percent of participants would be hired as

[3] Scaling Apprenticeship grantees were required to set goals for the number of "apprentices enrolled," while Closing the Skills Gap grantees were required instead to set goals for the number of "participants employed." Although alternative language was used in the two grant programs, these two categories of participants met the same apprenticeship requirements and were considered apprentices by DOL. For the purposes of comparing outcomes across grant programs, we therefore treated both of these groups as equivalents and identified them as apprentices.

apprentices, compared with 99 percent for the average non-IHE grantee. IHE grantees noted that participants might determine after taking classes or participating in other activities that they were not interested in the occupation or that they sought a different occupational pathway at the college, such as a health care degree program rather than an apprenticeship (Ruggiero and Payne, forthcoming).

- **Grantees created and expanded apprenticeship programs in nontraditional occupations, with IT the most common industry.**

Twenty-eight of the grantees across both programs implemented IT programs. The next most common occupational category was advanced manufacturing (22 grantees), followed by health care (12 grantees). The distribution of occupations was similar for the 62 apprenticeship programs described by 18 site visit grantees.

Across the two grant programs, grantees had implemented 3,318 new apprenticeship programs and expanded 1,813 existing apprenticeship programs as of March 31, 2024. Scaling Apprenticeship and Closing the Skills Gap grantees collectively exceeded both their new and expanded program targets.

Grantees' descriptions of 62 programs during the site visits provided additional details about 18 grantees' activities. Grantees that created new apprenticeship programs could design their own programs, but they needed to recruit employers to sponsor or partner with the new program and develop the Standards of Apprenticeship if the program was registered. Expanding existing apprenticeship programs did not involve program design or registration paperwork but still required grantees to recruit employers (or have existing employers take on more apprentices) and to address their needs.

- **More grantees supported registered apprenticeship programs than unregistered programs, but the two program types shared many characteristics employers described as important.**

Overall, grantees and employers appeared to value both registered and unregistered apprenticeship programs. Across both grant programs, most grantees (28 out of 48) supported both registered and unregistered programs. Seventeen grantees enrolled apprentices solely in registered programs and three grantees solely in unregistered programs.

The unregistered and registered programs described during site visits shared many characteristics. Most registered and unregistered programs measured skills development through demonstrated competencies in specific skills (69 percent of registered programs and 53 percent of unregistered ones).

The average registered program was 3,489 hours; the average unregistered program was 2,908 hours, thus exceeding the minimum hours required of registered programs by regulation (2,000 hours).[4]

Grantees and employers reported a benefit of unregistered programs was avoiding the time and resources associated with program registration. However, unregistered programs still needed to demonstrate measurable skills gains and produce recognizable credentials of value. One employer reported that it did not care whether a program was registered or not if the marketplace accepted the credential earned. Other grantees, though, reported that intermediaries, industry associations, and workforce partners involved with these grants helped them design and register programs, thus making registered programs more attractive and the registration process easier for employers.

- **Although most apprentices were men, larger shares of apprentices in these two grant programs were women, Black, or Asian relative to registered apprentices nationally.**

Men made up a larger proportion of apprentices than women in both of the grant programs (56 versus 37 percent). However, the share of women apprentices was more than twice their proportion in registered apprenticeship programs nationally (14 percent). The proportion of grant-supported apprentices identifying as non-Hispanic Black was also higher than the national average, as was the share identifying as Asian. These sex, race, and ethnicity statistics likely reflect the grants' focus on nontraditional industries and occupations and the lesser focus on male-dominated traditional apprenticeships in construction occupations.

- **Apprentice retention strategies included targeting participants with the skills to succeed and providing robust supports.**

Grantees supported apprentice retention by recruiting and screening potential apprentices for skills needed to succeed in an apprenticeship (e.g., through tests or based on the types of college programs in which they had enrolled). They also provided support outside of standard mentoring during RTI and OJT. Grantees used career coaches and navigators in addition to the standard mentorship provided during an apprenticeship to support apprentices during their training. One grantee, the University of Cincinnati, described how flexible scheduling of OJT to align with their cooperative education (co-op) program helped to ensure that students could successfully complete their RTI. Grantees also stressed the importance of setting clear expectations for employers to provide support and guidance during OJT.

[4] The difference between registered and unregistered program length was not statistically significant.

- **Collectively, grantees engaged 8,343 employers to participate in apprenticeships, using similar strategies for recruitment regardless of occupational sector. Grantees that used incentives reported they were helpful in recruiting employers.**

In site visits, grantees reported that messages that resonated with employers included the need for talent, that apprenticeship builds on existing employment and training practices, that apprenticeship programs are flexible, and that grantees and partners can minimize the burden of implementing an apprenticeship program. Eleven of the 18 site visit grantees described employer incentives, with one describing them as "a huge strategy" for recruiting employers. Grantees provided incentives to offset the cost of RTI and mentor training time, for supportive services, and to encourage small employers to start programs.

Implications for Apprenticeship Program Operators and Policymakers

The Scaling Apprenticeship and Closing the Skills Gap grantee implementation study findings suggest implications for DOL and funders of future apprenticeship grant programs, as well as apprenticeship program operators. Presented with multiple allowable apprenticeship training options detailed in the grant Funding Opportunity Announcements, grantees implemented different combinations of programs and activities. This flexibility recognizes that employers have varying goals for their workforce training activities and hiring needs, and that potential program participants also seek a variety of options. Grantees also reported how different program dimensions helped expand apprenticeships in several occupational areas and to potential apprentices. In this section, we present program dimensions (or typologies) that merit further testing and potentially replication.

- **Grantees used the flexibility afforded by the grant funding announcements to implement registered and unregistered programs. However, unregistered programs supported by grants still had to meet five specific criteria related to OJT, RTI, and wages and thus shared certain characteristics with registered programs, a fact that has implications for interpreting findings and for federal support for unregistered programs in the future.**

It is important to note that the Funding Opportunity Announcement for both grant programs set out required elements for apprenticeship programs, regardless of whether they were registered or unregistered: paid employment, OJT and mentorship, RTI, an industry-recognized credential, and safety and supervision policies and procedures. Thus, the Scaling Apprenticeship– and Closing the Skills Gap–

supported unregistered programs are not necessarily comparable to all unregistered programs that label themselves as apprenticeships but do not incorporate the required elements. For example, the unregistered programs implemented, on average, exceeded the 2,000-hour OJT minimum required of registered apprenticeships. The findings suggest that employers and grantees ensured that their new or expanded unregistered programs met basic specifications that are akin to those that apply to registered programs.

- **Grantees' experiences suggest that unregistered apprenticeship may be more appropriate for expansion of apprenticeship in IT and advanced manufacturing than in health care.**

Health care employers affiliated with the site visit grantees adopted registered apprenticeship programs. It could be that certain aspects of health care occupations, such as licensure requirements, make apprenticeships in health care more suitable to registration. Employers in advanced manufacturing or IT programs, on the other hand, favored unregistered programs according to site visit grantees. Future grant programs might consider the occupational focus when providing flexibility to register or not register programs. In some cases, this will depend on the program's authorizing legislation, which in some cases restricts funding to registered apprenticeship programs.

- **Different types of grantee organizations have unique attributes for reaching program goals. DOL may want to fund a mix of grantee organization types in the future, including IHEs.**

As organizations, IHEs bring unique institutional structures to apprenticeship. As described in Ruggiero and Payne (forthcoming), it is possible that some participants may determine after taking classes that they are not interested in the occupation or that they would prefer a different occupational pathway (e.g., a health care degree program rather than an apprenticeship). And although employers ultimately hire apprentices, IHE grantees can create a pipeline of candidates that the employer might not otherwise access. For example, they may be positioned to help improve candidates' success in being hired as an apprentice by providing additional training or services. IHEs can offer and fund through their grants pre-training options (e.g., remedial math or English) or pre-apprenticeships, options that non-IHE grantee organizations might not be able to accommodate.

- **Varied employer recruitment messages and strategies recognize employers' varying motivations to adopt apprenticeship.**

There is no one-size-fits-all sales approach to employer engagement. For example, whereas some employers adopted apprenticeship to build career pathways within their organizations and to prepare for staff retirements, others recognized they needed a new way to recruit and retain staff. Some

employers created new programs to reflect their specific needs, while others signed on to existing programs. Grantees that offered incentives described them as a powerful way to interest employers in trying apprenticeship as a workforce training model.

What's Next?

The forthcoming Scaling Apprenticeship and Closing the Skills Gap impact study will evaluate the causal impact of apprenticeships on employment and earnings. The findings from this implementation study will help the evaluation team understand and interpret the impact study findings and suggest areas for important subgroup analyses.

Chapter 1: Introduction

Apprenticeship is a structured, work-based training model that combines technical instruction in a physical or virtual classroom with on-the-job learning and mentoring at an employer's worksite. Apprentices are hired by their employers and earn progressively higher wages. Apprenticeships provide training in a specific occupation, and apprentices learn occupational skills recognized and transferable across employers. Apprenticeship has long been used as a training model for construction-related occupations, and over the past decade the US Department of Labor (DOL) has invested in grant programs to expand apprenticeship to a range of industries and occupations, and as a result reach new populations of apprentices. Two such grant programs—Scaling Apprenticeship Through Sector-Based Strategies (hereafter Scaling Apprenticeship), launched in 2019, and Apprenticeships: Closing the Skills Gap (hereafter Closing the Skills Gap), launched in 2020—focused on expanding apprenticeship in sectors with high demand for skilled workers, including health care, information technology (IT), and advanced manufacturing.[5] Between these two grant programs, DOL awarded almost $284 million to 51 grantees.

This report presents findings from the implementation study of the Scaling Apprenticeship and Closing the Skills Gap grant programs. The DOL Chief Evaluation Office commissioned an evaluation of the grant programs as part of the Apprenticeship Evidence-Building Portfolio project. The Urban Institute and partners Mathematica and Capital Research Corporation conducted the Scaling Apprenticeship and Closing the Skills Gap implementation study, as well as impact and cost-benefit studies that will be reported on separately.

This introductory chapter first provides background information on the two grant programs and the apprenticeship training model. It concludes with an overview of the report.

Overview and Goals of the Grant Programs

The Scaling Apprenticeship and Closing the Skills Gap grants are two of DOL's initiatives to expand apprenticeship as a training model over the past decade. Grantees identified the types of apprenticeship

[5] See "Overview of the Scaling Apprenticeship Through Sector-Based Strategies Grant Program and Project Descriptions," US Department of Labor, accessed June 16, 2025, https://www.dol.gov/sites/dolgov/files/ETA/skillstraining/ScalingApprenticeshipProjectDescriptions, and "Overview of the H-1B Apprenticeship: Closing the Skills Gap Grant Program," US Department of Labor, accessed June 16, 2025, https://www.dol.gov/sites/dolgov/files/apprenticeship/files/Apprenticeship-Closing-The-Skills-Gap-Grant-Program-Summaries.pdf.

programs they would support, including their occupational focus and their decisions to register or not register their programs. Grantees in both programs could support registered and unregistered apprenticeship programs, and Scaling Apprenticeship grantees could support pre-apprenticeship programs with grant funds.[6]

Both grant programs had similar goals: expanding apprenticeships in H-1B industries and occupations with high demand for skilled workers[7] and increasing apprenticeship opportunities for all Americans. Both grants focused on similar industries: advanced manufacturing, IT, and health care. Closing the Skills Gap grantees had an added goal of expanding apprenticeship in artificial intelligence– and cybersecurity-related occupations within the larger IT industry. Eligible participants were unemployed, underemployed, or incumbent workers (workers currently employed), 17 years of age or older, and not currently enrolled in school within a local educational agency.[8] Details of the grant programs are summarized below.

The period of performance for both grant programs was 48 months. However, grantees in both programs could apply for no-cost extensions that did not include additional funds but provided more time to complete approved activities. All Scaling Apprenticeship grantees received no-cost extensions, as did about half of Closing the Skills Gap grantees.

Scaling Apprenticeship Grants

In June 2019, DOL awarded $183.8 million in Scaling Apprenticeship grants to 23 grantees in 18 states. Only institutions of higher education (IHEs), including community colleges, state higher education systems, or a consortium of higher education institutions, could apply for Scaling Apprenticeship grants.

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[6] The grants also initially supported Industry-Recognized Apprenticeship Programs (IRAPs), in accordance with a 2020 DOL rule where qualified third-party entities, known as Standards Recognition Entities, were authorized to oversee "industry-recognized" apprenticeship programs that were not registered with the Office of Apprenticeship. In September 2022, DOL rescinded the 2020 IRAP rule. See "Apprenticeship Programs, Labor Standards for Registration, RIN 1205–AC06," 87 Fed. Reg. 58269 (Sept. 26, 2022), accessed July 29, 2025, https://www.federalregister.gov/documents/2022/09/26/2022-20560/apprenticeship-programs-labor-standards-for-registration. While some grantees continued to use the term *IRAP* to describe their unregistered apprenticeship programs after 2022, none of the unregistered apprenticeships were officially recognized as IRAPs after the rule was rescinded.

[7] The H-1B visa program helps employers who cannot otherwise obtain needed business skills and abilities from the US workforce by authorizing the temporary employment of qualified individuals who are not otherwise authorized to work in the United States. See "H-1B Program," US Department of Labor, accessed June 16, 2025, https://www.dol.gov/agencies/whd/immigration/h1b.

[8] See "Notice of Availability of Funds and Funding Opportunity Announcement for: Scaling Apprenticeship Through Sector-Based Strategies," US Department of Labor, accessed July 29, 2025, https://www.dol.gov/sites/dolgov/files/eta/grants/pdfs/foa-eta-18-08.pdf, and "Notice of Availability of Funds and Funding Opportunity Announcement for: Apprenticeships: Closing the Skills Gap," US Department of Labor, accessed July 29, 2025, https://www.dol.gov/sites/dolgov/files/ETA/skillstraining/FOA-ETA-19-09.

These grants aimed to accelerate the expansion of apprenticeship as an effective and innovative postsecondary education and training pathway by focusing exclusively on IHEs.[9]

Grantees collaborated with industry associations to increase apprenticeship through two key activities: training apprentices and taking apprenticeship programs to scale.[10] Together, grantees and their partners needed to have the capacity to develop and deploy training and related services shortly after receiving grant funds to serve the large number of apprentices expected under the grant program. Grantees could also use funds to support the design and implementation of pre-apprenticeship programs that served as on-ramps to apprenticeship opportunities, as long as the training was on a career pathway that led to middle-to-high-skilled occupations.[11]

Grantees could create new registered or unregistered apprenticeship programs, or scale both types. Registered programs, described in more detail later in this chapter, are approved by either the DOL Office of Apprenticeship (OA) or a federally recognized state apprenticeship agency (SAA), while unregistered programs are not. Scaling Apprenticeship grant amounts ranged from about $2 million to $12 million. Slightly more than half of grantees (12 of 23 grantees) received the largest awards, ranging from $8 million to $12 million, while one-third (8 grantees) received awards of less than $4 million. DOL expected grantees with the largest awards to serve at least 5,000 apprentices and grantees with the smallest awards a minimum of 800 apprentices.

Closing the Skills Gap Grants

In February 2020, DOL awarded $99.3 million in Closing the Skills Gap grants to 28 public-private partnerships. (Three grantees' programs ended early.) Like Scaling Apprenticeship, the grant period was four years. However, whereas all Scaling Apprenticeship grantees were affiliated with IHEs, Closing the Skills Gap grantees could be IHEs, nonprofit trade organizations, industry or employer associations,

[9] IHE involvement in the apprenticeship system is growing. In 2016, only 30 community colleges sponsored registered apprenticeship programs. In 2023, more than 200 community colleges trained more than 15,500 apprentices (Lerman et al. 2024). However, that still represents only 3 percent of all civilian apprentices, indicating the potential for further expansion of IHE involvement in apprenticeship.
[10] See "Notice of Availability of Funds and Funding Opportunity Announcement for: Scaling Apprenticeship Through Sector-Based Strategies, FOA-ETA-18-08," US Department of Labor, accessed June 16, 2025, https://www.dol.gov/sites/dolgov/files/ETA/skillstraining/FOA-ETA-18-08.
[11] Grant applicants could choose to expand apprenticeships in either industries or occupations in which DOL certified H-1B visas. These H-1B occupations are considered high-skilled industries.

labor unions, or labor-management organizations. Grantees could use funding for new or expanded registered or unregistered apprenticeships but not pre-apprenticeships.[12]

Relative to Scaling Apprenticeship grants, Closing the Skills Gap awards were smaller; the largest grant amount was $6 million. Forty-three percent of grantees (12 of 28 grantees) received grants in the highest range ($4 million to $6 million), while 36 percent (10 grantees) received grants in the lowest range ($2 million or less). As with the Scaling Apprenticeship program, DOL expected Closing the Skills Gap grantees with the largest awards to serve 5,000 or more apprentices, and those with the smallest awards to serve a minimum of 800 apprentices.

Apprenticeship Programs and Pre-Apprenticeships

The Scaling Apprenticeship and Closing the Skills Gap grants supported registered and unregistered apprenticeship programs. The Funding Opportunity Announcements for both grant programs required all apprenticeship programs, whether registered or unregistered, to include the following elements:

- paid, work-based learning at an employer site
- on-the-job training (OJT) and mentorship
- an educational or instructional component, called related technical instruction (RTI) in the registered apprenticeship system
- an industry-recognized credential upon completion
- safety and supervision policies and procedures

Although both registered and unregistered programs included these five elements, they also had key differences that could potentially influence employer decisions.

Registered apprenticeship programs must be approved by either OA or an SAA.[13] The Office of Apprenticeship recommends that a registered apprenticeship program include at least 144 hours per year of RTI and requires it to include at least 2,000 hours of OJT (called "on-the-job learning" in apprenticeship regulations). The 2,000-hour requirement means that registered programs are typically at least one year long, but they are often two to five years long. A sponsor is responsible for the program

[12] See "Notice of Availability of Funds and Funding Opportunity Announcement for: Apprenticeships: Closing the Skills Gaps, FOA-ETA-19-09, US Department of Labor, accessed June 16, 2025, https://www.dol.gov/sites/dolgov/files/ETA/skillstraining/FOA-ETA-19-09%20CSG.pdf.
[13] As of July 2024, 21 states registered programs with OA and 29 states plus Washington, DC, registered programs with an SAA.

and maintains the Standards of Apprenticeship, which documents the RTI, OJT, wage structure, and other aspects of the program. Sponsors can be employers, a consortium of employers, unions, IHEs, state or local workforce agencies, or nonprofit organizations.[14]

Registration forms and the Standards of Apprenticeship[15] submitted for registration approval describe

- the responsibilities of the sponsor;
- the minimum qualifications of apprentices (e.g., age, education);
- apprenticeship program type and length;
- a work process schedule that outlines the major job functions and what apprentices are expected to learn on the job, and a related instruction outline;
- the ratio of apprentices to mentors;
- the apprentice wage schedule;
- selection procedures; and
- the apprentice probationary period.

The timeline for approving new registered programs varies. An evaluation of DOL's American Apprenticeship Initiative grant program found that on average, apprenticeship programs took almost six months to register, with a median time to registration of three months. Programs registered with OA experienced shorter registration times than programs registered with an SAA (Gardiner et al. 2021).

Unregistered apprenticeship programs are not reviewed or approved by OA or an SAA. Unregistered apprenticeships can be shorter than registered apprenticeships because they do not have to meet the same requirements for the number of RTI and OJT hours. Unregistered programs are not required to have formal sponsors or Standards of Apprenticeship. Because they are not registered with OA or a federally recognized SAA, grantees can potentially implement programs more quickly. As noted above, all unregistered apprenticeship programs supported by the Scaling Apprenticeship and Closing the Skills Gap grants had to include the five key components set forth in the funding announcements.

[14] See "Labor Standards for the Registration of Apprenticeship Programs," 29 C.F.R. 29, accessed June 16, 2025, https://www.ecfr.gov/current/title-29/subtitle-A/part-29.
[15] See "Modifications to the Boilerplate Standards of Apprenticeship," US Department of Labor, accessed June 16, 2025, https://www.dol.gov/sites/dolgov/files/ETA/apprenticeship/pdfs/Bulletin.

Pre-apprenticeship programs aim to prepare participants for entry into an apprenticeship program, although some pre-apprentices seek other education or job opportunities. Pre-apprenticeship programs can last from a few weeks to several months and may or may not include paid, work-based experience. They are not registered with OA or an SAA, although some states independently register or certify pre-apprenticeship programs. DOL describes the scope and characteristics of "quality pre-apprenticeship programs" in its Training and Employment Notice 23-23 (ETA 2024).

Overview of the Report

The remainder of this report describes the implementation study design, including the theory of change, research questions, data sources, and implications of the COVID-19 pandemic for grant activities. It then presents the findings from the implementation evaluation of the grants. It is organized as follows:

- Chapter 2: Implementation Evaluation Design
- Chapter 3: Grantees and Their Projects
- Chapter 4: Participant Characteristics
- Chapter 5: Apprenticeship Program Characteristics.
- Chapter 6: Strategies for Apprentice Recruitment and Retention
- Chapter 7: Employer Engagement
- Chapter 8: Conclusions
- The appendix provides additional details on the grants

Chapter 2: Implementation Evaluation Design

In this chapter we present the research questions that guided the study and describe the study's conceptual framework. We then describe the data sources and methodology. Lastly, we present some study caveats.

Research Questions and Conceptual Framework

The primary objectives of the implementation study are embodied by the four key research questions below. This study reports the type of activities grantees implemented, how they implemented them, and what they and their partners consider as promising strategies for reaching the goals of the grant programs. It also describes what typologies or dimensions of apprenticeship emerge from the grantees' programs and suggests what DOL or other policymakers and practitioners seeking expansion of apprenticeship might want to replicate. The implementation study will also inform interpretation of the findings of the forthcoming impact evaluation, which will assess apprentice outcomes, and the forthcoming cost-benefit study, which will estimate the net benefits of apprenticeship.

The **implementation study research questions** are as follows:

- What apprenticeship components, models, partnerships, and strategies did Scaling Apprenticeship and Closing the Skills Gap grantees design or expand?
- How did grantees implement the components, models, partnerships, and strategies?
- What components, models, partnerships, and strategies do grantees and their partners report as promising for supporting positive outcomes for apprentices and employers?
- What aspects of apprenticeships might be replicable?

A conceptual framework guides the research questions and data collection for the implementation study (figure 2.1).[16] The implementation study focuses on the topics in the blue-shaded boxes. The first column shows **inputs**. For both grant types, those inputs include funding, grant staff and leadership, partnerships that predate the grant, experience with existing apprenticeship programs and (for Scaling

[16] The conceptual framework presented in this final report is a streamlined version of one that appeared in the Apprenticeship Evidence-Building Portfolio evaluation design report. See Eyster and colleagues (2023).

Apprenticeship grantees) pre-apprenticeship programs, and knowledge of and experience with the grant target population(s).

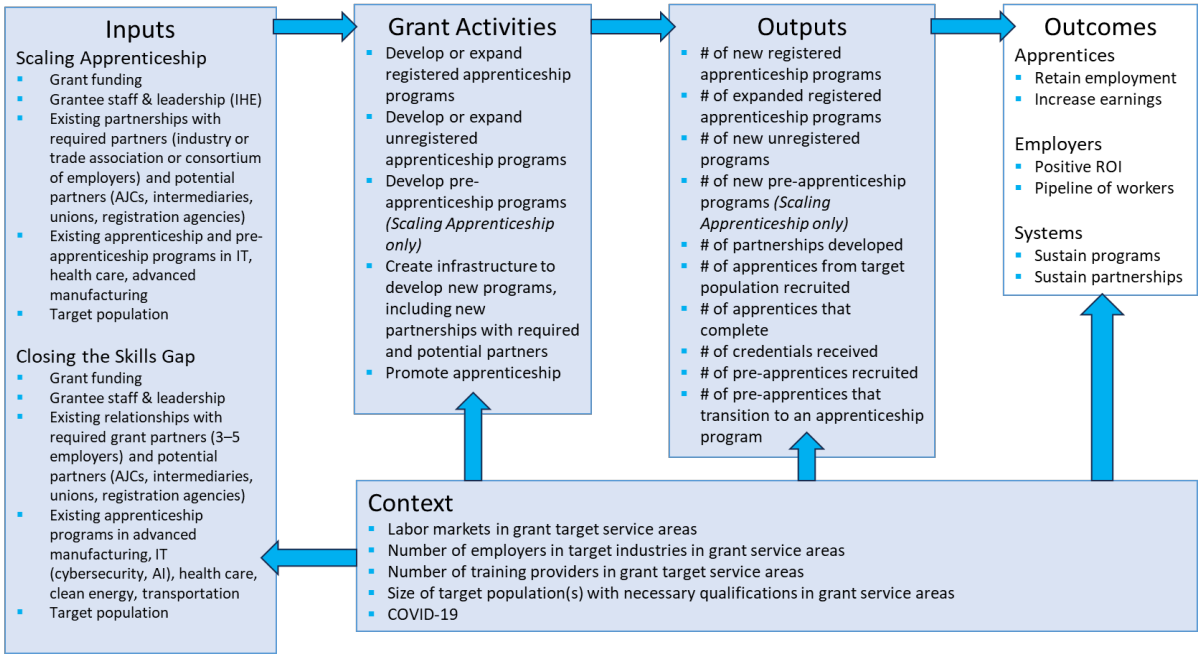
The second column shows program **activities**. For both grant types, activities include developing or expanding apprenticeship programs (registered or unregistered); developing pre-apprenticeship programs (Scaling Apprenticeship only); creating the infrastructure to develop new programs, including new partnerships with required and other partners; promotion of apprenticeship as a training model to employers and potential apprentices; and recruiting employers and apprentices.

Outputs are quantifiable measures of activities and are the focus of the following chapters. Outputs include documenting the number of new registered and unregistered apprenticeship programs created during the grant period; the number of partnerships with entities such as employers, training institutions, supportive service providers, and recruitment partners; and the number of apprentices recruited and hired. Outcomes for apprentices, employers, and systems are not covered in this report.

Underlying inputs, activities, and outputs are **contextual factors** that can affect program design and implementation in grant service areas. Those contextual factors include the local economy (e.g., the unemployment rate, primary industries), the number of employers in target industries, the number of training providers, and the size of target populations with necessary qualifications. Additionally, a key contextual factor in the early years of grant implementation was the COVID-19 pandemic, which affected not only grantee operations but also operations of employers, training providers, and other partners.

FIGURE 2.1

Conceptual Framework for the Scaling Apprenticeship and Closing the Skills Gap Implementation Study



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Source: Developed by the authors.

Note: AI = artificial intelligence; AJC = American Job Center; IHE = institute of higher education; IT = information technology; ROI = return on investment.

Data Sources and Methods

The data sources for the implementation evaluation include DOL administrative data and virtual site visits with selected grantees, supplemented by grant documents and quarterly performance data that grantees submitted to DOL. Of the 51 grantee programs, three Closing the Skills Gap programs ended early and are not represented in the grant documents, quarterly performance data, or site visits. As a result, analysis based on those sources is representative of 48 grantees. However, one of the three Closing the Skills Gap grantees whose program ended early reported data to DOL's administrative database, so analysis using those data is representative of 49 grantees. Each source is described below.

Grant Documents

Shortly after DOL awarded the grants, the evaluation team reviewed the grantees' applications, grant modifications, and Standards of Apprenticeship (when available) to learn more about their programs, target populations, and implementation plans. When necessary, the team conducted clarification calls with grantees. In addition, the evaluation team used data collected from grant documents to identify grantees for virtual site visits. The evaluation team also reviewed the Quarterly Narrative Reports that the grantees submitted to DOL to report on their progress, including the evolution of new partnerships and any barriers to apprenticeship expansion. Grant documents are included for 23 Scaling Apprenticeship and 25 Closing the Skills Gap grantees (48 in total) in this study.

