

RESEARCH REPORT

Systems Change in Community Colleges: Lessons from a Synthesis of the Round 3 TAACCCT Third-Party Evaluation Findings

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Contents

Acknowledgments	i
Executive Summary	ii
1. Introduction	1
1.1. The TAACCCT Grant Program and Career Pathways	1
1.2. TAACCCT Evaluation Efforts	4
1.3. Synthesizing Round 3 Implementation Findings to Understand Systems Change in Community Colleges	7
2. Developing Career Pathways	9
2.1 Comprehensive Approaches to Career Pathways	10
2.2 Stacked and Latticed Credentials	12
2.3 Transfer and Articulation Agreements	14
2.4 Instructional Design	16
3. Supporting Adult Learner Success	19
3.1 Participant Recruitment Strategies	19
3.2 Use of Technology to Engage Students	26
3.3 Prior Learning Assessments for Veterans	29
3.4 Support Services for Participant Success	30
4. Engaging Employers	36
4.1 DOL's Employer Engagement Framework	36
4.2 Employers as Advisory Partners	38
4.3 Employers as Hands-On Partners	41
4.4 Employers as Strategic Partners	44
5. Encouraging Collaboration across Colleges	48
5.1 Implementation of Statewide Programs and Policies	48
5.2 Transfer and Articulation Agreements	50
5.3 Sharing Best Practices	52
5.4 Other Collaborative Efforts	55
6. Conclusion	59
6.1 How Did Grantees Change Systems to Better Serve Adult Learners	59
6.2 Implications for Future Community College and Workforce Initiatives	66
Appendix A. Workforce Innovation and Opportunity Act of 2014 (WIOA) Definition of Career Pathways	69
References	70
Statement of Independence	75

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Executive Summary

The Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant program was a \$1.9 billion federal workforce investment from 2011 to 2018. It sought to help community colleges across the nation increase their capacity to provide education and training programs for unemployed workers and other adult learners to prepare for in-demand jobs. This report is part of a series of publications from the TAACCCT national evaluation that spans the four rounds of the grants.¹ This report, a publication of the TAACCCT national evaluation, synthesizes the implementation findings from the 56 third-party evaluations from the Round 3 TAACCCT grants (October 2013 to September 2017) to better understand how the grants supported systems change in community colleges across the country.

The national evaluation builds evidence about the capacity-building strategies and career pathways approaches implemented by the grantees.² The national evaluation uses a mix of qualitative and quantitative methods to understand and assess the capacity-building strategies funded by the grant program to inform future federal workforce investments and policy. Its components include an implementation analysis, syntheses of third-party evaluation findings, an outcomes study, and an employer perspectives study (see box ES.1).

BOX ES.1

TAACCCT National Evaluation Components and This Report

- An *implementation study* (Rounds 1 & 2, Round 3, and Round 4) of the service delivery approaches developed and the systems changed through the grants based on a survey of colleges and visits to selected colleges
- *Syntheses of third-party evaluation findings* (Rounds 1 & 2, Round 3 (this report), and Round 4) to draw a national picture of the implementation of the TAACCCT capacity-building strategies and build evidence of the effectiveness of the strategies on participants' education and employment outcomes
- An *outcomes study* of nine Round 4 grantees using survey data and administrative records to better understand the characteristics of TAACCCT participants, their service receipt, and their education and employment outcomes
- A *study of employer relationships* with selected Round 4 employer-partners to better understand employers' perspectives on how to develop and maintain strong relationships with colleges

¹ All publications from the TAACCCT national evaluation are available on DOL's Chief Evaluation Office website, found at <https://www.dol.gov/agencies/oasp/evaluation/completedstudies>.

² For the purpose of the national evaluation, career pathways approaches to workforce development offer a sequence of articulated education and training programs in an industry sector, combined with support services, to enable individuals to enter and exit at various levels and to advance over time to higher skills, recognized credentials, and better jobs with higher pay.

This report presents a synthesis of the implementation findings from the Round 3 third-party evaluations, for which grantees procured third-party evaluators as part of their grant-funded projects. It addresses a key research question of the national evaluation: *what service delivery and/or system reform innovations were implemented to help improve employment outcomes and increased skills for participants?* The report focuses on the capacity-building activities the Round 3 grantees implemented to support “systems reform innovations” or “systems changes” within and across institutions to provide education and training to adult learners leading to high-demand jobs. Capacity-building activities that colleges undertook to change their systems could involve developing career pathways, providing supports for adult learners, engaging employers as strategic partners, and collaborating across colleges, shown below in figure ES.1. These capacity-building activities are well-represented in the Round 3 grants, as DOL encouraged these strategies in the grant announcement.

FIGURE ES.1

Four Categories of Capacity-Building Activities Implemented by TAACCCT Grantees

Developing Career Pathways	Supporting Adult Learner Success	Engaging Employers	Encouraging Collaboration across Colleges
<ul style="list-style-type: none"> • Comprehensive approaches to career pathways • Stacked and latticed credentials • Transfer and articulation agreements • Instructional design 	<ul style="list-style-type: none"> • Participant recruitment strategies • Use of technology to engage students • Prior learning assessments for veterans • Support services for participant success 	<ul style="list-style-type: none"> • Employers as advisory partners • Employers as hands-on partners • Employers as strategic partners 	<ul style="list-style-type: none"> • Implementation of statewide programs and policies • Transfer and articulation agreements • Sharing best practices • Other collaborative efforts

Background