Quarterly Performance Reports (QPRs)

Grantee QPR data describe the characteristics of participants, their in-program activities, and completion rates. The data also describes the number of programs created or expanded and the number of employers engaged. This report reflects QPR data through March 31, 2024. Although the original four-year grant period ended before that date, most grantees received no-cost extensions to continue their work. Among Scaling Apprenticeship grantees, 20 of 23 were still operating under extensions that averaged four months beyond the QPR collection period (the last grants closed in July 2024). Among Closing the Skills Gap grantees, 14 of 25 were still operating under extensions that averaged 10 months beyond the QPR collection period (the last grants closed in February 2025). Thus, the QPR data in this report is not complete for grantees that received extensions. While most of the grant performance information for Scaling Apprenticeship grantees is reflected in this report, Closing the Skills Gap grantees had almost another year to make additional progress toward their goals. In total, only 14 grantees (3 Scaling Apprenticeship and 11 Closing the Skills Gap) had completed grant activities by

March 31, 2024. QPR data are included for 23 Scaling Apprenticeship grantees and 25 Closing the Skills Gap grantees (48 grantees in total) in this study.

Workforce Integrated Performance System (WIPS)[17]

WIPS data include individual-level information about Scaling Apprenticeship and Closing the Skills Gap participants. Data was extracted as of December 31, 2023. The data are reported by the grantees with the fields and definitions created by DOL. Among other variables, the data contain demographic characteristics, employment status at program entry, highest education level completed at program entry, ex-offender status, low-income status, basic skills level, and program entry and exit dates. Some of the grants ended or received extensions beyond this date; however, given the length of the extensions, the number of additional enrollments is expected to be relatively small. Apprentice characteristics, which are recorded at the time of enrollment, are likely to be accurate. The study includes all individuals reported by 23 Scaling Apprenticeship and 26 Closing the Skills Gap grantees (49 in total).

BOX 2.1

Topics Covered in Site Visit Interviews

Grant Staff

- Basic grant Information
- Environmental context
- Grant organizational structure and key partners
- Policy, infrastructure, and data systems
- Target populations and recruitment
- Eligibility, intake, and participation
- Key features of example apprenticeship programs
- Employer engagement and roles
- Sustainability and lessons learned
- Pre-apprenticeship programs (Scaling Apprenticeship grantees only)

Partners

- Overview of partner and their role
- Environmental context
- Grant organizational structure and start-up/implementation of grant activities
- Policy changes, program infrastructure, and data collection/use
- Target population and participant recruitment
- Participant eligibility/intake and participation levels under the grant
- Key features of example apprenticeship programs
- Employer recruitment and engagement, and role (for non-employers)
- Employers' role in grants (for employers)
- Supports for completion and employment success
- Sustainability and lessons learned
- Pre-apprenticeship programs formed/expanded under the grant

[17] WIPS is the performance management system for programs under the Workforce Innovation and Opportunity Act and for other DOL-funded workforce programs. Participant data are entered and updated quarterly.

Virtual Site Visits

The evaluation team used maximum variation sampling[18] to select 18 grantees—nine from each grant program to ensure balanced representation—for site visits. The team conducted site visits with nine Scaling Apprenticeship grantees in fall 2022 and nine Closing the Skills Gap grantees in summer 2023. Team members interviewed administrators and staff from the selected grantee organizations and partners, such as employers, industry and trade associations, community colleges or other related training instruction providers, the public workforce system, and community-based organizations. Topics discussed are included in box 2.1. Interview notes were organized thematically using NVivo, and the team met regularly to discuss and refine the emergent themes. In total, the team conducted 125 interviews. The team selected grantees to reflect variation in grant type (Scaling Apprenticeship grants and Closing the Skills Gap grants); apprenticeship models used (registered apprenticeship, unregistered apprenticeship, and pre-apprenticeship); industry and occupational focus of the grant; program size, based on the size of the grant and the number of apprentices to be served (giving those serving larger numbers of apprentices greater weight); proposed target population(s); geographic area served by the grant; and inclusion in the impact evaluation (giving those grantees included in the impact evaluation greater weight). The team determined that saturation was reached since all major program types were represented within the selected sample of 18 grantees. Although including additional grantees may have yielded further insights into ways that grantees implemented their programs—since no two grantees implemented their programs identically—the number of site visits was constrained by available resources. Nonetheless, all the major program and implementation approaches were captured. Table 2.1 summarizes the characteristics of the 18 site visit grantees. Grantees provided examples of the range of different models implemented under the two grant programs. Thus, the team had program details on at least two different apprenticeship programs per grantee.

[18] While other selection strategies, including stratified random sampling, are available, a purposive (nonrandom) sampling approach aligned best with the study's objective of exploring innovative and best practices. Specifically, maximum variation sampling, a purposive strategy designed to capture a wide range of variation within the study population (Palinkas et al. 2015), was employed to ensure diverse representation among grantees.

TABLE 2.1

Grantees Selected for Site Visits

Grantee (geographic service area)	Apprenticeship program models (% apprentices in registered programs)	Target industries	Target # of participants	Grant size ($)
Scaling Apprenticeship Grantees				
Bergen Community College (NJ)	Registered (100%)	Health care	5,001	12,000,000
Columbus State Community College (OH)	Primarily unregistered (1%)	IT	1,600	3,788,691
Connecticut State Colleges and Universities (National)	Registered and unregistered (30%)	Advanced manufacturing	3,500	8,000,000
Dallas County Community College District (TX)	Primarily registered (98%)	Health care	7,500	12,000,000
Illinois Community College Board (IL)	Registered and unregistered (20%)	IT	1,728	3,999,400
Pennsylvania College of Technology (PA, NJ, NY)	Registered and unregistered (66%)	Advanced manufacturing	2,457	7,996,530
San Jacinto Community College District (TX)	Registered and unregistered (52%)	IT	5,000	12,000,000
University of Cincinnati (OH)	Unregistered (0%)	IT	6,715	11,893,184
West Los Angeles College (National)	Registered and unregistered (44%)	Advanced manufacturing	5,000	12,000,000
Closing the Skills Gap Grantees				
AFL-CIO Working for America Institute (National)	Registered (100%)	Advanced manufacturing	5,000	996,390
Argentum (National)	Registered (100%)	Health care, IT	7,239	5,991,235
Healthcare Career Advancement Program (H-CAP) (National)	Registered and unregistered (95%)	Health care	3,200	3,296,120
Idaho State Board of Education (ID)	Registered and unregistered (29%)	Advanced manufacturing, Health care, IT	2,387	841,679
Ivy Tech Community College of Indiana (IN)	Registered and unregistered (53%)	IT	3,200	3,441,442
Missouri Chamber Foundation (National)	Registered (100%)	IT	5,335	3,695,109
Oakland Community College (MI)	Registered and unregistered (89%)	Advanced manufacturing	3,200	3,094,253
Regents of the University of California–Davis (CA, NV)	Registered (100%)	IT	5,183	4,931,096
Wireless Infrastructure Association (National)	Registered (100%)	IT	5,500	5,882,534

Source: Scaling Apprenticeship and Closing the Skills Gap grant applications.

Note: IT = Information technology.

COVID-19 and the Implementation of Grant Activities

Site visit grantees reported that a key contextual factor in program implementation was COVID-19-related disruptions. The pandemic-related shutdowns occurred just weeks after DOL awarded the Closing the Skills Gap grants in February 2020. During site visit interviews, Closing the Skills Gap grantees described the delays in implementation caused by the closing of colleges and employer sites. Although DOL awarded the Scaling Apprenticeship grants in 2019, Scaling Apprenticeship grantees we interviewed also described COVID-related disruptions to grant activities. While the timing of the grant awards was a factor, conversations with site visit grantees indicated that the target occupation also factored into implementation challenges. Health care employers faced restrictions on activities in health care facilities. IT employers focused on keeping their current workforce employed and found it more feasible to train apprentices virtually. Advanced manufacturing employers' experiences were industry specific, but such employers often found it more difficult to train apprentices virtually.

Grantees operating apprenticeship programs in the health care field reported challenges related to state restrictions on health care facilities and practices. Due to the pandemic, health care facilities in many states faced shutdowns and other restrictions. This slowed or stopped program implementation by limiting employer partner involvement, and for some health care apprenticeships (for example, certified nursing assistant) in-person training was discontinued. In addition, the pandemic overwhelmed the health care industry. One grantee, Argentum, reported difficulty engaging and onboarding health care employer partners because they could not focus on anything aside from responding to the COVID-19 crisis.

Grantees operating IT-related apprenticeship programs were also challenged by the pandemic, reporting that employers were focused on staying afloat during the early months of the crisis, and not on hiring apprentices. The pandemic led many employers to pause apprenticeship activities, thus affecting grant implementation. One grantee reported supply chain issues that affected grantee implementation. The University of California–Davis experienced a delay in "procurement of computer equipment and boards … used in hands-on training in labs." The inability to get needed equipment delayed program implementation—in this case, it "delayed by several years implantation of new training curriculum in the field."

> **"As a result of COVID, employers were laying off workers and not hiring in the areas served by [the grantee]. Employers were just trying to stay afloat and put holds on hiring and bringing on new apprentices. Apprenticeship openings dried up."**
>
> *—Staff at San Jacinto Community College District grantee*

Grantees operating advanced manufacturing apprenticeship programs reported varying experiences. For example, Connecticut State Colleges and Universities recruited defense contractors to implement advanced manufacturing programs and had no disruption to grant activities. At least one grantee, Pennsylvania College of Technology, was less affected because it had offered online options prior to the pandemic. Other grantees, though, reported pandemic-related challenges. The shutdowns, stoppage of in-person services and meetings, layoffs due to the pandemic, and time and energy needed to switch to virtual options led to slower-than-planned implementation. Oakland Community College, for example, said that the pandemic presented challenges in "nearly all areas," including apprentice recruitment, outreach to employers, and RTI delivery. Also, some employers faced financial difficulties during the pandemic that caused them to lay off apprentices or delay the hiring of apprentice cohorts.

> **"The pandemic greatly affected program implementation … partners are still adjusting to the impacts caused by COVID."**
>
> *—Staff at AFL-CIO Working for America Institute grantee*

Study Caveats

We ask the reader to keep in mind the following considerations when reviewing this report:

- Site visit grantees were not randomly selected and thus are not representative of Scaling Apprenticeship and Closing the Skills Gap grantees. Although statistical representativeness of grantees is important for quantitative outcome and impact studies, it is not a key factor in sample selection for qualitative implementation research, which aims to document the range of activities and strategies the grantees implemented. The implementation study uses the rich interviews with grantees to describe what grantees and partners report as promising practices for expanding apprenticeship and to draw suggestions for DOL and other policymakers.

- The team used WIPS data to confirm information gathered from the grant documents, quarterly performance data, and site visits, as well as to provide additional information not captured by those data sources. Differences between subgroups were not formally tested for statistical significance.
- Findings are descriptive and should not be interpreted as ascribing a causal link between grant activities and services—including those that respondents described as promising—and participant outcomes.

Chapter 3: Grantees and Their Projects

In this chapter we describe the 23 Scaling Apprenticeship and 25 Closing the Skills Gap grantees, including organizational type, target populations, and enrollment targets. We also examine grantees' target industries, relative focus on creating new apprenticeship programs versus expanding existing ones, and focus on enrolling apprentices in registered programs versus unregistered ones. Appendix table A.1 provides more detailed information on each grantee, and appendix table A.2 provides additional details for the site visit grantees. See box 3.1 for key takeaways.

BOX 3.1

Chapter 3 Key Takeaways

- Most (17 of 23) Scaling Apprenticeship grantees met greater than 50 percent of their apprentice recruitment target, as did most Closing the Skills Gap grantees (15 of 25).
- IHE grantees expected some drop-off between participation in grant activities and starting an apprenticeship. Collectively, IHE grantees expected 77 percent of their participants to start apprenticeships, versus 99 percent of non-IHE grantees.
- The most common industry focus of grantees in both programs was IT, followed by advanced manufacturing and then health care.
- Grantees in both programs created more new programs than they expanded existing programs.
- Whereas the largest share of Scaling Apprenticeship grantees enrolled participants in both registered and unregistered apprenticeship programs, the Closing the Skills Gap grantees most commonly enrolled apprentices in registered programs only.

Grantee Characteristics

The 23 Scaling Apprenticeship grantees and 25 Closing the Skills Gap grantees[19] represented a variety of organizational types, proposed service areas, target populations, participant and apprentice enrollment targets, and focus industry(ies). We describe each characteristic below.

Organizational Type

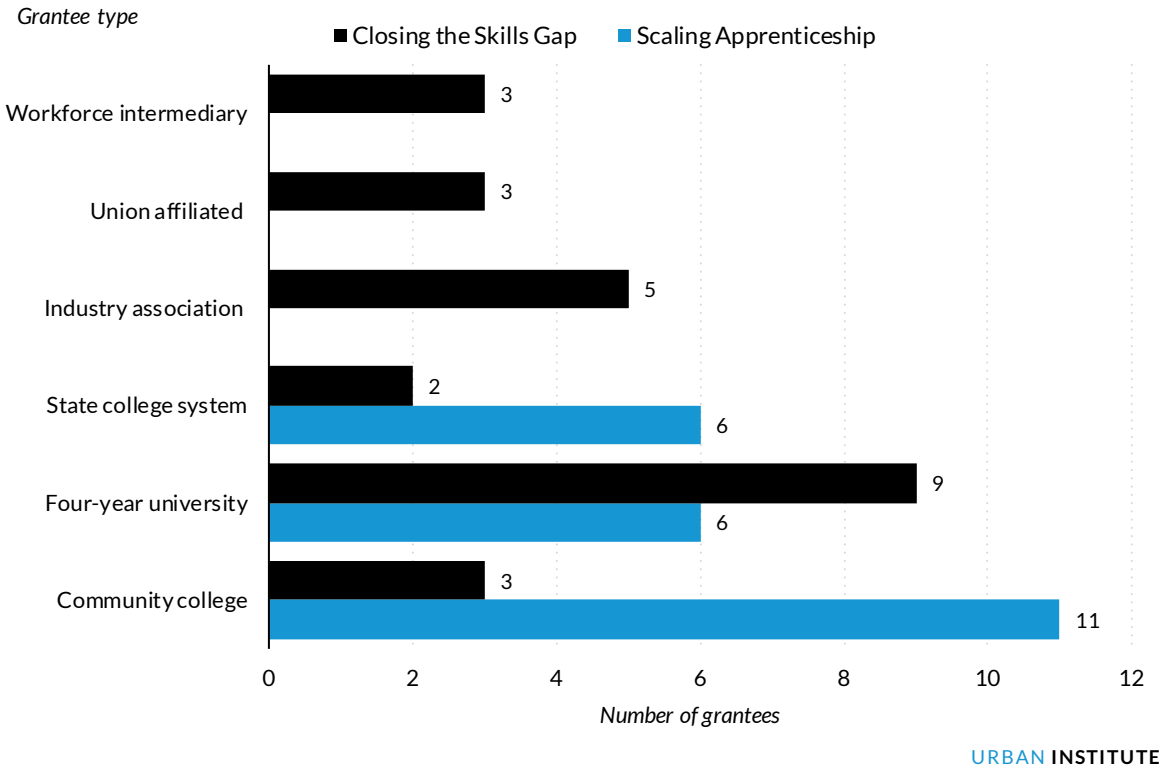
As described in the introduction, all Scaling Apprenticeship grantees were IHEs, while the Closing the Skills Gap grant program was open to IHEs, industry associations, workforce intermediaries, labor unions, and labor-management organizations. Figure 3.1 shows the distribution of grantee types for each grant program. The largest share of grantees in both programs was affiliated with an IHE. All Scaling Apprenticeship grantees were IHEs by design, as were 14 (more than half) of Closing the Skills Gap

[19] Three Closing the Skills Gap grantees ended their programs early and are not included in the analyses presented in this chapter.

grantees. About half of Scaling Apprenticeship grantees were community or technical colleges, with the remainder split evenly between four-year universities and state college systems. Among Closing the Skills Gap grantees that were IHEs, four-year universities made up the largest share (9 grantees), followed by community colleges (3 grantees), and state college systems (2 grantees). The remaining Closing the Skills Gap grantees were industry associations (5 grantees) and union-affiliated organizations and workforce intermediaries (3 grantees each).

FIGURE 3.1

Grantee Organization Type, by Grant Program



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Source: Scaling Apprenticeship and Closing the Skills Gap grant applications and 2022 clarification calls.
Note: Scaling Apprenticeship (n = 23); Closing the Skills Gap (n = 25).

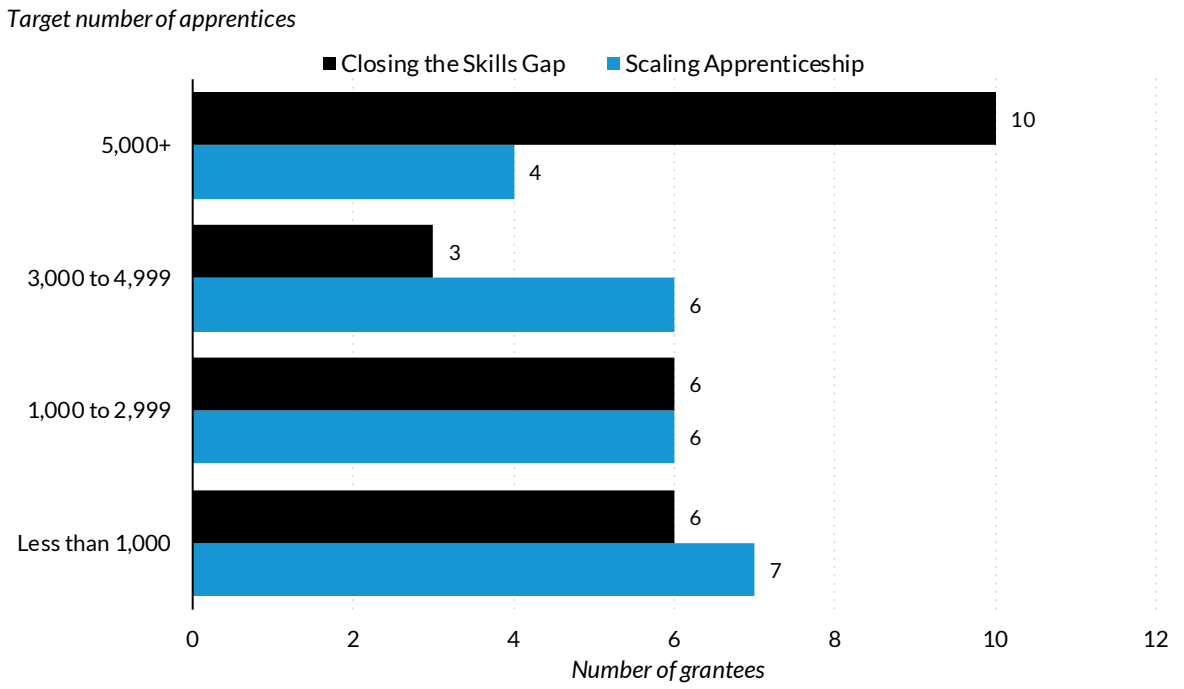
Focus Populations and Enrollment Targets

Based on grantees' applications to DOL, the most cited target populations were unemployed individuals (83 percent, or 19 grantees) and incumbent workers (78 percent, or 18 grantees). The largest share of Closing the Skills Gap grantees focused on recruiting veterans (82 percent, or 23 grantees), followed by incumbent workers (79 percent, or 22 grantees). Grantees proposed in their applications the number of apprentices they would serve. An important output for all grantees is the number of participants who

started an apprenticeship—that is, were hired by an employer. Each grantee at the beginning of their program set a target number of people they would serve and reported quarterly on progress toward those targets. Scaling Apprenticeship grantees were required to set goals for the number of "apprentices enrolled," while Closing the Skills Gap grantees were required instead to set goals for the number of "participants employed," although the requirements for both groups were the same. These participants were considered apprentices by DOL, so for the purposes of comparing outcomes across grant programs, we treated participants employed as equivalent to apprentices. Figure 3.2 shows the numbers of apprentices targeted by program. The largest share of Closing the Skills Gap grantees targeted 5,000 or more apprentices (10 grantees), whereas the largest share of Scaling Apprenticeship grantees targeted fewer than 1,000 apprentices (7 grantees).

FIGURE 3.2

Target Number of Apprentices by Grant Program



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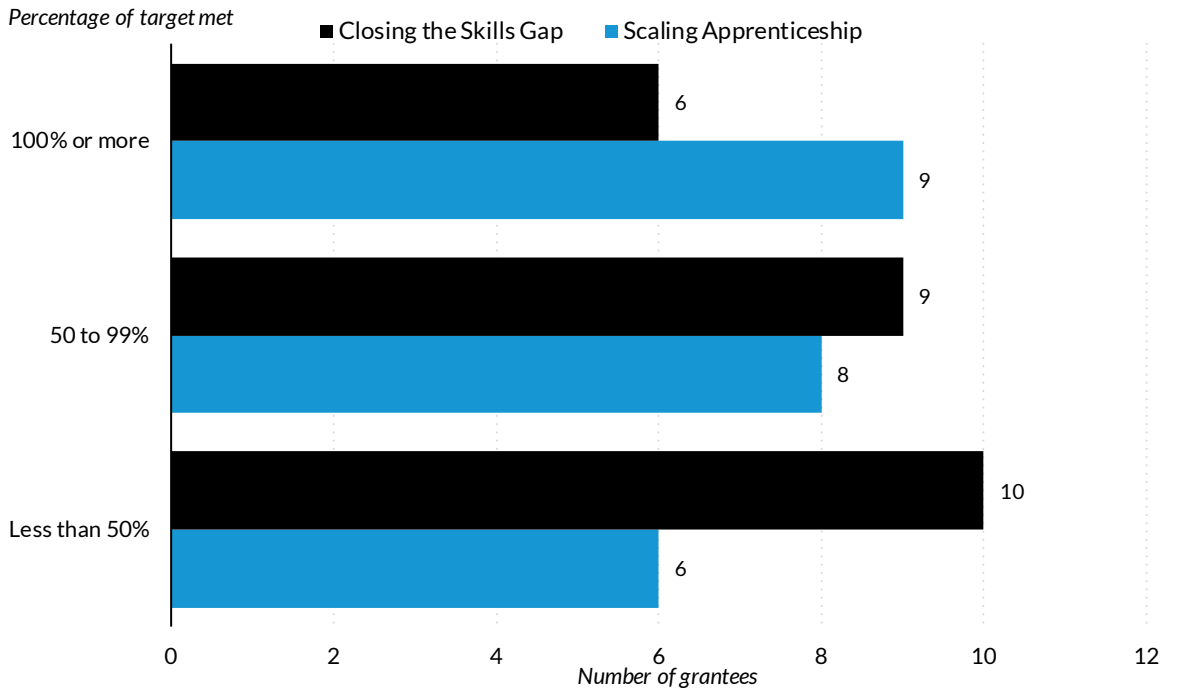
Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).

Note: Scaling Apprenticeship (n = 23); Closing the Skills Gap (n = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus, the March 31, 2024, QPRs reflect most of their grant periods.

A larger share of Scaling Apprenticeship grantees met their apprentice target than did Closing the Skills Gap grantees (figure 3.3). The data show progress as of the March 31, 2024, QPR. Nine Scaling Apprenticeship grantees met or exceeded their target compared with six Closing the Skills Gap grantees. However, 12 of the 25 Closing the Skills Gap grantees had periods of performance ending in February 2025, and thus had almost another year to make additional progress toward their goals.[20] The last Scaling Apprenticeship grants closed in July 2024; thus the March 31, 2024 QPR reflects most of their grant periods.

FIGURE 3.3

Percentage of Apprentice Target Met by Grant Program, Cumulative to March 31, 2024



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Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).

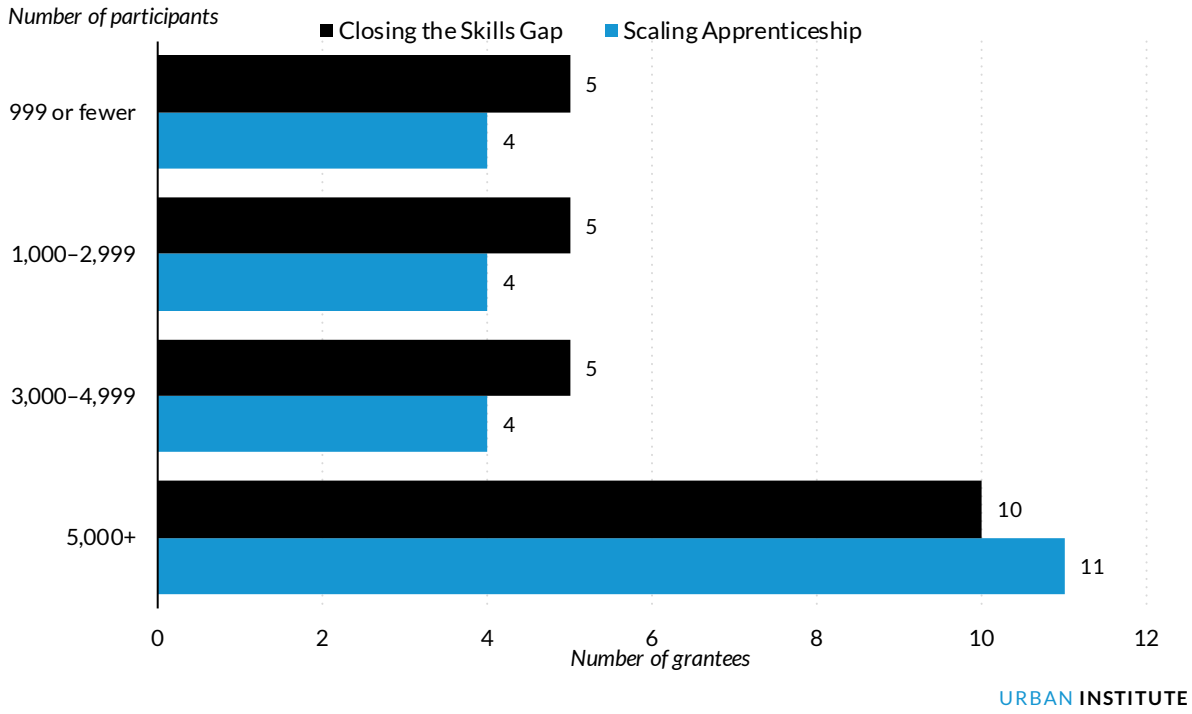
Note: Scaling Apprenticeship (*n* = 23); Closing the Skills Gap (*n* = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024, and thus the March 31, 2024, QPRs reflect most of their grant periods.

[20] Nine of the 12 grantees had not met their targets by March 31, 2024.

Grantees also proposed a target number of *participants* they would serve. Both grant programs defined participation as receiving a grant-funded service, which includes enrollment in an apprenticeship program, enrollment in a pre-apprenticeship program (only Scaling Apprenticeship grantees could use grant funds to support pre-apprenticeships), assessments related to training, or other services. Therefore, while all apprentices are participants, some participants served with grant funds did not become apprentices. Figure 3.4 shows that for both grant programs, the largest share of grantees proposed to serve 5,000 or more participants. Ranges in proposed participants served were similar across both grant programs—from a low of 800 to a high of more than 7,000 (not shown).

FIGURE 3.4

Grantees' Target Number of Participants, by Grant Type



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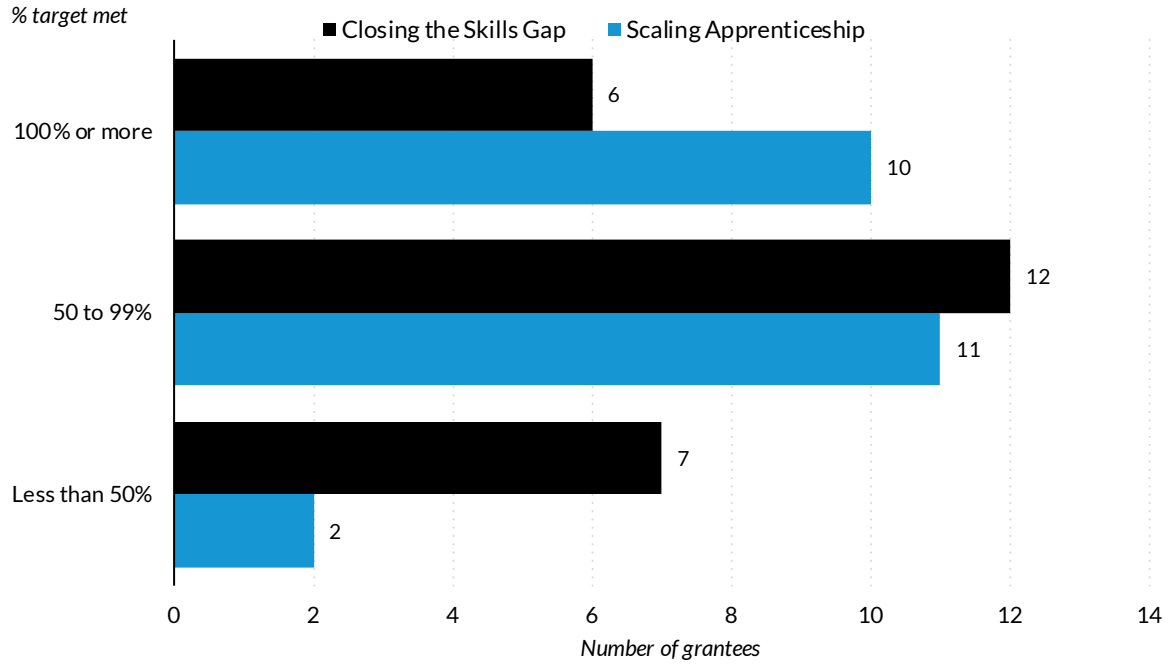
Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).

Note: Scaling Apprenticeship (n = 23); Closing the Skills Gap (n = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024, and thus the March 31, 2024, QPRs reflect most of their grant periods. *Participants served* is defined as the total number of participants receiving grant-funded services after they are determined eligible. These services include apprenticeship and pre-apprenticeship (for Scaling Apprenticeship grantees) training as well as assessments for training or other services provided by grantees. Participants become apprentices when they are hired by employers. Thus, not all participants are apprentices.

A larger share of Scaling Apprenticeship grantees met their participation target than did Closing the Skills Gap grantees as of March 31, 2024 (figure 3.5). Ten Scaling Apprenticeship grantees (43 percent) met or exceeded their target compared with six Closing the Skills Gap grantees (24 percent). At the other end of the spectrum, seven Closing the Skills Gap grantees (28 percent) met 50 percent or less of their target compared with two Scaling Apprenticeship grantees (9 percent). (As with apprentice targets met, nearly half of Closing the Skills Gap grantees had close to one year remaining in their grant activities.)

FIGURE 3.5

Percentage of Participant Target Met by Grant Program, Cumulative to March 31, 2024



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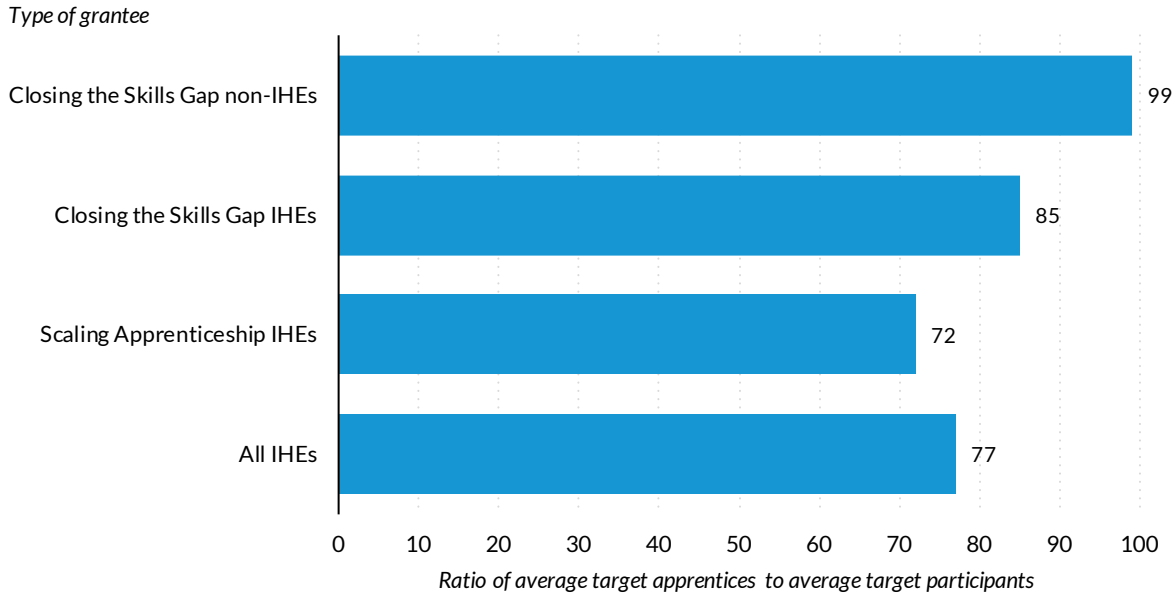
Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).
Note: Scaling Apprenticeship (*n* = 23); Closing the Skills Gap (*n* = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024, and thus the March 31, 2024QPRs reflect most of their grant periods. *Participants served* is defined as the total number of participants receiving grant-funded services after they are determined eligible. These services include apprenticeship and pre-apprenticeship (for Scaling Apprenticeship grantees) training as well as assessments for training or other services provided by grantees. Participants become apprentices when they are hired by employers. Thus, not all participants are apprentices.

IHE grantees across both grant programs had an apprentice-to-participant target ratio of 77 percent (figure 3.6). That is, on average, grantees expected that about three-quarters of participants

would enter an apprenticeship program. Looking at IHE grantees by grant program, Scaling Apprenticeship grantees had a lower planned apprentice-to-participant ratio than Closing the Skills Gap grantees (72 percent versus 85 percent). In contrast, non-IHE Closing the Skills Gap grantees (e.g., workforce intermediaries, industry associations, unions) had nearly a one-to-one target ratio for apprentices and participants.

FIGURE 3.6

Ratio of Average Target Apprentices to Average Target Participants, by Type of Grantee



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Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).

Notes: IHE = Institution of Higher Education. Scaling Apprenticeship (n = 23); Closing the Skills Gap (n = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024, and thus the March 31, 2024, QPRs reflect most of their grant periods. *Participants served* is defined as the total number of participants receiving grant-funded services after they are determined eligible. These services include apprenticeship and pre-apprenticeship (for Scaling Apprenticeship grantees) training as well as assessments for training or other services provided by grantees. Participants become apprentices when they are hired by employers. Thus, not all participants are apprentices.

Grantee Program Characteristics

This section describes grantees' target industry(ies), their focus on new versus expanded programs, and their focus on registered versus unregistered programs. The small sample size of these subgroups of Scaling Apprenticeship and Closing the Skills Gap grantees precludes analyzing cross tabulations of reported characteristics (e.g., the percentage of new IT programs registered). Chapter 5 provides more detail about programs associated with the 18 site visit grantees.

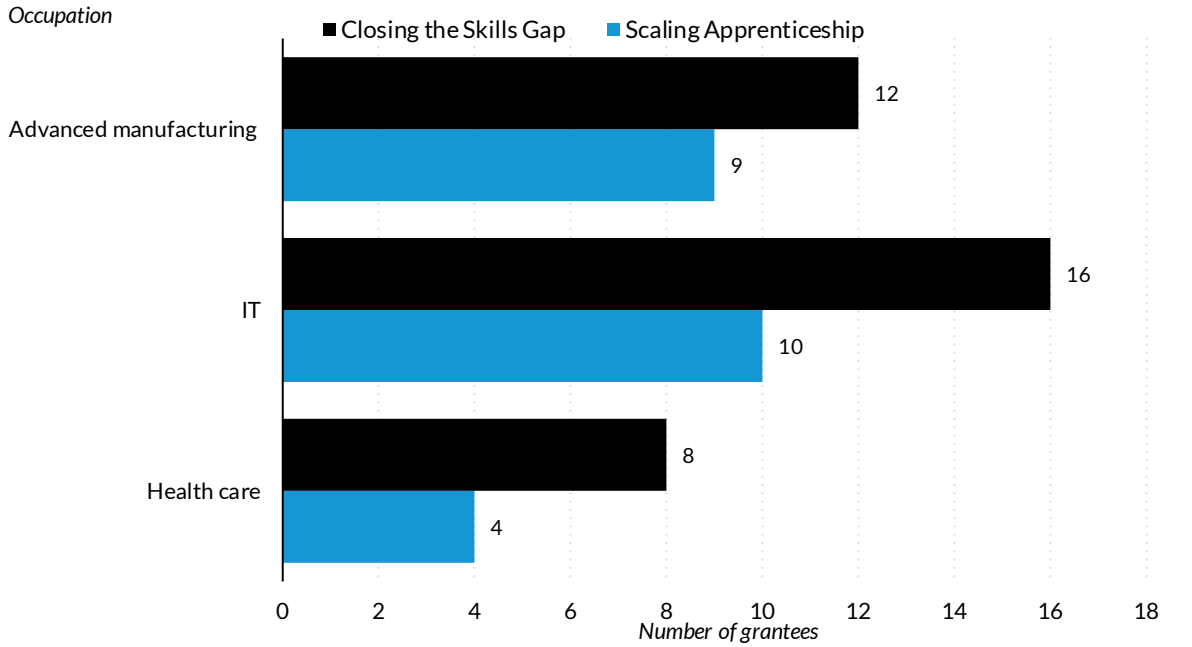
Industry and Occupation Focus

As described in chapter 1, Scaling Apprenticeship and Closing the Skills Gap grantees could focus on a range of industries and occupations, including advanced manufacturing, health care, and IT. Grantee programs also focused training on a range of specific occupations. For example, occupations in IT included computer programmer, cybersecurity, data analytics, data science, database administrator, infrastructure automation, IT help desk/basic computer skills, and mainframe system administrator.

Figure 3.7 shows the grantees' planned focus areas, as articulated in their applications. All Scaling Apprenticeship grantees selected one target industry, as did 17 Closing the Skills Gap grantees. Nine Closing the Skills Gap grantees targeted multiple industries. IT was the most common industry focus of grantees in both programs, followed by advanced manufacturing, then health care.

FIGURE 3.7

Industry Focus of Grantees



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Source: Scaling Apprenticeship and Closing the Skills Gap grant applications and 2022 clarification calls to grantees.
Note: Scaling Apprenticeship (n = 23); Closing the Skills Gap (n = 24); one Closing the Skills Gap grantee identified "electrical" and is not included since it cuts across multiple industries. Nine Closing the Skills Gap grantees identified more than one target industry.

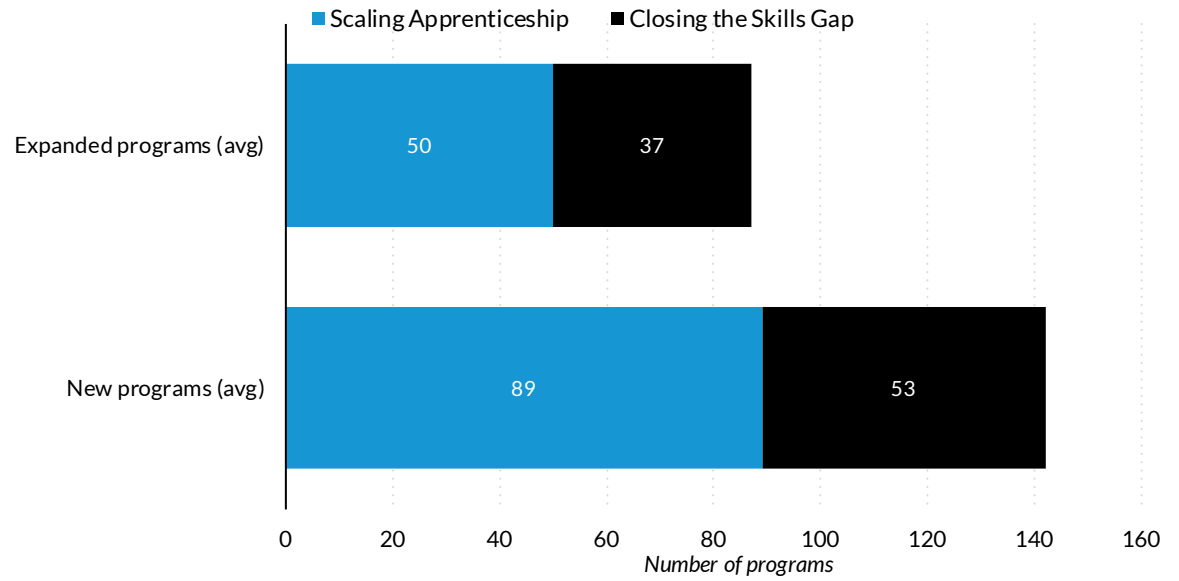
New or Expanded Programs

Grantees created more new apprenticeship programs than they expanded existing ones. Scaling Apprenticeship grantees, on average, created 89 new programs, and Closing the Skills Gap grantees created an average of 53 new programs (figure 3.8). Scaling Apprenticeship and Closing the Skills Gap grantees expanded an average of 50 and 37 programs, respectively.

These averages mask large variations among grantees in the two grant programs. Among Scaling Apprenticeship grantees, the number of new programs created ranged from 1 (a health care program) to 861 (IT programs). The number of Closing the Skills Gap grantee new programs created ranged from zero (one IT grantee only expanded programs) to 262 (an advanced manufacturing program).

FIGURE 3.8

Grantees' Numbers of New and Expanded Programs



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Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).
Note: Scaling Apprenticeship (*n* = 23); Closing the Skills Gap (*n* = 25). Twenty Scaling Apprenticeship (SA) and 14 Closing the Skills Gap (CSG) grantees continued grant activities beyond March 31, 2024, and 12 CSG grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last SA grants closed in July 2024, and thus the March 31, 2024 QPRs reflect most of their grant periods.

Registered and Unregistered Apprenticeship Programs

Scaling Apprenticeship and Closing the Skills Gap grantees could implement registered apprenticeship programs, unregistered apprenticeship programs, or a combination of both. As described earlier, registered and unregistered apprenticeships differ in key aspects. Registered apprenticeships must be approved by a registration agency (either OA or an SAA). Such programs must adhere to guidelines on the length of RTI and OJT. A sponsor is responsible for the program and maintains the Standards of Apprenticeship, which documents the RTI, OJT, the wage structure, and other aspects of the program. Unregistered apprenticeship programs are not reviewed and approved by OA or an SAA. They can be shorter in duration than registered apprenticeships because they do not have to meet the same requirements for the number of RTI and OJT hours (Jacoby and Lerman 2019). DOL has rarely funded, and never studied, unregistered apprenticeship programs.

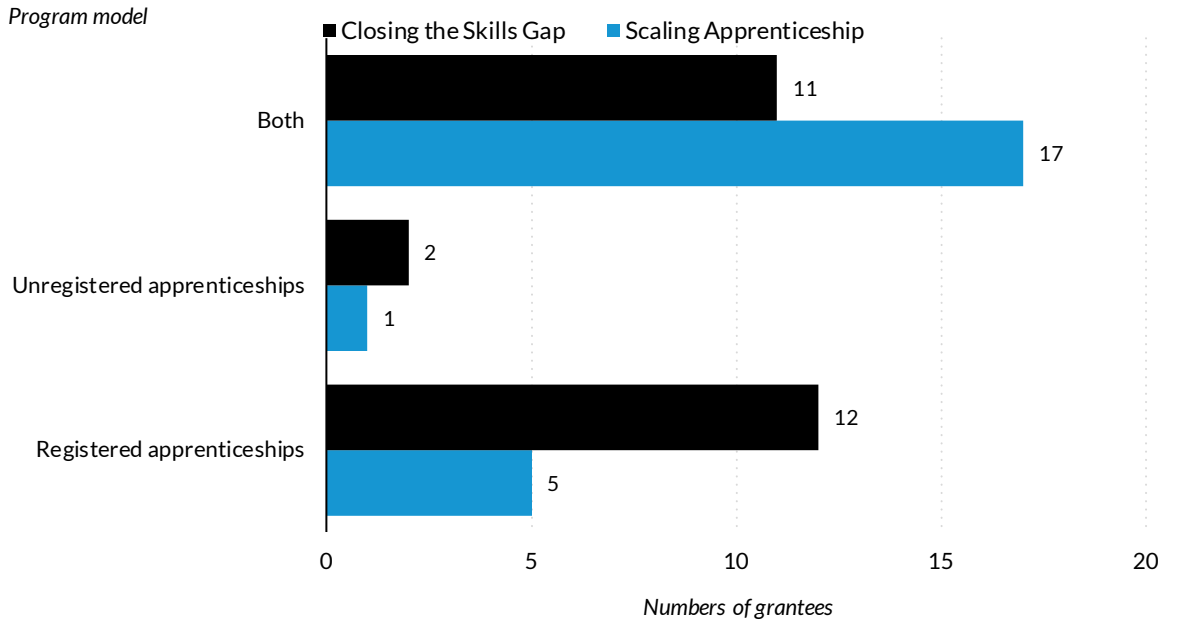
Altogether, 31 grantees offered unregistered apprenticeship programs while 45 grantees offered registered apprenticeships. Figure 3.9 shows the number of grantees in each program that enrolled

participants in registered apprenticeships, unregistered apprenticeships, or both types (see appendix table A.1 for more details). The largest share of Scaling Apprenticeship grantees (74 percent, or 17 grantees) enrolled participants in registered and unregistered apprenticeship programs. Another five (22 percent) enrolled participants in registered apprenticeships only. Only one focused exclusively on enrolling participants in unregistered programs.

The largest share of Closing the Skills Gap grantees (48 percent, or 12 grantees) enrolled participants in registered apprenticeships only, followed closely by grantees that enrolled participants in both types of apprenticeship (44 percent, or 11 grantees). Two grantees enrolled participants in unregistered apprenticeships only (8 percent).

FIGURE 3.9

Apprentice Enrollment by Program Model



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Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).
Note: Scaling Apprenticeship (n = 23) and Closing the Skills Gap (n = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus, the March 31, 2024, QPRs reflect most of their grant periods.

Chapter 4: Participant Characteristics

In this chapter we use WIPS data[21] through December 31, 2023, to report apprentice characteristics. We compare those characteristics to characteristics of all registered apprentices nationally, using data from the Registered Apprenticeship Partners Information Database System (RAPIDS). There is no comparable national source of unregistered apprentice data. We then use the same data to describe the characteristics of participants who did and did not start apprenticeships.[22] See box 4.1 for key takeaways.

BOX 4.1

Chapter 4 Key Takeaways

- Scaling Apprentices and Closing the Skills Gap grantees enrolled higher percentages of women and Black apprentices than is reflected among registered apprentices nationally according to RAPIDS data.
- Registered and unregistered apprentices had similar characteristics, except for education; a higher percentage of unregistered apprentices had not finished high school.
- About 12 percent of participants (those receiving a grant-funded service) who did not start an apprenticeship received some training.

Apprentice Characteristics

The Scaling Apprenticeship and Closing the Skills Gap grant programs collectively enrolled 73,216 apprentices through December 31, 2023. As noted in some tables, missing data rates are high for some apprentice characteristics (such as race and ethnicity), but patterns are nonetheless important to describe.

Table 4.1 shows the characteristics of registered and unregistered apprentices enrolled by grantees, and of all registered apprentices nationally. Although most apprentices in both programs (56 percent) and in registered programs nationally (84 percent) are men, the proportion of women apprentices in grant-supported apprenticeships (37 percent) is more than twice the national average (14 percent). The percentages of non-Hispanic Black and Asian apprentices were more similar to national averages. The proportion identifying as Hispanic (12 percent) was lower than the national average (23 percent). These sex and race/ethnicity statistics likely reflect the grants' focus on nontraditional industries and occupations and their lesser focus on traditional apprenticeships in construction occupations; white and Hispanic men are overrepresented relative to the labor force in

[21] The WIPS data extract excludes enrollees after December 31, 2023. Given the lengths of no-cost extensions, the authors expect little enrollment after that date, although additional services receipt and completions are expected.
[22] Only differences that have a *t*-test with a significance level of 5 percent are discussed. The tables do not show the standard errors or tests of statistical significance for clarity of presentation.

construction apprenticeships (Kuehn et al. 2024). Both grants required participants to be 17 years of age or older. Most grant-supported registered and unregistered apprentices (53 percent) were under age 30. Within this demographic, the largest share (34 percent) was youth apprentices, defined as apprentices ages 17 to 24. The public RAPIDS data show that 41 percent of apprentices nationally were 17 to 24 years of age at the start of their apprenticeship, but they do not provide a detailed breakdown by age for apprentices between 25 and 54 at registration.

TABLE 4.1

Demographics of Apprentices in Grantee Programs and Nationally

Characteristic	Grant-supported (all apprentices)	Grant-supported (registered)	Grant-supported (unregistered)	All registered apprentices nationally
Sex (%)				
Men	56	53	61	84
Women	37	44	27	14
No answer	7	3	13	1
Race/Ethnicity (%)				
White, non-Hispanic	47	47	46	52
Black, non-Hispanic	15	18	11	12
Hispanic	12	14	9	23
Asian	5	6	5	4
Multiracial/other	2	2	2	3
No answer	19	13	27	7
Age at Beginning of Apprenticeship (%)				
17–24	34	32	37	n/a
25–29	19	20	16	n/a
30–39	24	25	21	n/a
40–49	13	13	14	n/a
50–59	7	7	78	n/a
60+	2	2	2	n/a
No answer	1	1	1	n/a
Number of Observations	73,216	45,534	23,196	636,836

Source: WIPS data through December 31, 2023 (program apprentices); RAPIDS data (all registered apprentices nationally), fiscal year 2023, downloaded from https://www.apprenticeship.gov/data-and-statistics/apprentices-by-state-dashboard on October 28, 2024.

Note: The race/ethnicity labels are the ones WIPS uses for race/ethnicity data. An additional 1,126 apprentices had some quarters in each of both unregistered and registered programs in the WIPS data. They are included in the "All Apprentices" column but are omitted from the other columns. Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond December 31, 2023, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, more than a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus,

the December 31, 2023, WIPS data reflect most of their grant periods. Percentages may not sum to 100% due to rounding. Age data in RAPIDS are reported as "n/a" because the public use RAPIDS file only reports broad age categories.

TABLE 4.2

Characteristics of Apprentices in Grantee Programs and Nationally

Characteristic	Grant-supported (all apprentices)	Grant-supported (registered)	Grant-supported (unregistered)	All registered apprentices nationally
Highest Degree Completed (%)				
No high school completion	9	4	16	3
High school graduate or equivalency	43	47	37	65
Some postsecondary	25	24	27	15
Bachelor's or more	21	24	19	5
No answer	1	1	1	12
Veteran Status (%)				
Veteran	5	5	6	5
Not a veteran	91	92	90	69
No answer	3	3	4	26
Disability Status (%)				
Disabled	2	2	2	1
Not disabled	53	59	45	49
No answer	45	39	53	50
Low Income (%)				
Yes	4	2	7	n/a
No	91	91	91	n/a
No answer	5	7	2	n/a
English Language Learner (%)				
Yes	3	3	4	n/a
No	93	91	95	n/a
No answer	4	6	1	n/a
Ex-Offender Status (%)				
Ex-offender	1	0	2	n/a
No ex-offender	41	40	43	n/a
No answer	58	60	55	n/a
Number of Observations	73,216	45,534	23,196	636,836

Source: WIPS data through December 31, 2023 (program apprentices); RAPIDS data (all registered apprentices nationally), fiscal year 23, downloaded from https://www.apprenticeship.gov/data-and-statistics/apprentices-by-state-dashboard on October 28, 2024.

Note: The race/ethnicity labels are the ones WIPS uses for race/ethnicity data. An additional 1,126 apprentices had some quarters in each of both unregistered and registered programs in the WIPS data. They are included in the "All Apprentices" column but are omitted from the other columns. Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond December 31, 2023, and 12 Closing the Skills Gap grantees had periods of performance ending in

February 2025, more than a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus, the December 31, 2023, WIPS data reflect most of their grant periods. Percentages may not sum to 100% due to rounding. "n/a" indicates data is not available in RAPIDS.

Table 4.2 shows the highest level of education attained and other characteristics of apprentices enrolled by grantees and of all registered apprentices nationally. More grant-supported apprentices (both registered and unregistered) than registered apprentices nationally had some postsecondary education (25 percent versus 15 percent) or a bachelor's degree or higher (21 percent versus 5 percent). This likely reflects the large number of grantees that are IHEs.

Similar proportions of grant-supported apprentices and all registered apprentices nationally were veterans (5 percent), although over a quarter of national registered apprentices did not respond to the question. Two percent of grant-supported apprentices reported having a disability, compared with 1 percent of registered apprentices nationally (although disability status was not reported for 44.7 percent of grant-supported apprentices and half of registered apprentices nationally). Less than 4 percent of grant-supported apprentices had low income[23] (the data are not available for all registered apprentices nationally). Smaller shares of grant-supported apprentices were English language learners (3 percent) and ex-offenders (1 percent). There was a large amount of unreported data ("No answer") for ex-offender status. These data are not available for all registered apprentices nationally.

Registered Versus Unregistered Program Apprentice Characteristics

Grant-supported registered and unregistered apprentices had similar characteristics, with some exceptions. Although most apprentices in registered and unregistered programs were men (56 percent), men accounted for a larger share of apprentices in unregistered programs (61 percent) than registered ones (53 percent) (table 4.1). Although similar proportions of apprentices reporting race and ethnicity in both grant programs were white (47 percent of unregistered apprentices and 46 of registered ones), fewer unregistered apprentices than registered ones were Black (11 percent versus 18 percent) or Hispanic (9 percent versus 14 percent). More than a quarter of unregistered apprentices (27 percent) did not report race and ethnicity, more than double the percentage of registered apprentices (13 percent). Among apprentices in both types of programs, the age distribution was similar, except for

[23] *Low income* is defined using the Workforce Innovation and Opportunity Act definition in the Participant Individual Record Layout, which identifies a participant as low income if they have recently received one of a variety of federal income support programs or had total family income that does not exceed the federal poverty line. See "ETA-9170 WIOA Participant Individual Record Layout (PIRL)," US Department of Labor, accessed June 26, 2025, https://www.dol.gov/sites/dolgov/files/ETA/Performance/pdfs/ICR/ETA_9170.

youth apprentices, who made up a larger share of unregistered apprentices (37 percent) than registered ones (32 percent).

More unregistered than registered apprentices did not have a high school diploma or the equivalent. A larger share of registered apprentices had a bachelor's degree than unregistered apprentices (table 4.2). A larger share of unregistered than registered apprentices had low incomes and were ex-offenders, although those proportions were small in each group. Few apprentices in either type of apprenticeship were English language learners or reported having a disability.

Apprenticeship Activities

Data from WIPS document the number of apprentices completing any training and the number completing an apprenticeship. The percentage completing any training is higher for unregistered apprentices (59 percent) than registered (35 percent). The apprenticeship completion measure in WIPS is labeled "completed all trainings started." This is defined as "the total number of participants who enter a Registered Apprenticeship Program (RAP) or unregistered apprenticeship and complete both the on-the-job training and instructional training components of their apprenticeship program."[24] As of December 31, 2023, about a third of registered and half of unregistered apprentices had completed all training started (table 4.3). Additional apprentices may go on to complete training at a later date since 12 of the 25 Closing the Skills Gap grantees had periods of performance ending in February 2025—giving apprentices almost another year to make additional progress toward their goals. The last Scaling Apprenticeship grants closed in July 2024; thus, the December 31, 2023, WIPS data reflect most of their grant periods.

[24] From the *H-1B Grants Performance Reporting Handbook & Workforce Integrated Performance System (WIPS) Reporting Guidance* (H-1B Performance Handbook, US Department of Labor, https://d2leuf3vilid4d.cloudfront.net/-/media/B07FD54AAE194882A458DFB970B46C2F.ashx?rev=67F2BA43A6FD22E118526479C4759739.

TABLE 4.3

Completion of Training in Grantee Programs

Characteristic	Grant-supported (all apprentices, %)	Grant-supported (registered, %)	Grant-supported (unregistered, %)
Completed Any Training			
Yes	44	35	59
No	56	64	42
Missing	0	0	0
Completed All Training Started			
Yes	40	34	50
No	59	66	49
Missing	0	0	0
Number of Observations	73,216	45,534	23,196

Source: WIPS data through December 31, 2023.

Note: An additional 1,126 apprentices had some quarters in each of both unregistered and registered programs in the WIPS data. They are included in the "All Apprentices" column but are omitted from the other columns. Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond December 31, 2023, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, more than a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus, the December 31, 2023, WIPS data reflect most of their grant periods. Percentages may not sum to 100% due to rounding.

Participants Who Did Not Become Apprentices

The Scaling Apprenticeship and Closing the Skills Gap grant programs collectively enrolled 109,323 participants through December 31, 2023. To be counted as a participant, an individual had to receive at least one grant-supported service. Not all participants started apprenticeships. On average, two-thirds of participants (67 percent) started apprenticeships. Examining the data by grant type, 18 of 23 Scaling Apprenticeship grantees had apprentice-to-participant ratios of less than 80 percent, compared with 6 of 23 Closing the Skill Gap grantees.[25] Ruggiero and Payne (forthcoming) conducted a study of non-apprentice participants in these two grant programs (containing a detailed analysis of WIPS data and interviews with grantees) that examined the characteristics of non-apprentices and apprentices and the services received, the grant program structure and process through which grant participants flowed through the apprenticeship grant programs, and the reasons why not all grant participants became apprentices. Key takeaways from that study are summarized below in the remainder of the chapter.

Some grantees focused immediately on hiring participants into apprenticeships or, for those working with incumbent workers, on starting an apprenticeship. Those grantees had apprentice-to

[25] Two additional Closing the Skills Gap grantees had ratios that were less than 10 percent, but since that may reflect lack of reporting or other problems, they are not included in this count.

participant ratios close to 100 percent (meaning almost all participants started an apprenticeship). Other grantees had lower ratios. As noted in chapter 3, some grantees expected apprenticeship-to-participant target ratios of less than 100 percent. Such grantees did not plan to hire participants into apprenticeships quickly, but instead planned to use grant funds to support participants before they started an apprenticeship. This includes many IHEs, including those with grant-supported pre-apprenticeship programs (7 percent of participants). Chapter 6 discusses strategies for training and service provision before starting an apprenticeship.

Site visit respondents suggested reasons some participants did not start apprenticeships, including

- apprenticeship was not a good option for them after participating in grant-funded services;
- they tried but failed to be hired by an employer for an apprenticeship, due to an assessment or poor match with the employer; and
- they were pre-apprentices who did not transition to an apprenticeship.[26,27]

Participants who were non-Hispanic Black or had low incomes became apprentices at lower rates than other participants. Additionally, grant projects focused on IT programs had higher percentages of non-apprentice participants than those focusing on either advanced manufacturing or health care.

Participants, whether they became apprentices, received services funded by the grants (table 4.4). Similar shares of apprentices and non-apprentices (i.e., those that were not hired into an apprenticeship) received case management (65 percent and 67 percent, respectively). Receipt of supportive services (e.g., child care, transportation) was uncommon for both groups, although about twice as many apprentices as non-apprentices received them (13 percent and 7 percent, respectively).

[26] Corresponding WIPS data show that participants enrolled in pre-apprenticeship programs became apprentices at lower rates (26 percent) versus those not enrolled in pre-apprenticeship (70 percent). This includes pre-apprentices who dropped out as well as those still enrolled as of December 31, 2023.
[27] An evaluation of the American Apprenticeship Initiative found that 63 percent of pre-apprentice completers transitioned to a registered apprenticeship program. See Walton and colleagues (2022).

TABLE 4.4

Services Received for All Participants, Apprentices, and Non-Apprentices

Characteristic	All participants	All apprentices	Non-apprentices
Received Case Management (%)			
Yes	66	65	67
No	34	35	32
Received Support Services (%)			
Yes	11	13	7
No	89	87	92
Received Training (%)			
Yes	70	98	12
No	30	2	88
Number of Observations	109,323	73,216	36,107

Source: Ruggiero and Payne (forthcoming).

Note: Percentages may not sum to 100% due to rounding.

Finally, almost all apprentices (98 percent) received training, compared with 12 percent of non-apprentices. As described in future chapters, pre-apprentices and other individuals who received training but did not start an apprenticeship are included in the 12 percent figure. This training could have been general skills or occupational skills training.[28]

[28] The trainings included in the WIPS data are OJT, skills upgrading, entrepreneurial training, Adult Basic Education (ABE) or English as a Second Language (ESL) in conjunction with training, customized training, occupational skills training, ABE or ESL not in conjunction with training, prerequisite training, youth occupational skills training, other non-occupational-skills training, and job-readiness training in conjunction with other training, as well as registered apprenticeship training.

Chapter 5: Apprenticeship Program Characteristics

The Scaling Apprenticeship and Closing the Skills Gap grantees served apprentices through several different apprenticeship programs. This chapter describes the characteristics of 62 apprenticeship programs based on site visits with 18 grantees. Those characteristics include whether grantees created new programs or expanded existing ones, whether they registered new programs, program sectors and occupations selected, and program design elements (e.g., length).

BOX 5.1

Chapter 5 Key Takeaways

- Scaling Apprentices and Closing the Skills Gap grantees described 62 apprenticeship programs in detail during site visits, including 45 registered and 17 unregistered programs.
- The majority (73 percent) of health care apprenticeship programs were new programs, while 25 percent of construction and extraction programs were new programs.
- Eighty-nine percent of the apprenticeship programs relied on a competency-based or hybrid approach to measuring skills attainment.
- Registered apprenticeship programs had a longer average duration (3,489 hours) than unregistered programs (2,908 hours), but this difference was not statistically significant.
- Colleges provided related technical instruction for 71 percent of the apprenticeship programs.

The data source is interviews with grantee staff and partners during site visits. Grantees identified employers and apprenticeship program sponsors who either typified the grantee's approach to apprenticeship expansion or who implemented new or innovative strategies. Seventeen of the 18 grantees participating in site visits provided sufficiently detailed quantitative information on at least one grant-supported apprenticeship program to be included in this analysis. The number of apprenticeship programs per grantee included in the analysis ranged from one program supported by the University of California–Davis to eight programs supported by San Jacinto Community College. Although these data are not representative of all apprenticeship programs supported by the grantees and represent only a fraction of all grant-supported programs, they provide important examples of the

range of activities and components implemented, as well as promising practices reported by grantees and partners for potential replication. See box 5.1 for key takeaways.

Developing New and Expanding Existing Programs

As described in chapter 3, Closing the Skills Gap and Scaling Apprenticeship grantees increased the number of apprenticeships by creating new programs and expanding existing ones; each path comes with benefits and challenges. Grantees that create new apprenticeship programs start with a "blank slate" to design programs, but they need to recruit employers to sponsor or partner with the new program and develop the Standards of Apprenticeship if the program is to be registered. Expanding existing apprenticeship programs does not involve program design or registration paperwork but still requires grantees to recruit sponsors and to address their needs. Employer engagement and recruitment efforts are described in more detail in chapter 7.

> **"It's national, so it's not like a program that we've in any way initiated. It's a very old existing apprenticeship with [the International Brotherhood of Electrical Workers]; we've generated curriculum that they've appended to their existing apprenticeship."**
>
> *—Staff at University of California–Davis grantee*

As of March 31, 2024, grantees from both grant programs had collectively created 3,318 new apprenticeship programs (62 percent of the total number of apprenticeship programs supported by the grants) and expanded 2,033 existing apprenticeship programs (38 percent of the total).[29] In contrast, site visit grantees reported a smaller share of new programs (42 percent, or 26 programs) than expanded programs (58 percent, or 36 programs).

According to the interviews, one reason employers started new apprenticeship programs was to meet skilled workforce needs that came with the expansion of economic activity during the recovery from the COVID-19 pandemic. As an example, a manufacturer partnering with Oakland Community College described how its factory was recently automated and needed a substantial number of new automation technicians. The employer shared that a new apprenticeship program was the best opportunity to ensure that "when the production line grows, these people are ready to go."

[29] The numbers of total new and expanded apprenticeship programs come from Scaling Apprenticeship and Closing the Skills Gap QPRs as of March 31, 2024.

Registration and Sponsorship

As described in chapter 1, all registered apprenticeship programs have a program sponsor that is responsible for registering and operating the program according to its Standards of Apprenticeship. Employers can sponsor their own apprenticeship programs; additionally, colleges, workforce intermediaries, and other organizations can assume this role.

Registered apprenticeships are classified along two dimensions. The first is whether a union is involved. Programs can be jointly sponsored by unions and employers ("joint programs") or sponsored by an employer alone or a different organization ("non-joint programs").[30] The second dimension is whether a program involves a single employer ("independent programs") or multiple employers ("group programs"). Group programs enable multiple employers to sign on to the Standards of Apprenticeship, the sponsor registers and oversees the apprenticeship program, and employers hire and train the apprentices. For some employers, signing on to an existing group program is attractive and can defray the cost of registering and operating an apprenticeship program.

Figure 5.1 shows a breakdown by type of the 62 apprenticeship programs described during the site visits. A plurality (22 programs, or 35 percent of the total) were independent, non-joint programs. A smaller number of programs (19 programs, or 31 percent of the total) were group, non-joint programs. Fewer (three programs, or 5 percent of the total) were independent, joint programs, and only one program was a group, joint program. The small number of group, joint programs is consistent with the focus of both grant programs on nontraditional occupations, where there generally is less union involvement than, for example, in the building trades.[31] Some of these joint programs were able to provide apprentices with reliable benefits.

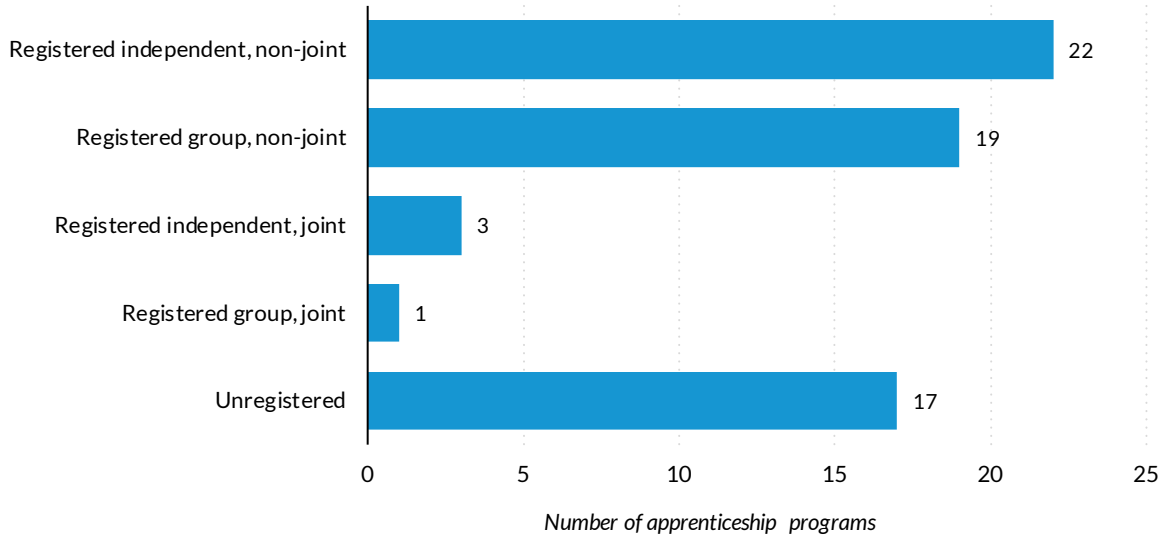
[30] The sponsoring entities for these programs are variously identified as joint labor-management organizations, joint apprenticeship training committees, or joint apprenticeship committees.
[31] In fiscal year 2025, 69 percent of apprentices in programs that identified their industry as "construction" were in a union, compared with 55 percent of apprentices in programs that did not identify their industry as "construction." Authors' calculations from https://www.apprenticeship.gov/data-and-statistics/apprentices-by-state-dashboard.

> **"You have to work a certain number of hours and a certain amount per hour is put into your insurance bank, and we pay for their health insurance. So, whether they're working or not, they're covered by their insurance, which is huge. No one else does it that I'm aware of and I'm pretty aware of what's going on in the country in terms of learning."**
>
> *—Staff at Joint Apprenticeship Training Center of San Mateo, a partner of University of California–Davis grantee*

Site visit grantees reported a range of apprenticeship sponsors. For example, grant staff from Argentum indicated that they successfully worked with Hamilton-Ryker, an intermediary that served as a group sponsor. The staff member described Hamilton-Ryker as a "key asset in growing their apprenticeship program" and identified the intermediary as a primary employer recruiter for its group program (see chapter 7 for more information on employer recruitment). At the time of the site visit, the University of Cincinnati was registering its unregistered apprenticeship program and planned to sponsor the group, non-joint program.

FIGURE 5.1

Number of Scaling Apprenticeship and Closing the Skills Gap Grant–Supported Apprenticeship Programs Described During Site Visits by Program Type



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Source: Interviews with nine Closing the Skills Gap and nine Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

Seventeen apprenticeship programs (27 percent) were unregistered and thus are not similarly categorized. Although they might have structures similar to those of registered programs (e.g., joint versus non-joint or group versus independent), unregistered programs have no formal sponsor. As described in chapter 1, the funding announcement required all grant-supported apprenticeship programs to include five elements[32] regardless of whether they were registered or unregistered.

One employer that partnered with Dallas College and hired apprentices in a new unregistered apprenticeship program described how recognition by the American Culinary Federation was important for its decision to participate in the new certified culinarian unregistered apprenticeship program. A representative of the employer indicated that the American Culinary Federation "is really the big governing body, and so as long as the ACF recognized the unregistered program and they stand behind it, that's all that's important to us."

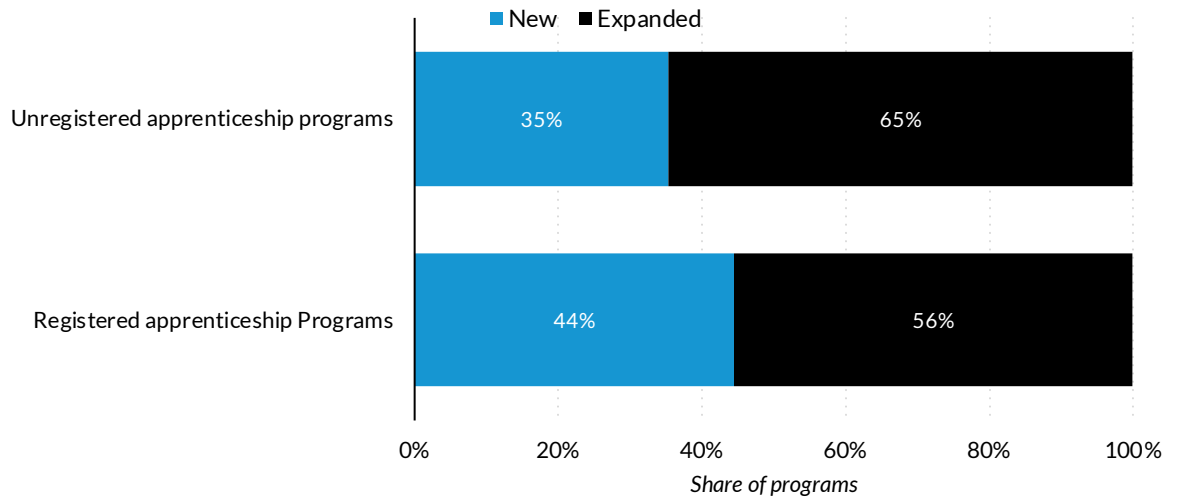
> **"I've been trying to reach out to small local employers, and I say, 'Hey, let's get together and talk about like unregistered models and how we can help some of your internal training programs fit into the mold of an apprenticeship.' "**
>
> *—Staff at Connecticut State Colleges and Universities grantee*

Most of the unregistered apprenticeship programs (11, or 65 percent) and registered apprenticeship programs (25, or 56 percent) that grantees described were expanded, as opposed to created, with grant funds (figure 5.2).

[32] The five elements are paid, work-based learning at an employer site; OJT and mentorship; an educational or instructional component, called RTI in the registered apprenticeship system; an industry-recognized credential upon completion; and safety and supervision policies and procedures.

FIGURE 5.2

Share of Registered and Unregistered Apprenticeship Programs Described During Site Visits to 18 Grantees That Were New or Expanded Programs



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Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62, including 17 unregistered programs and 45 registered programs.

Apprenticeship Occupations

As described in chapter 1, apprenticeships are traditionally concentrated in the building trades, so a primary goal of the Closing the Skills Gap and Scaling Apprenticeship grants was to accelerate the expansion of apprenticeships into other industries. The grant Funding Opportunity Announcements identified IT and cybersecurity, advanced manufacturing, and health care as broad industry categories of specific interest. The occupations of the 62 apprenticeship programs described during site visits are classified within these industries according to Standard Occupational Classification system codes (table 5.1).

The most common apprenticeship occupations were in computer and mathematical occupations, which include IT (19 programs, or 31 percent of the total). Examples of IT occupations include network support technicians and security analysts. Five of the 19 computer and mathematical programs were cybersecurity programs (although others may have included cybersecurity content). Sixteen programs, or 26 percent of the total, were in production, installation, maintenance, and repair occupations, often with advanced manufacturing companies. These occupations included automation technicians and industrial machinery mechanics. Twelve programs (19 percent) were in construction and extraction occupations, including signal installers and low-voltage specialty electrical contractors. While some of

these apprentices were employed in the construction industry, others were employed with utility companies. Eleven of the programs (18 percent) were in health care, including certified nursing assistant and pharmacy technician programs.

TABLE 5.1

Broad Occupational Categories of Apprenticeship Programs Described During Site Visits

Broad occupational category	Count	% of total
Computer and mathematical	19	31
Production, installation, maintenance, and repair	16	26
Construction and extraction	12	19
Health care	11	18
Other	4	6

Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

Note: Occupational categories are from O*NET. "Production, installation, maintenance, and repair" combines programs in production occupations and installation, maintenance, and repair occupations. "Health care" combines programs in health care practitioner and technical occupations and health care support occupations. "Other" combines programs in architecture and engineering occupations; arts, design, entertainment, sports, and media occupations; and food preparation and serving occupations.

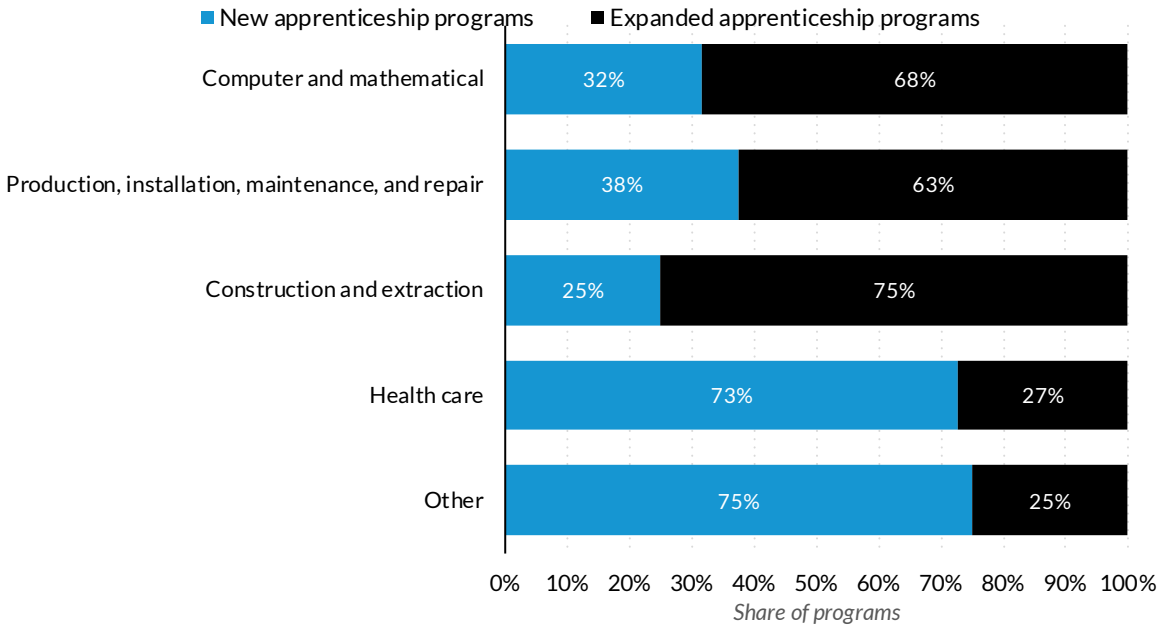
The share of apprenticeship programs that were new or expanded varied across these broad occupational categories (figure 5.3). Seventy-five percent of construction and extraction apprenticeship programs were expanded under the grant, reflecting the fact that apprenticeship is well established in the construction sector, and therefore grantees focused on growing rather than establishing new programs. A smaller share (68 percent) of apprenticeships in computer and mathematical occupations was expanded, followed by 63 percent of the apprenticeship programs in production, installation, maintenance, and repair occupations. In contrast, nearly 73 percent of programs in health care and 75 percent of apprenticeship programs in other occupations were newly developed as a part of the grants. "Other" comprises programs in architecture and engineering; arts, design, entertainment, and sports; and food preparation and serving occupations.

Apprentices training in "other" occupations still support the industry sectors in which grantees are working. For example, Aramark's food service apprenticeship programs trained apprentices to work in food service in hospitals, supporting Dallas College's mission to expand apprenticeship in health care. An employer from Aramark related that "I made it my mission to make hospital food as awesome as it should be," noting that "health care is definitely the most difficult part of the food service industry to work in." He described how unlike restaurants and hotels, where the menu stays consistent over long

periods of time, hospital food must change regularly and be tailored to the dietary needs of patients. This requires highly skilled culinary staff, and an apprenticeship can provide those skills.

FIGURE 5.3

Share of New and Expanded Apprenticeship Programs in Each Occupation



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Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

Note: Occupational categories are from O*NET. "Production, installation, maintenance, and repair" combines programs in production occupations and installation, maintenance, and repair occupations. "Health care" combines programs in health care practitioner and technical occupations and health care support occupations. "Other" combines programs in architecture and engineering occupations; arts, design, entertainment, sports, and media occupations; and food preparation and serving occupations. *N* = 19 for computer and mathematical occupations. *N* = 16 for production, installation, and maintenance occupations. *N* = 12 for construction and extraction occupations. *N* = 11 for health care occupations. *N* = 4 for other occupations.

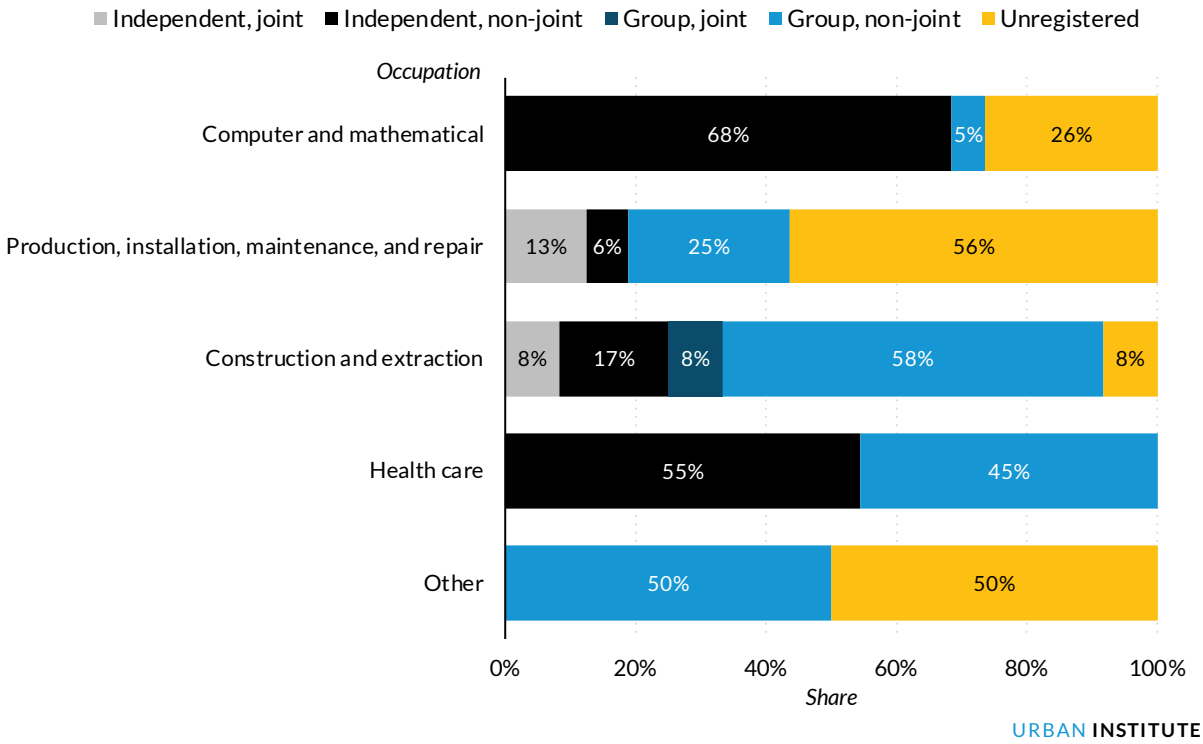
Figure 5.4 depicts the program type of the 62 apprenticeship programs, by occupational category. Each broad occupational category exhibited different patterns in program type. Except for production, installation, maintenance, and repair occupations, most programs in each occupational area were registered. For example, 68 percent of computer and mathematical occupations and 55 percent of health care occupations were registered independent, non-joint programs. The majority (58 percent) of all apprenticeships in the construction and extraction field were group, non-joint programs.

Fifty-six percent of production, installation, maintenance, and repair programs were unregistered, and a quarter were group, non-joint programs. Apprenticeship programs in the "other" occupational category were equally divided between group, non-joint programs and unregistered programs.

These data show that factors such as program registration, union partnerships, and collaboration with multiple employers in group programs are more commonly associated with scaling apprenticeship in certain occupations than in others. Most grantees in nontraditional sectors did not pursue unregistered apprenticeship—only 26 percent of the computer and mathematical apprenticeship programs and none of the health care apprenticeship programs were unregistered.

FIGURE 5.4

Share of Apprenticeship Programs within Each Broad Occupation and Inferred Program Type



Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

Note: Occupational categories are from O*NET. "Production, installation, maintenance, and repair" combines programs in production occupations and installation, maintenance, and repair occupations. "Health care" combines programs in health care practitioner and technical occupations and health care support occupations. "Other" combines programs in architecture and engineering occupations; arts, design, entertainment, sports, and media occupations; and food preparation and serving occupations. *N* = 19 for computer and mathematical occupations. *N* = 16 for production, installation, and maintenance occupations. *N* = 12 for construction and extraction occupations. *N* = 11 for health care occupations. *N* = 4 for other occupations.

Apprenticeship Program Design

Creating new apprenticeship programs involves collaborating with sponsors or other partners to design program features. Such features include how skill attainment will be measured, the duration of training, and the entity that will provide RTI. In registered programs, some design features are set out in the Standards of Apprenticeship, while others, such as the RTI provider, may be determined by employer partners. Unregistered apprenticeship programs have no requirement for Standards of Apprenticeship, but grantees and their partners must make similar program design decisions since unregistered programs also include structured OJT, RTI, wage progressions, and industry-recognized credentials. In this section, we describe variations in program design with respect to measuring skill attainment, program length, and RTI across the 62 apprenticeship programs.

Measuring Skill Attainment

Registered apprenticeship programs measure skill attainment using time-based, competency-based, or hybrid program models. In a time-based apprenticeship program, apprentices demonstrate skill attainment by completing a minimum of 2,000 hours of OJT. Apprentices in competency-based programs are evaluated by successful demonstration of specific skills and competencies that are outlined in a work process schedule, a component of the Standards of Apprenticeship. A hybrid program combines key components of both types, including time parameters for certain competencies. Unregistered programs included in the study use the same terms to describe their programs.

Measuring progressive skill attainment is a required component of registered apprenticeships. Sponsors use these models in registered apprenticeships to demonstrate to OA or SAAs that their apprentices are progressing through their programs by mastering new skills. Registered apprenticeship programs supported by the Scaling Apprenticeship and Closing the Skills Gap grants used all three approaches to delivering training, but the largest share of programs (65 percent) were competency based (figure 5.5). This closely matches with the Gardiner and colleagues (2021) analysis of 126 apprenticeship programs supported by the American Apprenticeship Initiative grants, which found that 69 percent of those programs used competencies to measure skill attainment.

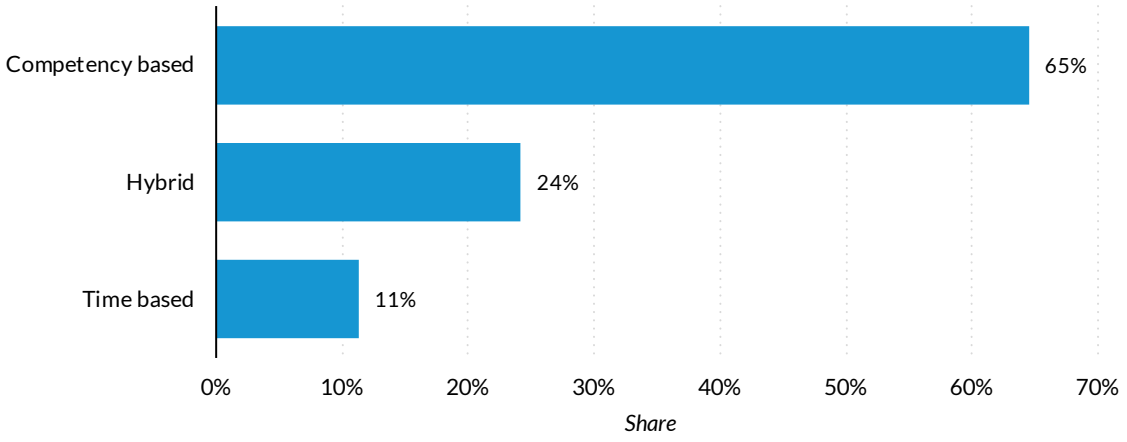
> **"That is a good part of the apprenticeship, being flexible when it comes time in the program, because their progress shows in the development of their competencies."**
>
> *—Staff at Dallas Community College District grantee*

A partner of Ivy Tech's Closing the Skills Gap grant in the state Office of Work-Based Learning described how competency-based apprenticeship programs provide an opportunity to link high school students to apprenticeship. He shared plans to "align high school programs to some of the same course outcomes and learning competencies as Ivy Tech entry level courses, which presents us with a fascinating proposition: if a student has completed these aligned courses and they're getting that dual credit, then we can turn that automatically into a pre-apprenticeship, [and] they could flow directly into an Ivy Tech–related instruction approved apprenticeship." Such a strategy for connecting high school learning to apprenticeship is feasible under a competency-based model but is more difficult in time-based models that require a certain period in apprenticeship program training.

Nearly a quarter of the programs (24 percent, or 15 programs) were hybrid, and 11 percent (7 programs) were time based. The small share of time-based programs could reflect the grants' focus on nontraditional occupations; the time-based program model is common among construction apprenticeships (Gardiner 2023). It may also reflect grantees' interest in providing examples of apprenticeship programs implementing innovative models, such as competency-based training.[33] It is the sponsor or employer's decision as to which approach they implement in their apprenticeship program (Gardiner 2023).

FIGURE 5.5

Share of Time-Based, Competency-Based, and Hybrid Programs



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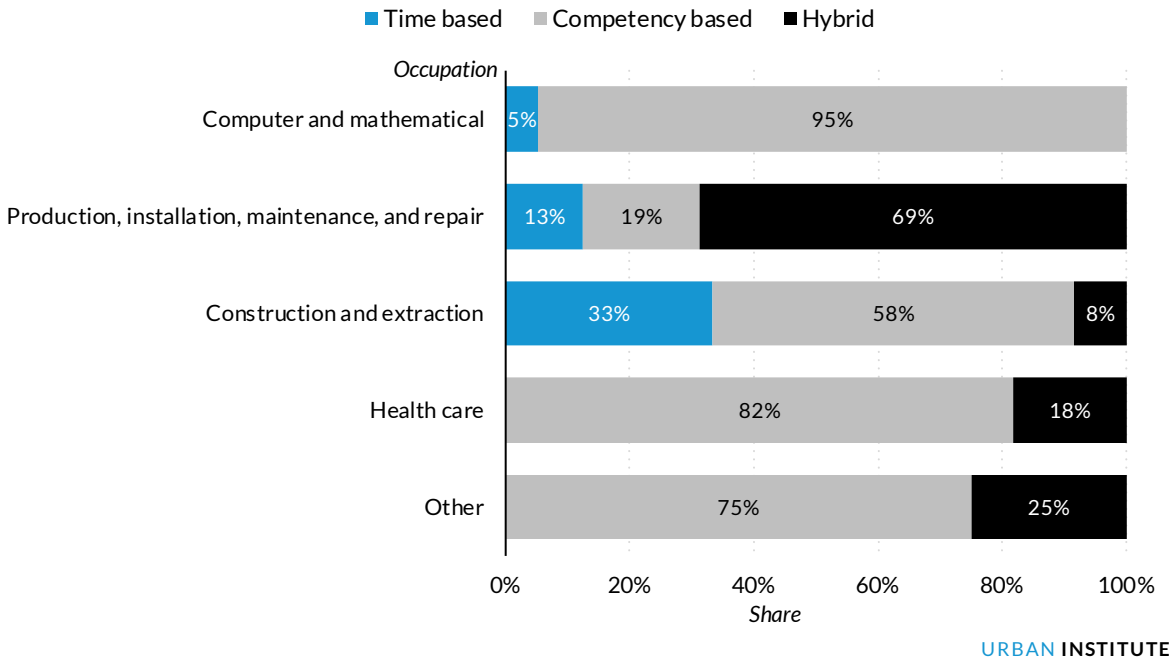
Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

[33] The share of all grant-supported apprenticeship programs that are competency based is unknown because grantees are not required to report this information on each program.

Different occupations may be more amenable to measuring skill development in diverse ways. Figure 5.6 presents the share of competency-based, time-based, and hybrid programs within each broad occupational category. Computer and mathematical occupations have the highest share of competency-based programs (95 percent), followed by health care occupations (82 percent), and other occupations (75 percent). This reflects trends nationally, where apprenticeships in health care and IT are often competency based or hybrid (Gardiner 2023). More than half of construction and extraction programs (58 percent) were competency based, but construction and extraction programs also had the largest share (33 percent) of time-based programs among all occupational categories. Only production, installation, maintenance, and repair programs were predominantly hybrid.

FIGURE 5.6

Share of Time-Based, Competency-Based, and Hybrid Programs by Occupation



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Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

Note: Occupational categories are from O*NET. "Production, installation, maintenance, and repair" combines programs in production occupations and installation, maintenance, and repair occupations. "Health care" combines programs in health care practitioner and technical occupations and health care support occupations. "Other" combines programs in architecture and engineering occupations; arts, design, entertainment, sports, and media occupations; and food preparation and serving occupations. *N* = 19 for computer and mathematical occupations. *N* = 16 for production, installation, and maintenance occupations, *N* = 12 for construction and extraction occupations. *N* = 11 for health care occupations. *N* = 4 for other occupations.

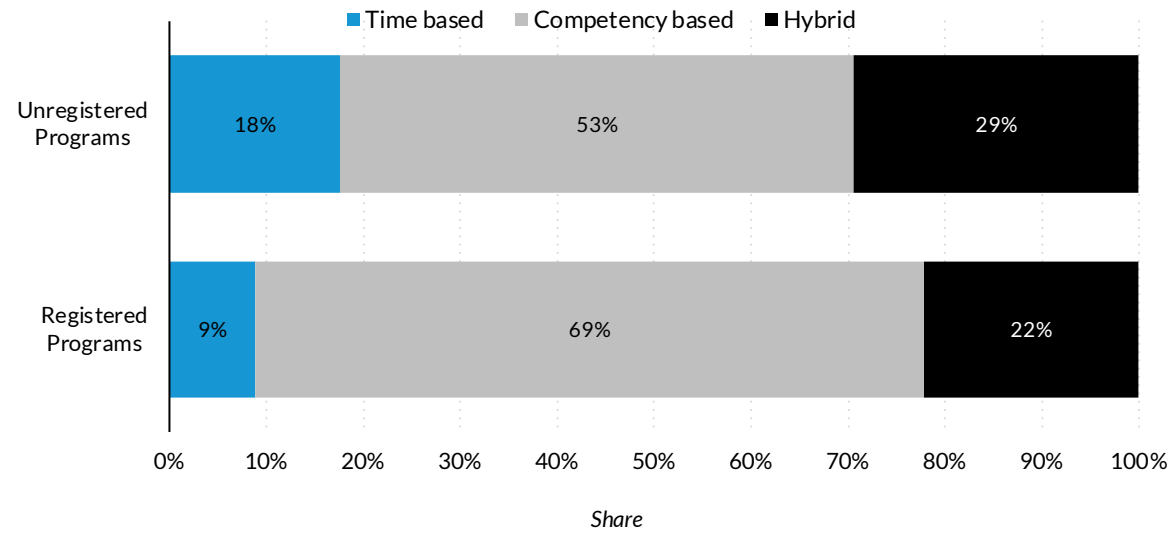
Because employers of unregistered apprentices are not required to report program metrics to OA or an SAA, they are not bound to these models. During interviews with Scaling Apprenticeship and

Closing the Skills Gap grantees and partners, staff associated with unregistered apprenticeship programs nonetheless indicated that they measure skill attainment using one of the models described above. For example, Panasonic, an employer partner of West Los Angeles College, operates a registered apprenticeship program and an unregistered apprenticeship program. A staff member at Panasonic described how its unregistered program is competency based and how the company collaborates with a third-party vendor to develop pre- and post-tests to measure skill attainment.

The experience of Panasonic's unregistered apprenticeship program was similar to that of other unregistered programs described during the site visit interviews. The majority of both registered (69 percent) and unregistered (53 percent) programs were competency based (figure 5.7). The hybrid approach was the second most common model across both types of apprenticeship programs, but unregistered programs had a slightly higher share of hybrid programs (29 percent) than registered programs (22 percent). Time-based programs made up 18 percent of unregistered programs, which was twice the share of time-based registered apprenticeships (9 percent).

FIGURE 5.7

Time-Based, Competency-Based, and Hybrid Programs within Registered and Unregistered



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Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

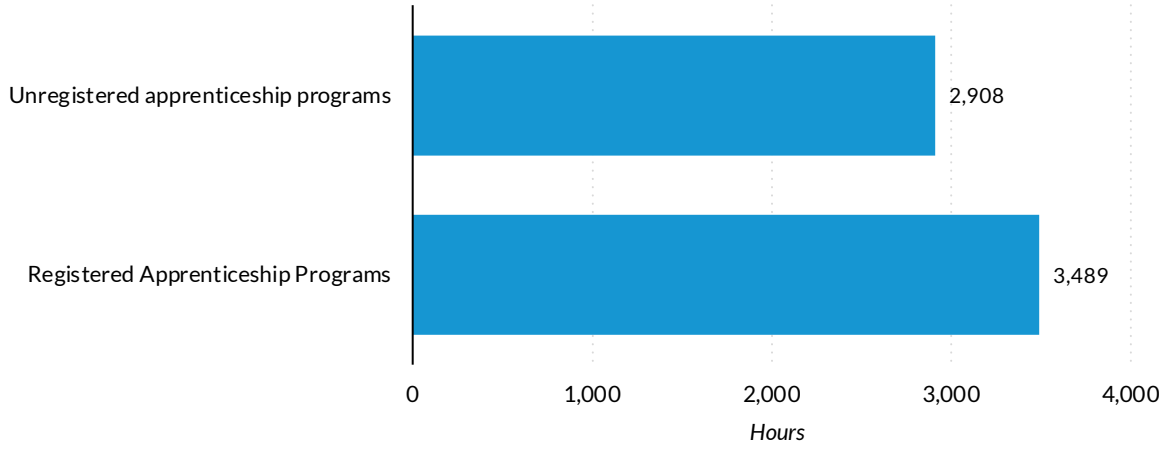
Program Length

Another important design feature of an apprenticeship program is the length of training, usually measured by the duration of OJT.[34] Registered apprenticeship programs must include a minimum of 2,000 hours, or one year, of OJT. Unregistered apprenticeship programs do not have minimum requirements and therefore may be shorter than one year, although in practice many unregistered apprenticeship programs are comparable in length to registered ones (Jacoby and Lerman 2019). The WIPS data reported on individual apprentices does not include their programs' length or other program characteristics except whether they are registered or unregistered, but this information was provided on the 62 programs described in greater detail during the site visits.

All but one of the 62 apprenticeship programs reported the duration of their training (figure 5.8). Of those 61 programs, registered apprenticeships were of a longer average duration (3,489 hours) than unregistered apprenticeships (2,908 hours), although the difference was not statistically significant. The relatively small, unrepresentative sample of apprenticeship programs described during site visits means this finding cannot be generalized to all registered and unregistered apprenticeship programs, but these data provide no evidence that unregistered apprenticeship programs are significantly shorter than registered ones.

FIGURE 5.8

Average Duration of On-the-Job Training, by Registration Status



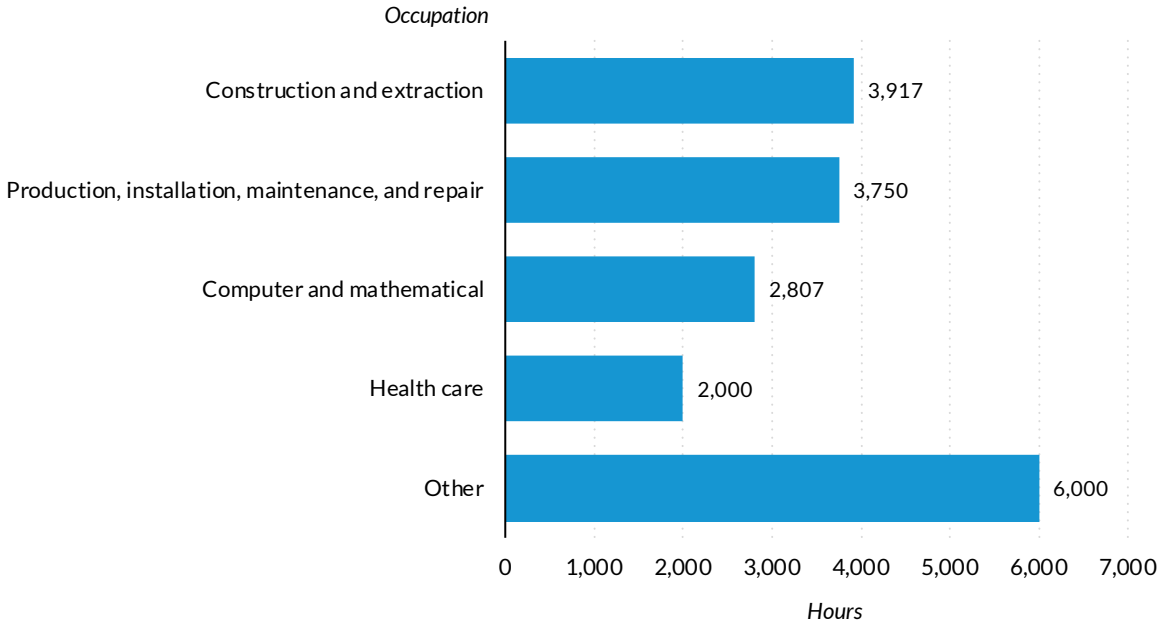
Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 61, because one competency-based program did not identify the usual duration.

[34] For example, an apprenticeship program that includes 8,000 hours of OJT and 576 hours of RTI is usually called a "four-year apprenticeship program" in reference to the OJT hours.

Apprenticeship programs also vary in length across different occupational categories. Figure 5.9 describes the average duration of the 61 apprenticeship programs across the five broad occupational categories. Apprenticeship programs in the "other" occupational category had the longest average program duration (6,000 hours). Health care and computer and mathematical occupations had the shortest average durations (2,000 hours and 2,807 hours, respectively). These durations are comparable to average durations for apprenticeship programs under the DOL American Apprenticeship Initiative, where health care apprenticeships had an average OJT duration of 2,260 hours and IT apprenticeships had an average OJT duration of 2,554 hours (Gardiner et al. 2021).[35] Production, installation, maintenance, and repair programs and construction and extraction programs had average OJT durations approaching two years (3,750 and 3,917 hours, respectively).

FIGURE 5.9

Average Duration of On-the-Job Training, by Occupation



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Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 61, because one of the competency-based programs did not identify a usual duration.
Note: Occupational categories are from O*NET. "Production, installation, maintenance, and repair" combines programs in production occupations and installation, maintenance, and repair occupations. "Health care" combines programs in health care practitioner and technical occupations and health care support occupations. "Other" combines programs in architecture and engineering occupations; arts, design, entertainment, sports, and media occupations; and food preparation and serving occupations. *N* = 19 for computer and mathematical occupations. *N* = 16 for production, installation, and maintenance occupations, *N* = 12 for construction and extraction occupations. *N* = 11 for health care occupations. *N* = 4 for other occupations.

[35] All American Apprenticeship Initiative programs were registered.

Related Technical Instruction

In addition to OJT, all apprenticeship programs include RTI, which teaches theoretical principles behind the occupational skills learned on the job. Registered apprenticeships are recommended to have at least 144 hours of RTI per year.[36] RTI can be delivered in a classroom setting or virtually. The RTI provider for an apprenticeship program is a key partner, responsible for ensuring that apprentices fully master classroom content. Although Standards of Apprenticeship include the RTI outline, providers of training are typically not named, and are determined by sponsors and employer partners. Many types of partners can deliver RTI, including employers, colleges, unions, or private training providers.

Among the 62 apprenticeship programs, colleges provided RTI for the majority in every occupational area except computer and mathematical (table 5.2). This includes 89 percent of programs in production, installation, maintenance, and repair occupations; 83 percent in construction and extraction occupations; 55 percent in health care occupations; and 100 percent in other occupations. Across all occupations, 71 percent of the apprenticeship programs reported that a college provided their RTI. Even in computer and mathematical occupations, colleges still provided RTI for a large share of the programs (42 percent). By way of comparison, 57 percent of American Apprenticeship Initiative apprenticeship programs used colleges to provide RTI (Gardiner et al. 2021).

TABLE 5.2

RTI Provider Type by Occupation

Occupation	College (%)	Employer (%)	Union (%)	Private training provider (%)
Computer and mathematical	42	47	0	11
Production, installation, maintenance, and repair	89	11	0	0
Construction and extraction	83	0	17	0
Health care	55	45	0	0
Other	100	0	0	0
All programs	71	26	3	3

Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

Note: Percentages do not always add up to 100% because of rounding and because two apprenticeship programs reported two RTI provider types. Occupational categories are from O*NET. "Production, installation, maintenance, and repair" combines programs in production occupations and installation, maintenance, and repair occupations. "Health care" combines programs in health care practitioner and technical occupations and health care support occupations. "Other" combines programs in architecture and engineering occupations; arts, design, entertainment, sports, and media occupations; and food preparation and serving occupations. *N* = 19 for computer and mathematical occupations. *N* = 16 for production, installation, and maintenance occupations, *N* = 12 for construction and extraction occupations. *N* = 11 for health care occupations. *N* = 4 for other occupations.

[36] See "Standards of Apprenticeship," 29 CFR § 29.5, accessed June 16, 2025, https://www.ecfr.gov/current/title-29/section-29.5.

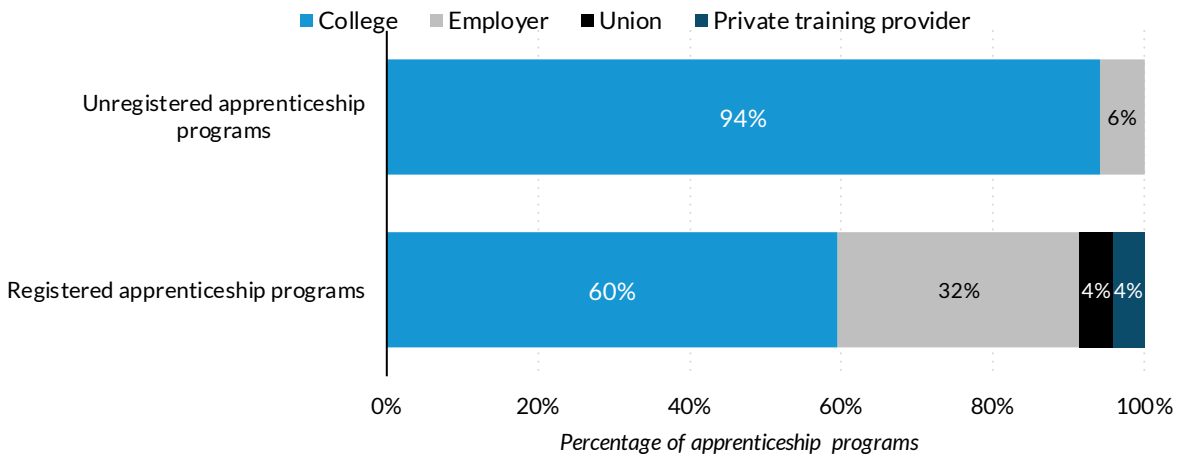
The largest share of computer and mathematical apprenticeship programs provided RTI at the employer site (47 percent). A slightly smaller share (45 percent) of health care apprenticeship programs had employers deliver their RTI. Unions and private training providers were RTI providers in some programs but not as frequently as colleges and employers. Unions provided the related instruction in 17 percent of programs in construction and extraction but were not used in any other occupation. Private training providers delivered related instruction for 11 percent of programs in computer and mathematical occupations, but no other occupation.

One factor in the selection of colleges as RTI providers is the high participation of colleges in the grant programs. As indicated in chapter 3, all Scaling Apprenticeship grantees and more than half of Closing the Skills Gap ones were IHEs, including community colleges. Another factor is the proximity of community colleges to employers. For example, the Healthcare Career Advancement Program (H-CAP) partnered with California Correctional Health Care Systems to deliver a licensed vocational nurse and registered nurse apprenticeship program in correctional facilities. A representative from the California Correctional Health Care Systems indicated they chose the prisons in which to train their apprentices based on their location in relation to their RTI providers, which are community colleges.

Registered and unregistered apprenticeship programs relied on distinct types of partners to provide RTI (figure 5.10). Nearly all (94 percent) unregistered apprenticeship programs identified colleges as their apprentices' RTI provider, compared with 60 percent of registered apprenticeship programs. Employers delivered RTI for the remaining 6 percent of unregistered apprenticeship programs and for 32 percent of registered apprenticeship programs. Related instruction for the remaining 8 percent of registered apprenticeships was split evenly between unions (4 percent) and private training providers (4 percent). Only 27 percent of the 62 apprenticeship programs were unregistered, and thus the sample might not be indicative of the instructional models of unregistered apprenticeships more generally.

FIGURE 5.10

Related Technical Instruction Provider Type within Registered and Unregistered Programs



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Source: Interviews with Closing the Skills Gap and Scaling Apprenticeship grantees and partners conducted between the fall of 2022 and the spring of 2023. *N* = 62.

Chapter 6: Strategies for Apprentice Recruitment and Retention

As we noted in chapter 4, about 67 percent of participants entered an apprenticeship program. In some grantees' programs, participants entered apprenticeship immediately, while other grantees' programs provided grant-funded services to non-apprentice participants first. Grantee staff, employers, and grant partners each have a role in supporting the apprentices' success, beginning with an apprentice's recruitment and continuing through program completion. This chapter uses information collected during site visit interviews to describe the range of strategies Scaling Apprenticeship and Closing the Skills Gap grantees used to recruit and support apprentices through program completion.

Grantees noted that apprentices learn about and enter training through different pathways, including pre-apprenticeships, community colleges, American Job Centers (AJCs),[37] youth-serving organizations, and their employers. As a result, grantees and their partners adopted a variety of strategies that they report helped them identify and enroll apprentices and support them through RTI and OJT, and attainment of an industry-recognized credential. We begin by describing the grantee partners that supported apprentice recruitment, followed by a description of the

BOX 6.1

Chapter 6 Key Takeaways

- More than half of the Scaling Apprentices and Closing the Skills Gap grantees participating in site visits reported involving employers, American Job Centers, and colleges in apprentice recruitment.
- Employer partner apprentice recruitment strategies included involvement of employers in recruitment events and encouraging peer learning.
- College partners reported success through recruiting students interested in developing occupational skills from nondegree and experiential learning programs.
- Grantees reported that pre-apprenticeships help to provide access to apprenticeship programs for individuals who are not prepared to start an apprenticeship.
- Grantees who were institutions of higher education reported providing related technical instruction to apprentices before employers hired them.
- Barriers to retention in apprenticeship included grantee organizations' capacity constraints and the COVID-19 pandemic.

[37] American Job Centers provide a full range of assistance to job seekers under one roof, including training referrals, career counseling, job listings, and similar employment-related services.

strategies that each of those partners used to recruit diverse apprentices. The chapter then explores what grantees report are their promising practices to help apprentices persist in and complete their programs. See box 6.1 for key takeaways.

Apprentice Recruitment Partners

Success in an apprenticeship program begins with recruitment. If recruitment strategies are not wide ranging, large segments of potential apprentices will miss an opportunity to apply. Recruitment and enrollment into an apprenticeship program is also an opportunity to identify the supportive services that apprentices need to succeed in their program.

During site visits grantees described their key apprentice recruitment partners (figure 6.1) and practices. No grantee relied solely on internal staff to recruit apprentices. Rather, they engaged a range of partners. The types of partners differed by grantee organization. Grantees that are IHEs (all Scaling Apprenticeship and over half of Closing the Skills Gap grantees) would be expected to have a different array of partners than grantees that are workforce boards, unions, or other entities. Partner organization types are therefore reported separately in figure 6.1 for the 12 IHE grantees and 6 non-IHE grantees.

Apprentices take different pathways to apprenticeship programs, some of which interview respondents may not even be aware of or report during interviews. As Missouri Chamber Foundation staff noted, even recruitment partners have their own partners, adding, "each employer has their own set of community organizations that they work with" to recruit apprentices.

Figure 6.1 presents the recruitment partners that interview respondents mentioned as important. The most reported recruitment partners were employers, mentioned by two-thirds of both non-IHE grantees (4 out of 6) and IHE grantees (8 out of 12). This is not surprising, given the significant role employers play in apprenticeship programs. This could also reflect grantees' focus on incumbent workers (chapter 3). The next most common recruitment partner was AJCs. Half of the non-IHE grantees (3 out of 6) and 42 percent of IHE grantees (5 out of 12) reported partnering with AJCs.

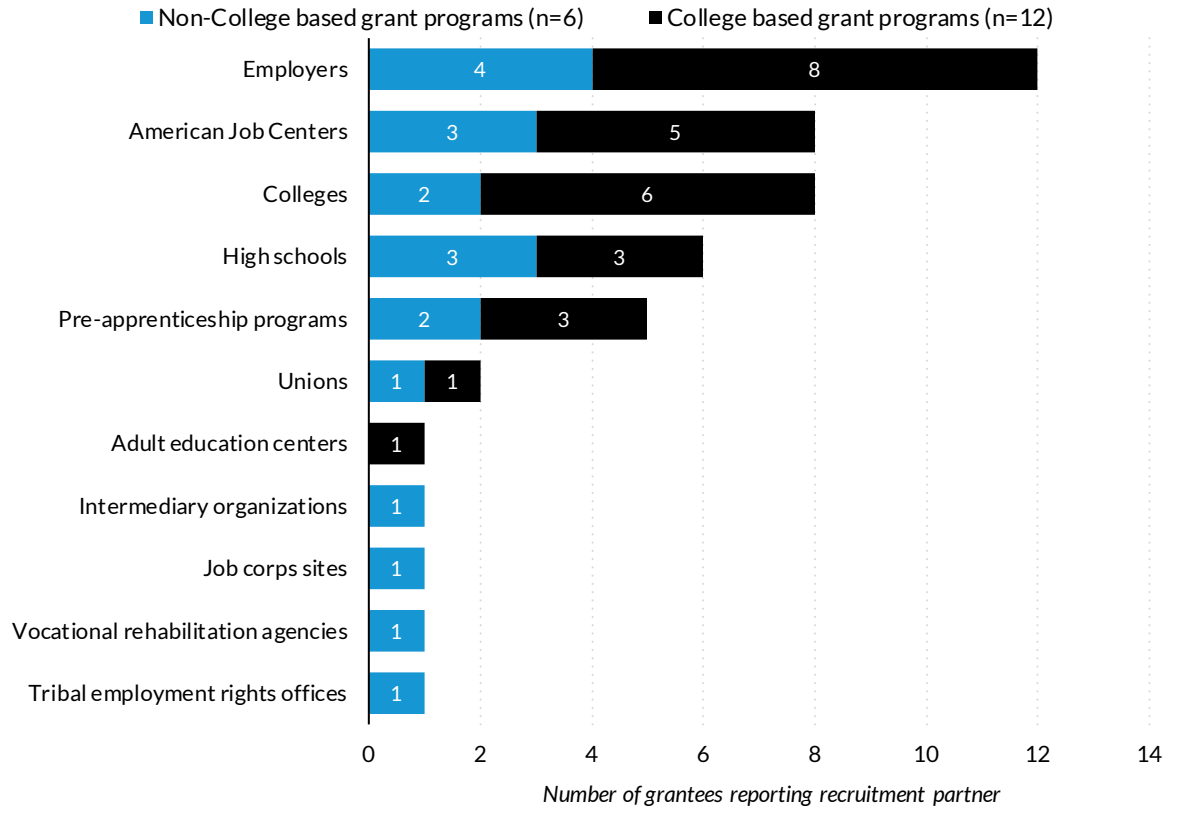
Not surprisingly, colleges were a more frequent recruitment source for IHE grantees than non-IHE grantees. A third of non-IHE grantees (2 out of 6) and half of IHE grantees (6 out of 12) reported colleges as a recruitment source for apprentices.[38] A third of non-IHE grantees reported pre-

[38] One grantee indicated that four-year colleges were an important referral source for apprentices, while the others described recruitment from community colleges.

apprenticeship programs as a recruitment source, compared with one-quarter of IHE grantees. The same number of IHE and non-IHE grantees reported partnering with high schools (3 grantees in each group) and unions (1 grantee in each group). However, because half as many non-IHE grantees were included in site visits as IHE grantees, likely a higher share of non-IHE grantees worked with these partners to recruit apprentices.

FIGURE 6.1

Organization Types Identified as Sources of Apprentice Referrals, 2022-2023



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Source: Recruitment partners identified by grantee staff and partners during virtual site visit interviews.
Note: Partners add up to more than the number of grant programs because grant staff and partners can report more than one partner organization that supports apprentice recruitment.

Apprentice Recruitment Strategies

In this section, we describe the apprentice recruitment partners most identified by Scaling Apprenticeship and Closing the Skills Gap grantees, and the strategies that they used. Although eight grantees cited AJCs as an important recruitment partner, they are not described separately here because their recruitment role primarily involved referring clients to apprenticeship programs as a standard workforce system service.

Employer Partner Strategies for Recruiting Apprentices

Apprenticeship is an employer-led training model, so employers play a key role in recruiting apprentices. Twelve of the 18 grantees mentioned employers as one of their important recruitment sources for apprentices, and three grantees mentioned only employers and no other partners as a recruitment source. Since an employer must hire an apprentice, it may seem counterintuitive that six grantees did not report employers as an important recruitment source. In these cases, even though employers hired apprentices, other organizations more proactively marketed apprenticeship to individuals. IHE grantees were as likely to report employers as a recruitment source as non-IHE grantees, with two-thirds of the grantees in each group reporting employers as a recruitment source. Examples of employer partner strategies for recruiting apprentices include the following:

Encouraging employer participation in recruitment events. Grant staff at Bergen Community College noted that "employer participation is key to recruitment" into the college's health care apprenticeships. Staff reported that a major change introduced under the grantee's Scaling Apprenticeship grant was to include employers in apprentice recruitment events along with college instructors. Columbus State Community College required employer participation in apprentices' orientation. Grant staff shared that employers compete for apprenticeship candidates, and employers that sign a partnership agreement with the college have a one-hour virtual session to introduce their program to the students. The grantee also asks employers to participate in at least two engagement opportunities with the students each calendar year.

Facilitating peer learning among employers. Connecticut State Colleges and Universities staff described how their employer partners exhibited different strengths in recruiting new apprentice populations, which provided an opportunity for peer learning among employers. For example, IBM successfully recruited apprentices by offering credit for prior learning and by using "situational based questions" during intake interviews. A situational based question asks the interviewee to describe what they would have done in a situation rather than asking them to describe their own experience. The

partner described how framing questions in terms of hypothetical situations works for people with differing professional backgrounds. Grant staff encouraged employers to share their experiences with other employers in regular recruitment roundtables facilitated by Achieving the Dream, a Connecticut State Colleges and University partner. Grant staff believe that employer partners are more receptive to hearing about what works in practice from their peers than if recommendations were to come directly from grant staff.

Fostering a culture of apprenticeship. Staff from Argentum, an industry association that focuses on senior living, described how they developed a "culture" of apprentice recruitment with their employers and integrated it into their hiring process. That culture includes mentioning the apprenticeship program in all recruitment materials and ensuring that new hires connect with the apprenticeship program lead. Thus, staff note that advertising and communicating about the apprenticeship program is both a direct recruitment strategy and a way of building apprenticeship into the corporate culture.

Using launch events to communicate the value of apprenticeship to the community. Argentum also experimented with new ways to share the value of apprenticeship training for staff with senior living facility residents and their families. An Argentum partner believed that planning an engaging apprenticeship program launch event was important for robust recruitment of apprentices. They described a particularly strong launch event that included handwritten letters to the families of nursing home residents to communicate how apprenticeship would improve the quality of care as well as the presence of state legislators at the launch event to promote apprenticeship expansion in the state.

Not overly complicating employers' hiring practices. While many employers were proactive in recruitment activities, grant project staff and employers noted the importance of not overcomplicating employers' hiring process as a condition for hiring grant-supported apprentices. Missouri Chamber Foundation staff shared that employers could easily feel overburdened by additional complications added to the apprentice recruitment process for the grants. Similarly, an IT employer who worked with the University of Cincinnati grant project shared how valuable it was for them that the university made it easy to hire apprentices from their program.

College Partner Strategies for Recruiting Apprentices

Colleges, and in particular community colleges, play an important and growing role in both the registered apprenticeship system (Anderson and Keily 2021; Beer 2019; Cantor 1995; Klor de Alva and Schneider 2018) and the delivery of unregistered apprenticeship training (Jacoby and Haskins 2020; Jacoby and Lerman 2019). The 23 Scaling Apprenticeship grant projects were exclusively led by

colleges, as were 17 of the 25 Closing the Skills Gap grant projects. In addition to delivering related technical instruction, 8 of the 18 site visit grantees reported that colleges were an important recruitment source for apprentices.

Grantees used colleges as recruitment sources in diverse ways, depending on the strengths and existing infrastructure of the respective college or college system. For example, the reach of statewide college systems such as the Illinois Community College Board and Ivy Tech Community College of Indiana affords them an advantage in recruitment activities. In other cases, such as the University of Cincinnati, a single college led the grant (with its partners, which in some cases included other college partners). Reported strategies for recruiting apprentices through colleges included these:

Using community college systems as statewide apprenticeship recruitment coordinators. Ivy Tech's Ivy+ Career Link team provides statewide education, training, and career services and receives apprenticeship inquiries from across the state of Indiana from current Ivy Tech students and community members. As a statewide community college system, Ivy Tech can coordinate apprenticeship recruitment across the state. The grant director described how he and college-level apprenticeship staff review apprenticeship inquiries and direct individuals to either an appropriate joint apprenticeship training committee (if they are interested in the building trades) or Ivy Tech's grant-supported advanced manufacturing programs.

Recruiting students interested in developing occupational skills from nondegree and experiential learning programs. Ten of the 12 IHE grantees provided apprenticeship training through noncredit workforce programs. Such programs trained students for a specific occupation and, depending on the program, resulted in a certificate, diploma, or other credential. Because the post-training goal was employment, the programs considered the evolving nature of employers' skill demands, and their student population was focused on occupational training and employment (as opposed to transferring to a four-year institution).[39] For example, Dallas College grant staff used the college's Experiential Learning Office to recruit apprentices. Experiential learning staff began recruitment by contacting interested students and discussing their goals, educational background, and current situation. Staff then helped students identify apprenticeship pathways appropriate for their needs and interests. The DOL OA recognized the director of experiential learning as an Apprenticeship Ambassador.[40]

[39] One of the 10 grantees, the Pennsylvania College of Technology, provides a robust credit pathway for apprentices interested in completing an associate's degree program, although that is not required of apprentices.
[40] See "Anita Bedford Named Department of Labor Apprenticeship Ambassador," Dallas College Blog, Oct. 20, 2022, accessed June 23, 2025, http://blog.dallascollege.edu/2022/10/anita-bedford-named-apprenticeship-ambassador.

Aligning apprentice recruitment events with college students' schedules. As one example of this strategy, Bergen Community College staff scheduled information sessions for students on the apprenticeship opportunities available to them at one of its colleges during lunch time because it was easier for students to attend. Another college participating in the Bergen grant scheduled information sessions "at all different times, since everyone was a shift worker" at that school.

Pre-Apprenticeship Partner Strategies for Recruiting Apprentices

Grantees also engaged partners to provide a bridge between pre-apprenticeship and apprenticeship programs. Five of the 18 grantees participating in virtual site visits identified pre-apprenticeship programs as important recruitment partners. Three of the five were Closing the Skills Gap grantees and thus could not use grant funds to pay for pre-apprenticeship training but could still recruit apprentices from (non-grant-funded) pre-apprenticeship program partners. Two grantees, West Los Angeles College and Connecticut State Colleges and Universities, described how workforce boards operated or supported the pre-apprenticeship programs that supplied applicants to their apprenticeship programs. For example, the Connecticut State Colleges and Universities grant director emphasized the role of state workforce agencies in replicating successful pre-apprenticeship strategies. He noted that the State of Connecticut is now replicating the Eastern Connecticut Manufacturing Pipeline Initiative in health care[41] to ensure that strategies developed as a part of the Scaling Apprenticeship grant are used by other employers. Other grant projects worked with external partners or provided pre-apprenticeship training in their own organization.

Staff at AFL-CIO's Working for America Institute described how even though employers led apprentice recruitment, partners providing pre-apprenticeship training, such as the Machinists Institute, also referred pre-apprentices to apprenticeship programs. The Machinists Institute Pre-apprenticeship Career Accelerator program[42] is a 12-week course that covers employability skills, mental health, wellness, financial literacy, and digital literacy in addition to basic technical skills for machinist occupations. Pre-apprentices also work toward industry-recognized credentials as part of the Career Accelerator program, thus facilitating entry into AFL-CIO-supported apprenticeship programs. For example, the Snap-on Precision Measuring certification[43] certifies that the pre-apprentice knows how to use advanced measuring tools. Career Accelerator also supports pre-apprentices' bridging into

[41] See the Eastern Connecticut Healthcare Pipeline Initiative, https://www.ewib.org/pipeline-initiatives/healthcare-pipeline/.
[42] See "Machinists Institute Career Accelerator (MICA)," Machinists Institute, accessed June 23, 2025, https://mica.machinistsinstitute.org/.
[43] See "Measuring Certifications," Snap-on, accessed June 23, 2025, https://www.snapon.com/Industrial-Certification/Certifications/Precision-Measuring-Certifications.

apprenticeship by ensuring that its program has the flexibility to accommodate the needs of high school students. The Machinists Institute provides a condensed six-week version of the pre-apprenticeship for high schoolers that avoids repeating skills that the students have already learned in their career and technical education classes.

Although the grants only supported participants ages 17 and older who were not currently enrolled in school, an Argentum partner reported that they are trying to involve high schools in implementing pre-apprenticeships as a pathway to apprenticeship programs to help ensure that youth have a bridge to a career rather than potentially becoming disconnected upon graduation. This partner met with American Federation of Teachers executives to discuss how teachers could help implement high school–based pre-apprenticeship programs. They also partnered with one of DOL's Youth Apprenticeship Intermediary contractors to deepen their work with high schools.

Retention of Apprentices

Starting an apprenticeship does not guarantee that an apprentice completes the program. Apprentices must persist in training to earn their apprenticeship completion certificate and any other credentials that come with completion. Apprentices may leave an apprenticeship program early for many reasons, including personal or family issues and academic problems. Such problems can arise at many points during training, so grant staff developed and implemented retention strategies for all components of the apprenticeship. In this section we first describe how effective recruitment can support subsequent retention. We then turn to retention strategies associated with OJT and RTI.

Recruitment Strategies to Support Apprentice Retention and Training Experiences

Grantee staff shared that apprentice retention starts with deliberate recruitment. Scaling Apprenticeship and Closing the Skills Gap grantees discussed the importance of structuring the recruitment process in a way that identifies strong apprentice candidates who will be more likely to complete their program.

Grant staff at Columbus State Community College shared data on the college's apprenticeship program to illustrate this point. In the year prior to the virtual site visit, 86 participants started their training at the college with a goal of entering an apprenticeship. Fifty-six of those participants persisted through their college training and were determined to be eligible to interview with an apprenticeship employer. Of those, 34 participants were hired into the apprenticeship program. A staff member

estimated that of those 34 who began an apprenticeship program, "98 percent complete[d] the apprenticeship," adding that "I can count on one hand the number who did not complete it." The staff member attributed the exemplary completion rate to requirements that identify "individuals who maybe this program is not a good fit for" before they begin the apprenticeship. They also cited robust supports during the apprenticeship, which are discussed in the following sections.

Testing potential apprentices as a part of recruitment. Some grantees assessed applicants' skills and knowledge as a part of the recruitment process to ensure that only apprentices with requisite baseline skill levels started the apprenticeship. For example, Bergen Community College grant staff reported that the pharmacy technician program assesses applicants' math skills during intake to confirm that they have the skills required by employer partners. (As described in chapter 3, assessment is an approved activity and might help explain the difference between the number of grant participants and apprentices.)

Targeting specific college programs for recruitment. Columbus State Community College recruits for its IT apprenticeship programs from students enrolled in the college's workforce programs rather than those seeking a transfer degree, who likely have a four-year degree as an end goal. Additionally, Columbus State gives presentations to local high school students and follows up with outreach to students who fill out a "contact card" expressing interest. Grant staff at San Jacinto Community College reported that they reach out to everyone in an IT program, regardless of whether it is a certificate or a degree program.

Requiring a waiting period before new hires enter the apprenticeship. Argentum's caregiver apprentices are typically incumbent workers who enter the apprenticeship program after four to six weeks working at a nursing home. The purpose of the waiting period is to ensure that the apprentice understands and is committed to the job before the employer begins its training investment. As reported by staff, Argentum developed this practice out of a concern that apprentices who start training as soon as they are hired "might take the role and ghost because it is not what they thought it would be."

On-the-Job Training Strategies to Support Apprentice Retention and Improve Training Experiences

Most of the time an apprentice spends in training occurs at the employer's worksite during OJT. Thus, retention strategies related to OJT need to involve employers.

Providing career coaches in addition to standard apprenticeship mentoring. All apprentices are mentored by experienced workers during OJT, but Bergen Community College and Columbus State

Community College mentioned that additional staff provided career coaching for apprentices at the employer site. Columbus State staff shared that its ITFlex program incorporates "intrusive career coaching" beginning at recruitment and continuing through the program. Some of the coaching helps participants prepare to apply for apprenticeships. For example, apprentices receive resources and coaching to write résumés, create LinkedIn and Handshake profiles, and prepare for interviews. Other dimensions of Columbus State's career coaching support retention on the job. Grant staff identify intrusive career coaching, where the coach works with apprentices to identify barriers and needs, as an important strategy for promoting successful completion of the program. Bergen Community College's partner colleges have grant-funded success coaches that work with students who are applying to employer sponsors to ensure that they are prepared to start OJT. A hospital operating an apprenticeship program identified the grant's success coaches as "very important, because they are the liaison between" the hospital and the college on matters related to the apprentices and their progress.

Building OJT into students' schedules with a cooperative model to encourage participation in apprenticeship by four-year college students. The University of Cincinnati's grant builds on its long history of cooperative education (co-op) dating back to 1906.[44] Much like apprenticeship, co-ops combine classroom-based instruction (typically as a part of a bachelor's degree program) with year- or semester-extended periods of paid, productive employment as a "co-op" employee with a company (Kuehn 2021). The University of Cincinnati's grant project aligns IT co-ops with the requirements for an apprenticeship. This approach resolves the difficulty of coordinating OJT and RTI schedules since co-op students are already expected to work with employers for significant periods of their apprenticeship.

Setting clear expectations for supportive OJT. To help ensure that apprentices receive adequate supports on the job, the grant director for Columbus State Community College sets clear expectations with employer partners about what supports are expected. The staff member said he makes it clear to employers that the program is not "transactional." He explained how he tells employers that "if you are looking to just hire someone from Columbus State Community College and never talk to us again, then this program is not for you."

> **"They are paired with mentors who are experienced machinists. Nobody will be alone."**
>
> *—Apprentice Manager at Northrop Grumman*

[44] See "The Ultimate Guide to Cooperative Education (Co-Op)," University of Cincinnati, accessed June 23, 2025, https://www.uc.edu/news/articles/2021/06/university-of-cincinnatis-quick-guide-to-co-op-education.html.

Grant staff at Columbus State Community College outlined their expectations that an apprentice will have a mentor who is not their supervisor for OJT and any other needs on the job. This mentor is expected to provide a supportive learning environment for the apprentice to complement their training at the college. In addition to providing occupational skills training, mentors of Columbus State apprentices are expected to support them professionally with problems that emerge on the job.

Deliver OJT at accessible jobsites. Grant staff at the Missouri Chamber Foundation reported that two of their employer partners located their apprenticeship jobsites on bus routes to facilitate access. One of those employers also partnered with an electronic scooter company to ensure that mode of transportation was available for free to apprentices who live close enough to the jobsite for that to be a viable method of transportation.

Exposing apprentices to multiple employers and mentors. Two grant staff described how apprentices can get a stronger OJT experiences through exposure to different employers and mentors. Columbus State Community College rotates its IT apprentices through at least four different employers to expose them to different mentors and worksite supervisors. Grant staff at the Wireless Infrastructure Association described how journeypersons who are not an apprentice's assigned mentor are still expected to provide informal mentorship to apprentices to complement their OJT. Staff noted that they expose apprentices to different employers and mentors, thus providing a well-rounded training experience and alternative sources of mentorship if an apprentice does not have a good relationship with their assigned mentor. Grant staff also report that both factors improve apprentices' experiences in the program, which encourages them to persist in their training.

Related Technical Instruction Strategies to Support Apprentice Retention and Improve Training Experiences

All Scaling Apprenticeship grantees and more than half of Closing the Skills Gap grantees (17 of the 25) were IHEs. These grantees were well positioned to create innovative RTI that supported apprentice retention. Examples include the following:

Developing a portable, modular RTI curriculum. Grantees can develop or revise the curriculum to ensure that it is adaptable to the RTI needs of different employer partners. Grant staff at Pennsylvania College of Technology described how they developed a portable curriculum covering up to 10 different manufacturing occupations, called the Modular, Industry-Driven Apprenticeship Strategies, or MIDAS. The grantee provides MIDAS to its subgrantees for the apprenticeship programs they support. Grant staff reported that the standardized curriculum structures apprentices' RTI so that it is responsive to

employer needs and helps ensure that employers have buy-in and invest in the training of their apprentices.

Training cohorts from multiple employers together. Grant staff at H-CAP reported that their specialty care apprentices across multiple employer partners make two weeklong trips to the organization's Nashville training site for RTI. In addition to learning the specialty care skills required for the job, the trips aim to develop a group culture and support system for the apprentices. The staff member added that "we make it a fun time for them" to support their completion.

Providing RTI in college-based apprenticeship programs before employers hire apprentices. Bergen Community College and Columbus State Community College "front-loaded" RTI so that it was largely completed before the apprentice started on the job. That practice may improve the apprentices' experience in the apprenticeship by ensuring that they enter work with a strong technical background in their occupation. Front-loading also helps ensure that the apprenticeship program itself is well coordinated with existing college programs in the state. Since apprentices must be hired by an employer to be considered an apprentice, in many cases participants are not technically "apprentices" during front-loaded RTI and instead are considered pre-apprentices or college students. Columbus State considers students in front-loaded classes to be pre-apprentices, rather than apprentices, before they are hired. The practice of front-loading also helps explain why IHE grantees report more participants than apprentices.

Academic navigation for apprentices. When Columbus State Community College apprentices are participating in RTI at the college, they have access to two grant-funded advisers. One adviser specializes in assisting students with their needs outside the classroom and with navigating any additional financial support they require. The second grant-funded advisor provides academic navigation and support. These advisors meet regularly with apprentices throughout their studies.

Design apprenticeship training for all interested students. Staff at Dallas College reported that support staff are equipped to meet the needs of all students who are interested in apprenticeship. One evidence-based framework for supporting students with diverse needs and learnings styles is Universal Design for Learning (UDL), which is used in inclusive apprenticeship programs (Docto, Koller, and Grey 2022).

Retention Challenges

Grantees reported that supporting populations that are new to apprenticeship during an apprenticeship program required planning and customization depending on the needs of each population and even

individual applicants, which was difficult to do at scale. For example, Wireless Infrastructure Association grantee staff described how effective outreach to new populations needed to be "customized for each community" and could not rely on a single approach nationally. They learned that their initial plans to serve a wide geographic area made this sort of customization to ensure retention difficult and that a lesson was to be more focused on a particular community and form deeper relationships with partners who were working with the new populations being targeted.

The grant director at Columbus State Community College identified capacity as an important constraint on the scale of the college's apprenticeship program and retaining apprentices. The grantee supported retention of its apprentices through what it called "high-touch" strategies with two grant-funded advisers (described above) who provided academic support. Serving a higher number of apprentices and retaining them throughout the apprenticeship would require more advisers.

As described in chapter 2, the COVID-19 pandemic proved particularly challenging for health care apprenticeships. That was especially true, according to one grant staff member, in the case of frontline health care jobs like certified nursing assistants (CNAs). A Bergen Community College grant staff member reported that recruitment into CNA apprenticeship programs was "ridiculously hard" because of the safety concerns in long-term care facilities in the early years of the pandemic. CNAs did receive more substantial pay increases during the pandemic in the grantee's state, which grant staff believe improved recruitment (but not retention) in the apprenticeship program. Staff reported that the major obstacles to retention for CNA apprentices were low levels of "soft skills," which caused some apprentices to be unprepared for their job, and unmet child care needs. To address those needs, the grant project did incorporate soft skills training into the CNA apprenticeship but was unable to fully meet participants' child care needs with grant funds.

Chapter 7: Employer Engagement

Because employers hire apprentices, pay their wages, and commit to developing their technical skills through OJT from mentors and RTI, their buy-in to apprenticeship is essential to expansion efforts. For this reason, a key Scaling Apprenticeship and Closing the Skills Gap grant activity was employer engagement to expand existing apprenticeship programs and develop new programs, both registered and unregistered. We begin this chapter by summarizing grantees' employer engagement targets and how they fared in pursuit of those targets. Next, we describe grantees' employer outreach staffing and partnerships. We then examine recruitment strategies and messaging, including grantees' use of incentives to encourage employers to adopt apprenticeships. The chapter is based mainly on the 18 grantee site visits that included interviews with grantees and employer partners. It is supplemented with Quarterly Performance Report data. See box 7.1 for key takeaways.

BOX 7.1

Chapter 7 Key Takeaways

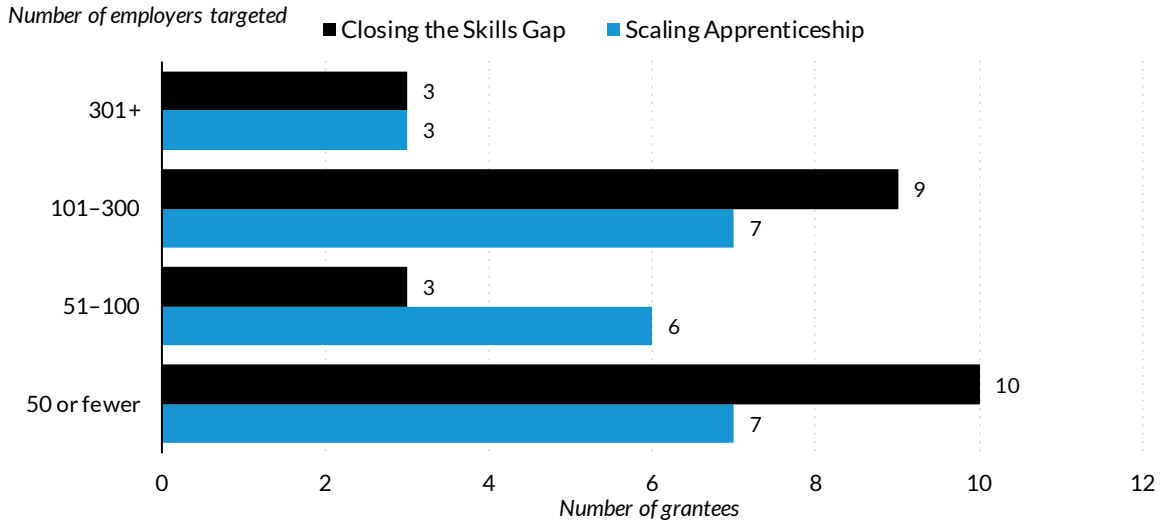
- Grantees across both grant programs engaged 8,343 employers, slightly more than 100 percent of their collective target.
- Site visit grantees engaged workforce agencies, partner colleges, associations, workforce intermediaries, nonprofit groups, and existing apprenticeship operators to recruit employers.
- Site visit grantees described flexibility in recruitment strategies as paramount to employer recruitment, and thus adopted multiple strategies, ranging from websites and social media to one-on-one meetings.
- Site visit grantees' recruitment messages included that apprenticeship addresses talent needs, builds on existing training practices, and is flexible and adapted to employer needs, and grantees and partners can minimize design and implementation burdens.
- Eleven of 18 site visit grantees used incentives to engage employers.

Employer Engagement Goals and Outcomes

Collectively, grantees across both grant programs planned to engage 8,230 employers. Grantees focused on health care occupations planned to recruit fewer employers than grantees focused on advanced manufacturing or IT. Twelve Closing the Skills Gap grantees and 10 Scaling Apprenticeship grantees planned to engage more than 100 employers (figure 7.1).

FIGURE 7.1

Grantees' Target Number of Employers Engaged by Grant Type



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Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one grantee reporting as of December 31, 2023.

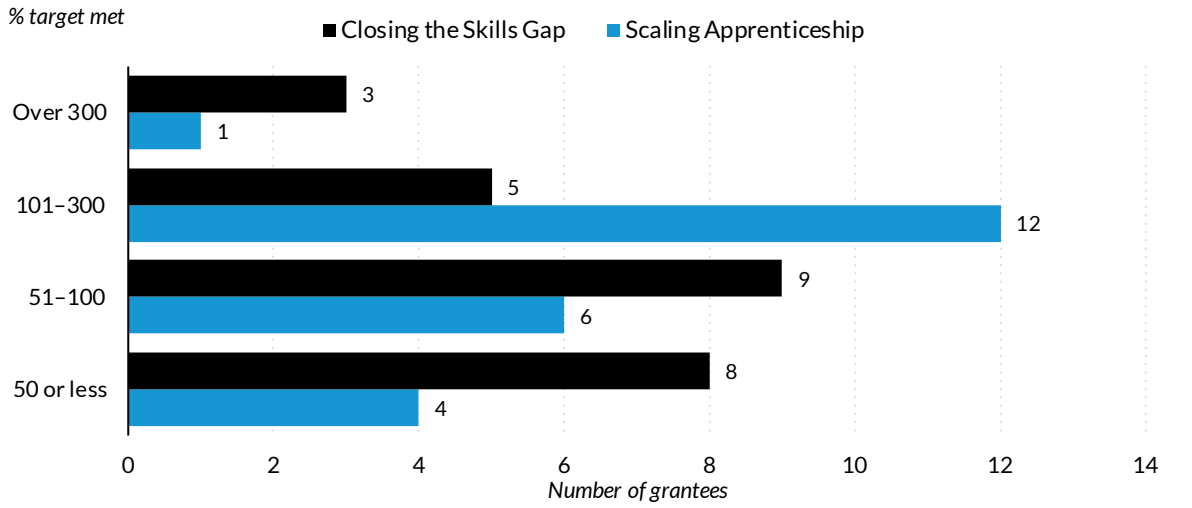
Note: Scaling Apprenticeship (n = 23); Closing the Skills Gap (n = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus, the March 24, 2024, QPRs reflect most of their grant periods.

Collectively, grantees engaged 8,343 employers, or slightly more than 100 percent of their targets. As of March 31, 2024, a larger number (and share) of Scaling Apprenticeship grantees had exceeded their targets (13, or 57 percent of Scaling Apprenticeship grantees) than had Closing the Skills Gap grantees (8, or 32 percent of Closing the Skills Gap grantees) (figure 7.2). Four Scaling Apprenticeship grantees (17 percent) engaged 50 percent or less employers than their respective targets, compared to 8 Closing the Skills Gap grantees (32 percent).

As described in chapter 2, COVID-19-related closures occurred a month after DOL awarded Closing the Skills Gap grants, thus delaying implementation of many grant activities, including employer engagement. However, the pandemic also affected Scaling Apprenticeship grantees' ability to continue grant activities. Of the 12 grantees across both grant programs that met 50 percent or less of their target, seven shared a focus on IT occupations, advanced manufacturing occupations, or both. Three of the four Scaling Apprenticeship grantees that met less than 50 percent of their target focused on IT, and

the fourth focused on advanced manufacturing. One Closing the Skills Gap grantee focused on advanced manufacturing, and four targeted IT and advanced manufacturing.[45]

FIGURE 7.2
Percentage of Employer Engagement Target Met by Grant Program



URBAN INSTITUTE

Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one grantee reporting as of December 31, 2023.
Note: Scaling Apprenticeship (*n* = 23); Closing the Skills Gap (*n* = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus, the March 31, 2024, QPRs reflect most of their grant periods.

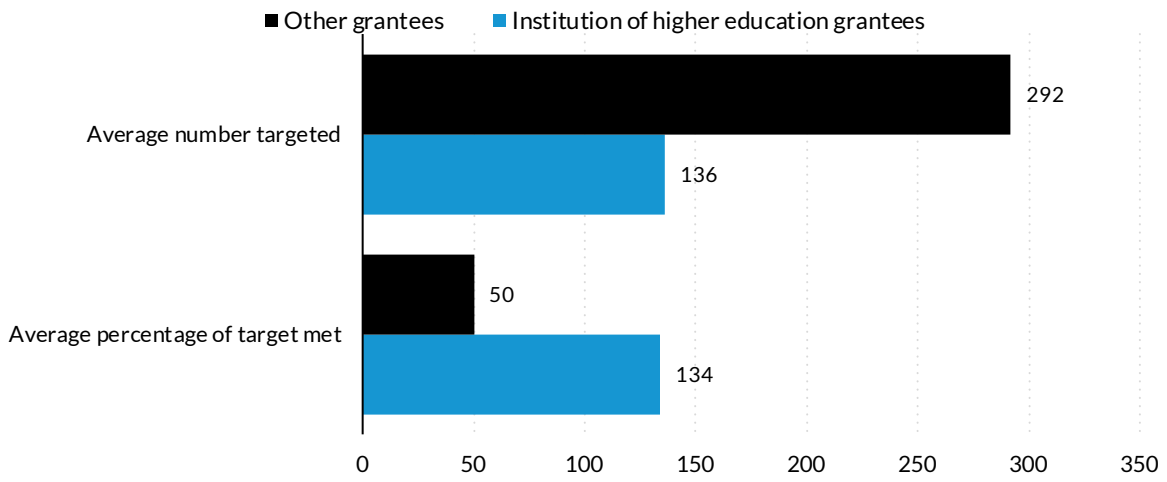
IHE and non-IHE grantees also differed in terms of engagement goals and proportion of targets met (figure 7.3). IHE grantees proposed to recruit a smaller number of employers, on average, than did non-IHE grantees (136 versus 292, respectively). IHE grantees met their recruitment targets—the average grantee recruited 134 percent of its target—whereas non-IHE grantees met 50 percent of their targets, on average.

It is not clear why IHEs fared better than non-IHE grantees with employer recruitment. We can speculate that IHE grantees set more realistic targets. Another potential explanation is that IHE grantees engaged a larger array of recruitment partners to help them meet their targets. The next section describes recruitment activities.

[45] The evaluation of the American Apprenticeship Initiative found that recruiting IT employers was challenging. One grantee focused on recruiting employers in the IT sector that participated in a pilot to test employer engagement strategies found that it had to engage a broader range of employers in different industries that hired staff for IT occupations, not just IT-specific companies (Trutko et al. 2022).

FIGURE 7.3

Average Employer Engagement Targeted and Met by Grantee Type



URBAN INSTITUTE

Source: Quarterly Performance Reports (QPRs). Data reported as of March 31, 2024, except for one Closing the Skills Gap grantee (as of December 31, 2023).
Note: Scaling Apprenticeship (*n* = 23); Closing the Skills Gap (*n* = 25). Twenty Scaling Apprenticeship and 14 Closing the Skills Gap grantees continued grant activities beyond March 31, 2024, and 12 Closing the Skills Gap grantees had periods of performance ending in February 2025, almost a year after these data were collected. The last Scaling Apprenticeship grants closed in July 2024; thus, the March 31, 2024, QPRs reflect most of their grant periods.

Employer Recruitment Activities

The 18 site visit grantees implemented an array of strategies to engage employers that took their target industries, geography, and partners into account. Grantees identified internal staff to lead or facilitate employer outreach. But partners also played a key role in employer recruitment. This section describes how grantee staff and partners collaborated to recruit employers.

Dedicated Grantee Staff

In site visit interviews, grantees described a range of grant-funded staff roles. Examples of job titles included regional business liaison, employer engagement specialist, project coordinator, and grant program manager.

Columbus State Community College and San Jacinto Community College had grantee and subgrantee dedicated employer recruitment staff at the grantee and partner colleges. Columbus State and partner Collin College had full-time grant-supported employer engagement specialists. These staff

built lists of employers, using leads acquired through chambers of commerce, employer lists and referrals from campus partners, and employers that contacted the college and expressed interest in work-based training. The specialists then emailed employers with information about the colleges' IT offerings generally and the apprenticeship programs specifically. Similarly, San Jacinto Community College funded a project coordinator to spearhead employer recruitment and supported the same position at its partner, Austin Community College.

Other IHE grantees with grant-funded employer engagement staff were the University of Cincinnati (one employer recruitment specialist), Bergen Community College (two regional business liaisons), Dallas College (six relationship managers), and Oakland Community College (an apprenticeship coordinator). IHE grantees also relied on regular, non-grant-funded staff to recruit employers. For example, Pennsylvania College of Technology used eight dedicated Apprenticeship Center staff to conduct employer outreach.

Membership organization grantees Argentum, H-CAP, and the Missouri Chamber Foundation used staff to recruit employer members. For example, the Missouri Chamber Foundation grant director, in conjunction with other grant staff, hosted webinars for its 1,000 members, providing attendees a one-page apprenticeship description and an employer question-and-answer guide. Through the webinars, the grantee aimed to interest its members in apprenticeship as well as encourage them to sell apprenticeship more broadly to other employers in their industries.

Engaging Partners

The previous chapter described partners involved in apprentices' recruitment. Many of the same partners helped recruit employers. The 18 site visit grantees identified workforce agencies, other colleges, associations, workforce intermediaries, nonprofit organizations, and current employer collaborators as key employer engagement partners (table 7.1). Examples of each partner type are given in the following paragraphs.

Workforce agencies. Grantees described a range of roles for state and local workforce partners. Oakland Community College's primary employer recruitment partner was Southeast Michigan Community Alliance (SEMCA)–Workforce Intelligence Network (WIN)—a partnership of community colleges and six Michigan Works! agencies (the local AJCs). Business service staff in each of the six Michigan Works! agencies engaged existing employer partners and new employers to promote apprenticeship as a workforce solution. West Los Angeles College's primary employer recruitment partner was the South Bay Workforce Investment Board. Ivy Tech, a statewide community college

system, worked closely with the Indiana Office of Work-Based Learning and Apprenticeship, within the Indiana Department of Workforce Development, which is responsible for overseeing AJCs. The grantee collaborated with state and local workforce staff to identify and recruit employers by state region. The Idaho State Board of Education referred interested employers to the state Department of Labor to discuss apprenticeship requirements, including the potential to join a group program.

Partner Colleges. Seven grantees described partnerships with college business liaisons and employer engagement staff: six IHEs and one union. As noted above, two IHE grantees (Columbus State Community College and San Jacinto Community College) funded employer recruitment staff at their partner colleges (Collin College and Austin Community College, respectively). Bergen Community College's two regional business liaisons connected employers to 14 community college partners. Additionally, each college's success coach collaborated with the college's business liaisons to recruit employers locally. The Illinois Community College Board had 10 community college partners. Marketing to and recruiting employers was the responsibility of each college's workforce director, and Jobs for the Future provided technical assistance and coaching on employer recruitment to college directors and staff (see nonprofit partners below). In another example, the Idaho State Board of Education worked with five colleges to recruit employers, two of which sponsored apprenticeships. Oakland Community College engaged other colleges in the service area, including Macomb Community College. The non-IHE grantee that collaborated with colleges—the AFL-CIO Working for America Institute—partnered with five IHEs to help identify employers.

Associations. As noted above, three grantees were industry associations that relied on their members for employer engagement activities. Five other grantees that were not industry associations partnered with industry associations to recruit employers. For example, the Wireless Infrastructure Association[46] collaborated with the Power & Communication Contractors Association.[47] Grantee staff said they used presentations to organizational members as a targeted method for educating many employers about the potential of apprenticeship. The Dallas County Community College District worked with the American Society for Health Care Human Resources Administration[48] to identify employers. The University of California–Davis collaborated with the National Electrical Contractors Association.[49]

Three grantees engaged their local chambers of commerce to promote apprenticeship to employers. For example, the University of Cincinnati partnered with its local chamber of commerce to

[46] See Wireless Infrastructure Association, accessed June 23, 2025, https://wia.org/.
[47] See Power & Communication Contractors Association, accessed June 23, 2025, https://www.pccaweb.org/.
[48] See American Society for Health Care Human Resources Administration, June 23, 2025, https://ashhra.org/.
[49] See National Electrical Contractors Association, accessed June 23, 2025, https://www.necanet.org/.

disseminate information about apprenticeship to its members generally and to the 30 members that participate in its IT roundtable specifically.

TABLE 7.1

Employer Recruitment Partners Reported by Grantees During Site Visits, 2022–23

Workforce agencies	Partner colleges	Associations	Intermediaries
▪ State Department of Labor and local workforce development councils (*Idaho State Board of Education)* ▪ Indiana Dept. of Workforce Development Office of Work-Based Learning and Apprenticeship *(Ivy Tech)* ▪ SEMCA-Win—Michigan Works! Macomb/St. Clair; Michigan Works! Genesee-Shiawassee-Thumb; Oakland County Michigan Works *(Oakland Community College)* ▪ South Bay Workforce Investment Board *(West Los Angeles College)* ▪ East Connecticut Workforce Investment Board (*Connecticut State Colleges and Universities)*	▪ 14 community colleges *(Bergen Community College)* ▪ 10 partner colleges *(Illinois Community College Board)* ▪ Collin College (*Columbus State Community College)* ▪ Austin Community College *(San Jacinto Community College)* ▪ 5 partner colleges *(Idaho State Board of Education)* ▪ 3 community college partners (*West Los Angeles College)* ▪ 5 institutions of higher education *(AFL-CIO)* ▪	▪ Power & Communication Contractors Association *(Wireless Infrastructure Association)* ▪ Chamber of Commerce *(AFL-CIO, University of Cincinnati)* ▪ Machinists Institute *(AFL-CIO)* ▪ American Society of Healthcare Human Resources Administration (*Dallas County Community College District)* ▪ International Brotherhood of Electrical Workers and National Electrical Contractors Association *(University of California–Davis)*	▪ Hamilton-Ryker TalentGro and Trilogy and Life Point *(Argentum)* ▪ Keystone Development Partners (*AFL-CIO*) ▪ Nonprofit Organizations ▪ Jobs for the Future *(AFL-CIO, Illinois Community College Board)* ▪ Institute for American Apprenticeship *(West Los Angeles College, Wireless Infrastructure Association)* ▪ Existing Employer Partners ▪ 7 employers (*Missouri Chamber Foundation*) ▪ 6 employers (*AFL-CIO*) ▪ 5 employers (*San Jacinto Community College*) ▪ Existing employer partners (*Connecticut State Colleges and Universities*) ▪ Active employer partners (*Columbus State Community College)*

Source: Site visit interviews.

Intermediaries, nonprofit groups, and existing employers. For example, Argentum subcontracted with three intermediaries, including Hamilton-Ryker TalentGro, a staffing agency that helps employers develop workforce solutions, to recruit and onboard employers. Two grantees (the Illinois Community College Board and AFL-CIO) worked with the nonprofit Jobs for the Future to train staff on employer outreach. Box 7.2 summarizes the technical assistance provided to the Illinois Community College Board.

Finally, five grantees included key employer partners in their grant applications who assisted newly recruited employers. For example, Connecticut State Colleges and Universities included large defense contractors in its grant application focusing on advanced manufacturing. The Missouri Chamber Foundation included seven IT employers in its application, including Oracle; these employers not only sponsored apprenticeship programs but helped other new employers navigate the apprenticeship development process. Similarly, San Jacinto Community College included five employer partners in its grant application, including IBM and Lockheed Martin, while the AFL-CIO named six employers. Although the employer partners named in the applications anchored the apprenticeship programs, each grantee continued to recruit new employers as part of its grant activities.

BOX 7.2

Technical Assistance to Market Apprenticeship

Jobs for the Future provided technical assistance to the Illinois Community College Board's 10 partner colleges responsible for recruiting employers, including how to market apprenticeship to the identified target audience. The marketing steps include these:

Determine what your audience needs. Employers need strategies directly connected to hiring needs and growth goals.

Develop a message. A primary message is that apprenticeship gives employers access to a sustainable pipeline of talent.

Create outreach strategies that encourage employers to take tangible steps. For example:

- Use email to introduce employers to the college's program and describe how it can be beneficial. A tangible employer step: Watch this video to see the experience of another employer.
- Use video to highlight an employer's positive experience and apprenticeship return on investment. A tangible employer step: Check out our website to learn more.
- Use a website to show more details about the program and answer initial questions. A tangible employer step: Call our program director to discuss apprenticeship.

Develop communications materials. Develop a "who, what, where, when, how, and why" detail of your program to consistently describe it across all methods of communication. Include a profile of existing employers.

Use multiple communications channels. Website, social media, email, word of mouth (from peers, community support), events, posters/flyers/news outlets.

Source: Andrea Messing-Mathie and Vanessa Bennett, "Marketing Apprenticeship: Communicating with Your Audience," PowerPoint presentation, Jobs for the Future.

Employer Recruitment Strategies

All site visit grantees said that employer recruitment strategies are flexible—that is, there is no one-size-fits-all approach—and thus they implemented multiple strategies. The AFL-CIO grantee that relied primarily on partners to recruit employers summarized its partners' recruitment strategies as follows: "everything under the sun," including industry association meetings, networking events, and collaborating with workforce system partners and chambers of commerce. Recruitment methods can build on each other. That is, more passive methods, like social media posts, can lead to initial discussions about apprenticeship as a workforce training model and ultimately result in meetings to design and implement programs. In this section, we describe the range of recruitment strategies grantees used to recruit employers. Practices covered a spectrum from low intensity (e.g., websites) to high intensity (one-on-one engagement).

Use websites and social media as a recruitment tool. Three grantees described their websites as helpful recruiting tools, used in tandem with other strategies. Staff at Oakland Community College's primary employer recruitment partner, SEMCA-WIN, noted, "I don't have to recruit because employers come to me" via the hotline and the contact portal on the website. The Ivy Tech website[50] and Wireless Infrastructure Association website[51] provide information about available apprenticeship programs and include links where employers can request additional information (e.g., Ivy Tech's website suggests employers "set up a free consultation").

Another employer recruitment method involved distributing information about apprenticeship widely through social media (an Argentum partner strategy), email blasts, and radio advertisements (an Illinois Community College Board and Oakland Community College strategy). As noted above, the Illinois Community College Board's partner, Jobs for the Future, trained college staff on how to craft a "who, what, where, when, how, and why" message about the grantee's program to consistently describe it across all methods of communication.

Convenings. Grantee recruitment strategies also engaged more than one employer at once, presentations at industry association conferences, summits, and accelerator events. For example, the Wireless Infrastructure Association's partner, the Power Communications Contractors Association, hosts two annual industry events where they "expose potential employers to apprenticeship" through presentations, staffing booths, and advertising supports available to employers interested in

[50] See "Apprenticeships: A Win-Win for Students & Employers," Ivy Tech Community College, accessed June 16, 2025, https://www.ivytech.edu/programs/special-programs-for-students/apprenticeships/.
[51] See "Build Your Workforce with Registered Apprenticeship," Telecommunications Industry Registered Apprenticeship Program, accessed June 16, 2025, https://www.tirap.org/.

apprenticeship. H-CAP, Illinois Community College Board, and Oakland Community College host small-group convenings, including accelerator events[52] that bring together employers, industry representatives, and other workforce partners to promote and speed up adoption of apprenticeships. For example, Oakland Community College partner Macomb Community College hosts breakfasts that include presentations by the local workforce board, the college, and at least one employer that operates an apprenticeship program. Similarly, the Illinois Community College Board hosted an employer roundtable for current sponsors and posted it on the college's website and YouTube channel.

One-on-one communication. All site visit grantees engaged in one-on-one meetings—in person or virtually—either as an initial outreach strategy or as a follow-up to earlier communication (e.g., a conference presentation, cold call, or website inquiry). As Bergen Community College staff noted, "We do it old school," that is, recruit employers via phone calls, adding, "It has been very successful that way." The college contacts long-term care facilities and hospitals in the catchment areas of its 14 partner colleges. San Jacinto Community College and partner Austin Community College use a similar strategy to approach employers. Project coordinators at each college use internet platforms to narrow the list of potential employers for outreach. San Jacinto Community College uses ZipRecruiter[53] and LinkedIn[54] to identify companies with IT openings that could be interested in apprenticeships as a way to fill positions, while Austin Community College uses Crunchbase (a computer application that helps connect tech employers, potential employees, and educational institutions). Staff set up one-on-one meetings with interested employers to describe hallmarks of apprenticeship and how apprenticeship can help employers establish a pipeline of skilled workers. Additionally, the Missouri Chamber Foundation identifies potential employers for outreach by scanning newspapers for "companies doing interesting things," recognizing that many technology

BOX 7.3: WIRELESS INFRASTRUCTURE ASSOCIATION (WIA) EMPLOYER RECRUITMENT PROCESS

- The first contact is information gathering. What is apprenticeship? What is WIA? The employer must understand what an apprenticeship is and WIA's role in it.
- The next step is to discuss how apprenticeship fits, what the openings are, what the benefits are. Staff includes the return-on-investment models that are available on apprenticeship.org and statistics on retention. They revisit where the employer is at and understand how ready they are to adopt apprenticeship. Do they need it? What do they need? What is the scope of the work, and what is the potential?
- From that point on, the employer could/may be overwhelmed, so staff have 15-minute conversations regularly and talk through the concerns and clear up misconceptions about apprenticeship.

Source: Site visit interviews, summer 2023.

[52] See "Apprenticeship Accelerators," US Department of Labor, accessed June 16, 2025, https://www.apprenticeship.gov/sites/default/files/apprenticeship-accelerators-facstsheet.pdf.
[53] See ZipRecruiter, accessed June 23, 2025, https://www.ziprecruiter.com/.
[54] See LinkedIn, accessed June 23, 2025, https://www.linkedin.com/.

companies are not part of the Chamber of Commerce and would not hear about grant activities through chamber-related webinars and other events.

All grantees stated that the number of meetings needed to sell apprenticeship varies according to the employer and its knowledge of apprenticeship. As H-CAP staff noted, "Sometimes it takes many, many, many conversations." Discussions with an employer new to apprenticeship might start with "Apprenticeship 101," that is, an overview of the basics of apprenticeship with an explanation of why it is a good workforce training model. Conversations with employers familiar with the training model might focus on how apprenticeship can build on their existing training practices.

Grantees used different approaches to one-on-one engagement. For example, Argentum's recruitment partner, Hamilton-Ryker, begins conversations with potentially interested employers with a Zoom call that covers the apprenticeship model, why it works, what starting a program involves, and funding opportunities. West Los Angeles College's partner, the South Bay Workforce Investment Board, engaged employers one-on-one using a sales perspective: sell the product, overcome concerns, and "close the sale," which requires persistence and an "ability to think on your feet." In their conversations with employers, staff do the following: Simplify the language and minimize jargon use; present graphically pleasing material; identify how apprenticeship can "wrap around," or formalize, the employer's current training practices; and encourage them to start with one occupation. The Wireless Infrastructure Association also used a sales approach (box 7.3).

Highlight experiences of employers operating apprenticeship programs. Finally, grantees engaged current apprenticeship program operators in efforts to sell apprenticeship to other employers in their industries. For example, H-CAP and Oakland Community College invited current apprenticeship sponsors to discuss their programs at recruitment events. As H-CAP staff noted, "I think that employers resonate differently from just hearing from us."

The Missouri Chamber Foundation developed manufacturer testimonial videos as recruitment tools. Grant staff noted, "Manufacturers will listen to other manufacturers more than [the grantee]. Show them a success story." Ivy Tech staff concurred: "Manufacturers are going to listen to other manufacturers." Two Ivy Tech employer partners had "friendship programs" that recruited 45 to 50 employers to hear about the grant. Columbus State Community College staff reported, "Our best success around recruitment and outreach, whether it was bringing new employers to the table or new students to the table, was hearing from peers." The grant director added that when peer employers share their experiences and success "that is influential to other employers who are discerning whether they want to get involved."

Employer Recruitment Messaging

Grantees used various messages to convey the value of apprenticeship to employers as well as address misperceptions about the training model. This section first describes messages grantees used to encourage employers to adopt apprenticeship. It then summarizes grantees' use of incentives as a recruitment strategy.

Messaging

Grantees noted that successful messaging includes focusing on employers' talent needs, describing how apprenticeship aligns with their current training practices, emphasizing that models are flexible enough to work in different settings, and highlighting the range of assistance available to help employers design and implement programs.

Message 1: "You need talent." All 18 site visit grantees mentioned using some form of "apprenticeship addresses talent needs" in their recruitment activities. Grantees' recruitment messaging, although varying in specifics, focused on apprenticeship to fill workforce gaps. The Missouri Chamber Foundation summarized the staffing challenge as follows: "Everywhere you turn, everyone seems to be hurting on staffing." Bergen Community College staff noted that to interest an employer in apprenticeship "you need to have something they need. Then you need to show them how the apprenticeship program will add value and address their challenges," adding, "it's going to be a pipeline for you."

The Idaho State Department of Education also messaged apprenticeship as a way to address workforce shortages in rural areas. Grant staff explain that rural schools "are really excited" about registered apprenticeship programs for their students because the programs "keep the talent in town instead of having kids leave right after they finish high school."

> **"We want our employees to grow and want to invest in our employees" as well as "impact turnover and be a more attractive employer in our recruiting efforts."**
>
> *—Employer affiliated with Argentum grantee*

Grantees noted that employer hiring needs stem not only from current and projected growth but from impending retirements and that apprenticeship is a potential solution to both. An AFL-CIO partner described the need for employers to account for retirements in staff planning: "There's an old saying that when a person dies, a library burns to the ground. They take all that knowledge with them. And it's

the same thing when you have a workforce … when they leave, if they haven't transferred that knowledge, everybody misses an opportunity. And that's what registered apprenticeship programs do." Oakland Community College staff concurred: "Employers are realizing that they have to secure institutional knowledge." They added, "It's about educating the employer and usually afterwards they jump on board." The Idaho State Board of Education described a similar message: Upskilling the current workforce helps employers "find a path to be able to train an individual for a position in which someone will be retiring in a year or two."

> **"We were growing and there was a gap in the market for skilled machinists. Our skilled machinists were tenured and getting close to retiring. We weren't finding people with the skills we needed."**
>
> *—Advanced manufacturing employer affiliated with Oakland Community College grantee*

Grantees also described apprenticeship as a way to build career pathways within a company. As noted above, the discussion of promoting staff from within can occur as part of planning for retirements. So, too, can providing advancement opportunities to incumbent workers generally. The Wireless Infrastructure Association described one employer that was good at training but not at laying out a pathway for advancement. The grantee collaborated with the employer to design and implement an apprenticeship program. Per the employer: "[The apprenticeship program] gives employees a career pathway and holds us accountable to training them."

> **"I've worked in a production role, and I was a supervisor. I understand computer skills are necessary, and I know a lot of our production floor employees and they would like to move up."**
>
> —Employer affiliated with the Illinois Community College Board grantee

Message 2: "You are already doing it." When marketing apprenticeship to employers, West Los Angeles College's recruitment partner identified how apprenticeship can "wrap around," or formalize, the employer's current training practices. Similarly, the Wireless Infrastructure Association's message to potential employers is that they are already doing something similar, and they need to "just formalize it, make some improvements," adding, "the leap from how you train to apprenticeship isn't that big." The project coordinator noted for the particular occupation:

> *There are a lot of courses that are must-haves because you need safety training. There is no way you can work on the equipment without the training. A lot of it is already documented—that's what we stress. It's just how you do your OJTs, and there might be some RTI you're not*

meeting, but having that comfort level puts employers at ease … you have to talk at the level of people in the field, saying, "You are a supervisor, so we see you as a mentor, and it's informal but we rely on you and are investing in and developing you as a leader."

Message 3: "Apprenticeship is flexible." According to Illinois Community College Board staff, the RTI flexibility its partner colleges offered employers, specifically around class time and curriculum, was a primary selling point. Staff noted that the message that stood out to employers was, "If you have an IT need, we can provide training to help you provide that. The message was all you have to do is give us employees to train. That message resonated with them."

Similarly, Pennsylvania College of Technology marketed its proprietary advanced manufacturing RTI and OJT package as a flexible option for employers. An employer affiliated with the grantee described its interest in professional development opportunities for staff but could not send employees to a training program or school because most worked full-time during the week. Pennsylvania College of Technology staff visited the employer and described how the apprenticeship program could provide staff development via apprenticeship opportunities on-site.

The Missouri Chamber Foundation partners collaborated with employers to customize programs. Partners would "pull down a work process schedule as an example" of what apprenticeship looks like and highlight areas of employer input. The message was, "You can actually have the worker that you want if you take the time to invest in their learning."

Finally, Oakland Community College described collaborating with an employer to shorten an apprenticeship program to better meet the employer's needs. The grantee's recruitment partner promoted a four-year advanced manufacturing apprenticeship program to a potential employer. Although other employers operated the four-year program, the recruitment partner said, "the employer couldn't spend four years training an apprentice so [we] worked to reduce the length of the program to 18 months." The recruitment partner added that the shorter program still covered sufficient material: "When you actually looked at what [the employer] was trying to do, it could reasonably be done in 18 months." Oakland Community College and its partners also hosted RAPID (Registered Apprenticeship Program in a Day) workshops to talk through the employers' questions and develop their Standards of Apprenticeship.

Message 4: "Grantee staff and partners can minimize employer burden." In addition to offering a flexible training model, grantees reduced employers' burden by taking on tasks that employers would need to do. According to an AFL-CIO partner, "We try to take as much work off of their hands as

possible because we know that they're running a business … we really try to make it as easy for them as possible."

As described above, grantees implemented practices to help potential employers design programs, including drafting apprenticeship standards. Two grantees encouraged employers to sign on to group apprenticeship programs rather than designing and registering their own programs. For example, an AFL-CIO recruitment partner, Keystone Development Partners, promoted group sponsorship as a way to reduce employer burden:

> *When we met with employers, sometimes they are small, sometimes they were big, but a lot of them said, "We just don't have the capacity to run a program like this." I don't know how many times I got horse-collared by an HR manager going out the door after doing an informational session, saying, "If this program comes here, I'm going to be responsible for it, and I don't have time to do the work that I do. So, if it's up to me, it's not going to happen."*

> *That is why we really went out and talked to the folks who became group sponsors to say hey, look, can you become involved in this? Because there is an important role for you to play in this registered apprenticeship ecosystem. And that actually went over very well. We were able to get employers involved in the registered apprenticeship program who said they didn't have the capacity to do their own.*

Similarly, an Idaho State Board of Education grantee partner's recruitment message focused on colleges as sponsors, particularly when meeting with small employers and those in rural areas: "Group sponsorship can be a way to take the burden off their plate." Employers are not responsible for developing and registering programs.

> **"I started this apprenticeship program primarily because I got tired of hiring people and having to untrain them. I wanted to build lifetime employees that are career-oriented, not just looking for a job. Instead of finding employees, let's build employees."**
>
> *—Employer affiliated with Idaho State Board of Education grantee*

West Los Angeles College reported that its recruitment partners promoted unregistered apprenticeships because employers were more receptive due to less paperwork. The grant administrator added that unregistered apprenticeships allow for more generalized training for employees, which some employers saw as a benefit: "While registered apprenticeship is tied to jobs, unregistered apprenticeship is tied to credentials to learn fundamentals of a basic skill set." The

administrator also noted that unregistered apprenticeships "create an opportunity for employers to test the model of apprenticeship."

> **"When I'm meeting with employers, I try to be very clear about [our expectations] up front. I don't want our employer partners to be disappointed in what they're receiving, so I'm very intentional about that communication and setting those expectations."**
>
> *—Staff at Columbus State Community College grantee*

Grantees reported using similar messages to address employer concerns about apprenticeship, including misperceptions. Table 7.2 summarizes common employer concerns and examples of grantee responses.

TABLE 7.2

Examples of How Grantees Address Employer Concerns

Concern	How grantees address
Lack of familiarity with apprenticeship, including assumptions about union involvement	Importance of transferring knowledge. Introduce to employers operating programs in same industry. Benefit of upskilling current workforce and finding untapped talent.
Loss of autonomy	Employers can customize programs.
Programs too long	Employers can customize programs.
Does not want the government in their business	Educate employers. Introduce to employers operating programs in same industry.
Too busy to start a program	Encourage employers to sign on to a group program. Grantee develops standards.
Too much paperwork	Encourage employer to join group program. Help grantees develop and register programs.
Does not understand the apprenticeship return on investment	Describe apprenticeship benefits in terms of the specific employer.

Source: Site visit interviews.

Promoting Incentives

Offering incentives to employers was "a huge strategy," according to an Oakland Community College recruitment partner. Eleven site-visited grantees provided various incentives, including reimbursement for RTI, offsets of mentor wages, funding to start programs, and supportive services (see table 7.3).

- Four grantees reported reimbursing employers for some or all RTI costs. The amounts ranged from $500 to $600 (Argentum) to $1,650 (San Jacinto Community College). Pennsylvania College of Technology focused grant activities generally on expanding use of its proprietary related instruction and on-the-job learning package. As such, the cost of training was heavily discounted (employers paid at most 35 percent of the cost) or free if the employer used a cohort model.
- Six grantees reported using incentives to offset the cost of OJT. For example, San Jacinto Community College provided $1,150 per apprentice for training expenses.
- Three grantees reported using incentives to encourage small employers to start apprenticeships. The University of Cincinnati, for example, offered a $4,800 per apprentice wage supplement for small employers. The Illinois Community College Board reimbursed 50 percent of wages for small employers.
- Two grantees reported using incentives for supportive services. Argentum, for example, provided $1,000 per apprentice to cover supportive services costs.
- Two grantees reported ways to embed flexibility into incentives. The Dallas County Community College District provided $20,000 to employers that started apprenticeship programs and $10,000 to employers that expanded programs. The funds covered employers' mentor expenses, as well as costs associated with paperwork. Oakland Community College left incentives up to the discretion of its subgrantees. Each received $55,000 to incentivize employers to start or expand apprenticeships.

TABLE 7.3

Examples of Grantee Use of Employer Incentives

Grantee	Amount and use
Argentum	$500–$600 per apprentice to reimburse RTI expenses; $1,000 per apprentice for supportive services.
Connecticut State Colleges and Universities	$1,150 per apprentice to reimburse RTI expenses; $1,000 per apprentice for OJT offset for apprentices at small employers (employers with less than 50 employees) and $100 per apprentice for support services.
Dallas County Community College District	$20,000 for creating apprenticeships, $10,000 for expanding apprenticeships, $150 per apprentice for completing apprenticeships. Funds cover hospitals' mentor expenses, paperwork costs.
Healthcare Career Advancement Program (H-CAP)	$1,000 per apprentice.
Illinois Community College Board	50% wage reimbursement to employers if small business.
Missouri Chamber Foundation	$800 (for established employers) or $1,400 per apprentice (for new employers) to support RTI costs.
Oakland Community College	$55,000 to each subgrantee to incentivize employers to start/expand programs (subgrantees determined amounts and uses).
Pennsylvania College of Technology	Employers are responsible for at most 35% of the cost of apprenticeship; employers have no costs if the grantee provides training to a cohort.
San Jacinto Community College	$1,650 per apprentice to defray costs of RTI; $1,150 per apprentice for technical and soft skills training. For smaller employers (less than 50), an OJT wage offset is available when an employer hires the third apprentice under the program; employers can request $9,000 ($3,000 per apprentice). Subsidy is a selling point used with smaller employers to encourage involvement with apprenticeship.
University of Cincinnati	$4,800 per apprentice for small employers for apprentice wage supplement.
West Los Angeles College	Grant funds reimburse employer up to a certain cost share of OJT (including materials and mentoring).

Source: Site visit interviews.
Note: OJT = on-the-job training; RTI = related technical instruction.

Chapter 8: Conclusions

For the past decade, DOL has invested in expanding apprenticeships to nontraditional occupations, such as health care, IT, and advanced manufacturing, and to all Americans. The Scaling Apprenticeship and Closing the Skills Gap grant programs are two such investments. In 2019 and 2020, DOL awarded almost $284 million to 51 grantees across the two programs. All Scaling Apprenticeship grantees and more than half of Closing the Skills Gap grantees were IHEs, including both community colleges and state higher education systems. IHEs' educational mission, active student population, and infrastructure shaped the design of their grant-supported apprenticeship programs and participant experiences. Grantees could use grant funds to implement registered and unregistered programs (within certain parameters) and could either develop new or expand existing programs. Scaling Apprenticeship grantees could support pre-apprenticeship programs with grant funds.

This implementation study describes the grantee activities and program components they implemented. It reports on the characteristics of grantees and their programs and their apprentices, how they approached apprentice recruitment and retention, and how they engaged employers. It describes what grantees and their partners report as promising strategies for increasing apprenticeship opportunities in nontraditional occupations.

In this concluding chapter, we first describe the key implementation study findings. We then discuss the implications for efforts by DOL and others to expand apprenticeship to nontraditional occupations.

Review of Findings

The key implementation study findings are these:

- **Many institution of higher education grantees leveraged their position in the postsecondary education sector to recruit student populations and provide classroom instruction (related technical instruction, or RTI) on-site before connecting apprentices with employers.**

Across both grant programs, 37 grantees were IHEs. The IHE site visit grantees said that they had built-in access to a pool of candidates. These grantees also recruited participants from noncredit workforce training programs on their campuses. Finally, IHE grantees provided classroom training on-site and could (and did) offer RTI before employers hired apprentices.

Differences between IHE and non-IHE grantees appeared at the grant application stage. IHE grantees collectively proposed to enroll more participants than apprentices, reflecting their expectation of some drop-off between enrollment into grant-funded services and being hired as an apprentice, potentially because some participants might determine after taking classes that they had no interest in the occupation or would rather follow a different occupational pathway (e.g., a health care degree program rather than an apprenticeship). On average, IHEs proposed lower apprentice-to-participant target ratios than non-IHE grantees (77 percent versus 99 percent for other grantee organization types), suggesting as a model they expected to serve more participants than apprentices with grant services. In fact, out of the 37 IHE grantees, 24 had apprentice-to-participant ratios lower than 80 percent as of December 31, 2023. Both facts are consistent with targeting a broad group, with grantees interviewed reporting that some participants do not progress to apprenticeships due to lack of interest or personal reasons, while others who begin an apprenticeship would not have known about the opportunity or met the requirements without some services (Ruggiero and Payne, forthcoming).

- **Grantees created and expanded apprenticeship programs in nontraditional occupations, with IT the most common industry.**

Twenty-eight of the 48 grantees included in the analyses implemented IT programs. The next most common occupational category was advanced manufacturing (22 grantees), followed by health care (12 grantees). The distribution of occupations was similar for the 62 apprenticeship programs described by 18 grantees during site visits.

Across the two grant programs, as of March 31, 2024, grantees had implemented 3,318 new apprenticeship programs and expanded 1,813 existing apprenticeship programs. Scaling Apprenticeship and Closing the Skills Gap grantees collectively exceeded both their new and expanded program targets. The 62 programs described by grantees during the site visits provided additional details about 18 grantees' activities.

Grantees that created new apprenticeship programs could design their own programs, but they needed to recruit employers to sponsor or partner with the new program and develop the Standards of Apprenticeship if the program was registered. Expanding existing apprenticeship programs did not involve program design or registration paperwork but still required grantees to recruit sponsors (or have existing employers take on more apprentices) and to address their needs. Recruitment of sponsors was important for both new programs and expanded ones.

- **More grantees supported registered apprenticeship programs than unregistered programs, but the two program types shared many characteristics employers described as important.**

Overall, grantees and employers valued both registered and unregistered apprenticeship programs. Of the 48 grantees included in the analyses, 44 supported registered apprenticeship programs and 32 supported unregistered programs. Most grantees (27 out of 48) supported both registered and unregistered programs. Seventeen grantees enrolled apprentices solely in registered programs and three grantees solely in unregistered programs.

The unregistered and registered programs described during site visits shared many characteristics. Most of both types of program measured skill development through the demonstration of competencies in specific skills (69 percent of registered programs and 53 percent of unregistered ones). Registered programs were longer, on average, than unregistered programs (3,489 hours versus 2,908 hours), but the difference was not statistically significant. The average unregistered program exceeded the minimum hours required of registered programs by regulation (2,000 hours).

Grantees and employers said that one benefit of unregistered programs was avoiding the time and resources associated with program registration. However, unregistered programs needed to demonstrate measurable skills gains and produce recognizable credentials to be valuable. One employer reported that it did not care whether a program was registered if the marketplace accepted the credential earned. Other grantees, though, reported that intermediaries, industry associations, and workforce partners involved with these two grant programs helped them design and register programs, thus making registered programs more attractive and the registration process easier for employers.

- **A larger share of apprentices in the two grant programs were women, Black, or Asian relative to registered apprentices nationally.**

A larger proportion of apprentices were men than women in both the grant programs and in registered apprenticeship programs nationally, but the proportion of women apprentices in the two grant-supported apprenticeship programs we studied is more than twice their proportion in registered programs nationally. The proportion of grant-supported apprentices identifying as "Black, non-Hispanic" was also higher than the national average, as was the proportion identifying as Asian. These sex, race, and ethnicity statistics likely reflect the grants' greater focus on nontraditional industries and occupations and weaker focus on male-dominated traditional apprenticeships in construction occupations.

- **Collectively, grantees engaged 8,343 employers to participate in apprenticeships and used similar strategies for recruitment, regardless of occupational sector. Grantees that used incentives reported they were helpful in recruiting employers.**

In site visits, grantees reported messages that resonated with employers included the need for talent, that apprenticeship builds on existing employment and training practices, that apprenticeship programs are flexible, and that grantees and partners can minimize the burden of implementing an apprenticeship program. Eleven of the 18 site visit grantees described incentives to employers, with one describing them as "a huge strategy" for recruiting employers. Grantees provided incentives to offset the cost of RTI and mentor training time, for supportive services, and to encourage small employers to start programs.

Implications for Apprenticeship Program Operators and Policymakers

The Scaling Apprenticeship and Closing the Skills Gap grantee implementation study findings suggest implications for DOL and funders of future apprenticeship grant programs, as well as apprenticeship program operators. Presented with multiple allowable apprenticeship training options detailed in the grant funding announcements, grantees implemented different combinations of programs and activities. This flexibility recognizes that employers have varying goals for their workforce training activities and hiring needs, and that potential participants also seek a variety of options. Grantees also reported how different program dimensions helped expand apprenticeships in several occupational areas. This section presents program dimensions (or typologies) that merit further testing and potentially replication.

- **Grantees used the flexibility afforded by the grant funding announcements to implement registered and unregistered programs. However, unregistered programs supported by grants had to meet five specific criteria related to OJT, RTI, and wages and thus shared certain characteristics with registered programs, with implications for interpreting impact study findings and for federal support for unregistered programs in the future.**

It is important to note that the Funding Opportunity Announcement for both grant programs set out required elements for apprenticeship programs, regardless of whether they were registered or unregistered (paid employment, OJT and mentorship, RTI, an industry recognized credential, and safety and supervision procedures). Thus, the unregistered programs supported by the two grant programs are not necessarily comparable to all unregistered programs that call themselves "apprenticeships" but do not incorporate the required elements. For example, the unregistered programs that were implemented, on average, exceeded the 2,000-hour OJT minimum required of registered

apprenticeships. The findings suggest that employers and grantees ensured that their new or expanded unregistered programs met basic specifications that are akin to those of registered programs.

- **Grantees' experiences suggest that unregistered apprenticeship may be more appropriate for expansion of apprenticeship in IT and advanced manufacturing than in health care.**

Health care employers affiliated with the site visit grantees predominantly adopted registered apprenticeship programs. It could be that certain aspects of health care occupations, such as licensure requirements, make apprenticeships in health care more suitable to registration. Occupations in construction with a long history of participation in the registered apprenticeship system may similarly be better suited to registered programs or simply more comfortable with the registered system. Employers in advanced manufacturing or IT programs, however, favored unregistered programs according to site visit grantees. Future grant programs might consider the occupational focus when providing flexibility to register or not register programs.

- **Different types of grantee organizations have unique attributes that help in reaching program goals. DOL may want to fund a mix of grantee organization types in the future, including IHEs.**

As organizations, IHEs bring unique institutional structures to apprenticeship. As described in Ruggiero and Payne (forthcoming), some participants, after taking classes, may decide that they are not interested in the occupation or that they wish to take a different occupational pathway (e.g., a health care degree program rather than an apprenticeship). And although employers hire apprentices, IHE grantees can create a pipeline of candidates in apprenticeship and non-apprenticeship programs that the employer might not otherwise access. For example, such grantees may be in a position to help improve candidates' chances of success in obtaining an apprenticeship by providing additional training or services. IHEs can offer, and fund through their grants, pre-training options (e.g., remedial math or English) or pre-apprenticeships that a non-IHE grantee might not be able to offer.

- **Varied employer recruitment messages and strategies recognize employers' varying motivations to adopt apprenticeship.**

There is no one-size-fits-all sales approach to employer engagement. For example, some employers adopted apprenticeship to build career pathways within their organizations and to prepare for staff retirements. Others recognized they needed a new way to recruit and retain staff. Some employers created new programs to reflect their specific needs, while others signed on to existing programs.

Grantees that offered incentives described them as a powerful way to interest employers in trying apprenticeship as a workforce training model.

Appendix

This appendix has tables that show the grant characteristics of all the Scaling Apprenticeship and Closing the Skills Gap grants and more detailed characteristics of the 18 grants with which the study did site visits

TABLE A.1

Grantee Target Focus Industries and Apprenticeship Models

Grantee (state)	Target industries	Apprenticeship program models (% apprentices in registered programs)
Scaling Apprenticeship Grantees		
Alabama Community College System (AL)	Advanced manufacturing	Registered and unregistered apprenticeships (9%)
Bergen Community College (NJ)	*Health care*	*Registered apprenticeships (100%)*
Colorado Department of Higher Education (CO)	Health care	Registered and unregistered apprenticeships (63%)
Columbus State Community College (OH)	*IT*	*Primarily unregistered apprenticeships (1%)*
Community College of Baltimore County (MD)	Health care	Registered apprenticeships (100%)
Connecticut State Colleges and Universities (CT)	*Advanced manufacturing*	*Registered and unregistered apprenticeships (30%)*
County College of Morris (NJ)	Advanced manufacturing	Registered apprenticeships (100%)
Dallas County Community College District (TX)	*Health care*	*Primarily registered apprenticeships (98%)*
Florida International University Board of Trustees (FL)	IT	Registered and unregistered apprenticeships (66%)
Illinois Community College Board (IL)	*IT*	*Registered and unregistered apprenticeships (20%)*
Lorain County Community College (OH)	Advanced manufacturing	Registered and unregistered apprenticeships (36%)
Miami Dade College (FL)	IT	Registered and unregistered apprenticeships (71%)
Pennsylvania College of Technology (PA)	*Advanced manufacturing*	*Registered and unregistered apprenticeships (66%)*
Pima County Community College District (AZ)	Advanced manufacturing	Primarily unregistered apprenticeships (2%)
Purdue University (IN)	IT	Registered and unregistered apprenticeships (8%)
St. Louis Community College (MO)	Advanced manufacturing	Registered and unregistered apprenticeships (32%)
San Jacinto Community College District (TX)	*IT*	*Registered and unregistered apprenticeships (52%)*

Grantee (state)	Target industries	Apprenticeship program models (% apprentices in registered programs)
State University of New York (NY)	Advanced manufacturing	Registered and unregistered apprenticeships (38%)
Trustees of Clark University (MA)	IT	Registered apprenticeships (100%)
University of Cincinnati (OH)	*IT*	*Unregistered apprenticeships (0%)*
Weber State University (UT)	IT	Registered apprenticeships (100%)
West Los Angeles College (CA)	*Advanced manufacturing*	*Registered and unregistered apprenticeships (44%)*
West Virginia Council for Community and Technical College Education (WV)	IT	Registered and unregistered apprenticeships (4%)
Closing the Skills Gap Grantees		
Aerospace Machinist Joint Training Committee (WA)	Advanced manufacturing	Registered apprenticeships (100%)
Alamo Colleges (TX)	Health care,	Unregistered apprenticeships (0%)
American Association of Port Authorities (VA)	IT, advanced manufacturing	Registered and unregistered apprenticeships (73%)
American Federation AFL-CIO Working for America Institute (DC)	*Advanced manufacturing*	*Registered apprenticeships (100%)*
Argentum (VA)	*Health care, IT*	*Registered apprenticeships (100%)*
Arizona State University (AZ)	advanced manufacturing, Health care, IT	Registered and unregistered apprenticeships (19%)
Arkansas Division of Higher Education (AR)	IT	Registered apprenticeships (100%)
Colorado Community College System (CO)	IT	Registered and unregistered apprenticeships (6%)
electrical training ALLIANCE (FL)	Electrical	Registered apprenticeships (100%)
Florida Alcohol and Drug Abuse Association	Health care	Registered apprenticeships (100%)
Goodwin College, Inc.	Advanced manufacturing	Registered and unregistered apprenticeships (5%)
Healthcare Career Advancement Program (H-CAP), Inc.	*Health care*	*Registered and unregistered apprenticeships (95%)*
Idaho State Board of Education (ID)	*Advanced manufacturing, health care, IT*	*Registered and unregistered apprenticeships (29%)*
Ivy Tech Community College of Indiana (IN)	*IT*	*Registered and unregistered apprenticeships (53%)*
Missouri Chamber Foundation (MO)	*IT*	*Registered apprenticeships (100%)*
North Carolina State University (NC)	IT	Registered and unregistered apprenticeships (42%)
Oakland Community College (MI)	*Advanced manufacturing*	*Registered and unregistered apprenticeships (89%)*
The Regents of the University of California (Davis) (CA)	*IT (cybersecurity)*	*Registered apprenticeships (100%)*

Grantee (state)	Target industries	Apprenticeship program models (% apprentices in registered programs)
The Regents of the University of California (Riverside) (CA)	Advanced manufacturing, IT	Registered apprenticeships (100%)
Society for Human Resource Management Foundation, Inc. (VA)	Multiple	Registered apprenticeships (100%)
Southern Utah University (UT)	IT, advanced manufacturing	Primarily unregistered apprenticeships (1%)
Southwest Tennessee Community College (TN)	IT	Unregistered apprenticeships (0%)
University of Louisville Research Foundation, Inc. (KY)	Advanced manufacturing, health care, IT	Registered and unregistered apprenticeships (7%)
Wireless Infrastructure Association (VA)	*IT*	*Registered apprenticeships (100%)*
Wisconsin Regional Training Partnership, Inc. (WI)	Advanced manufacturing, IT	Registered apprenticeships (100%)

Source: Grant application review, clarification calls with grantees, Quarterly Performance Report data as of March 31, 2024, except for Ivy Tech (December 31, 2023).
Note: Site visit grantees indicated in italics. IT = information technology.

TABLE A.2

Characteristics of Site Visit Grantees

Grantee (grant type)	Target industries	Target # of participants	% of target met	# new	# expanded	% new programs	% enrolled in registered programs
AFL-CIO Working for America Institute (CSG)	Advanced manufacturing	5,000	64	157	129	55	100
Argentum (CSG)	Health care	7,239	103	2	8	20	100
Bergen Community College (SA)	Health care	5,001	56	1	15	6	100
Columbus State Community College (SA)	IT	1,600	90	14	34	29	1
Connecticut State Colleges and Universities (SA)	Advanced manufacturing	3,500	106	23	30	43	30
Dallas County Community College District (SA)	Health care	7,500	99	27	83	25	98

Grantee (grant type)	Target industries	Target # of participants	% of target met	# new	# expanded	% new programs	% enrolled in registered programs
Healthcare Career Advancement Program (H-CAP) (CSG)	Health care	3,200	110	16	19	46	95
Idaho State Board of Education (CSG)	Advanced manufacturing, health care, IT	2,387	174	16	18	47	29
Illinois Community College Board (SA)	IT	1,728	173	71	47	60	20
Ivy Tech Community College of Indiana (CSG)	IT	3,200	151	202	271	43	53
Missouri Chamber Foundation (CSG)	IT	5,335	64	21	9	70	100
Oakland Community College (CSG)	Advanced manufacturing	3,200	107	262	151	63	89
Pennsylvania College of Technology (SA)	Advanced manufacturing	2,457	76	65	169	28	66
Regents of the University of California–Davis (CSG)	IT	5,183	47	0	1	0	100
San Jacinto Community College District (SA)	IT	5,000	104	194	16	92	52
University of Cincinnati (SA)	IT	6,715	143	861	240	78	0
West Los Angeles College (SA)	Advanced manufacturing	5,000	107	20	36	36	44
Wireless Infrastructure Association (CSG)	IT	5,500	50	0	7	0	100

Source: Scaling Apprenticeship (SA) and Closing the Skills Gap (CSG) grant applications.
Note: Data through March 31, 2024, with the exception of Ivy Tech (December 31, 2023). IT = information technology.

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About the Authors

Karen Gardiner is a senior fellow in the Workforce, Education, and Labor Division at the Urban Institute, where she directs evaluations of apprenticeships and other workforce training programs, including their implementation and effects on participants and employers.

Daniel Kuehn is a principal research associate in the Workforce, Education, and Labor Division at the Urban Institute, where his work focuses on registered apprenticeship and workforce development.

Pamela Loprest is a former senior fellow in the Tax and Income Supports Division at the Urban Institute.

Stephanie Petrov is a research analyst in the Work, Education, and Labor Division, where her research focuses on workforce development and postsecondary education.

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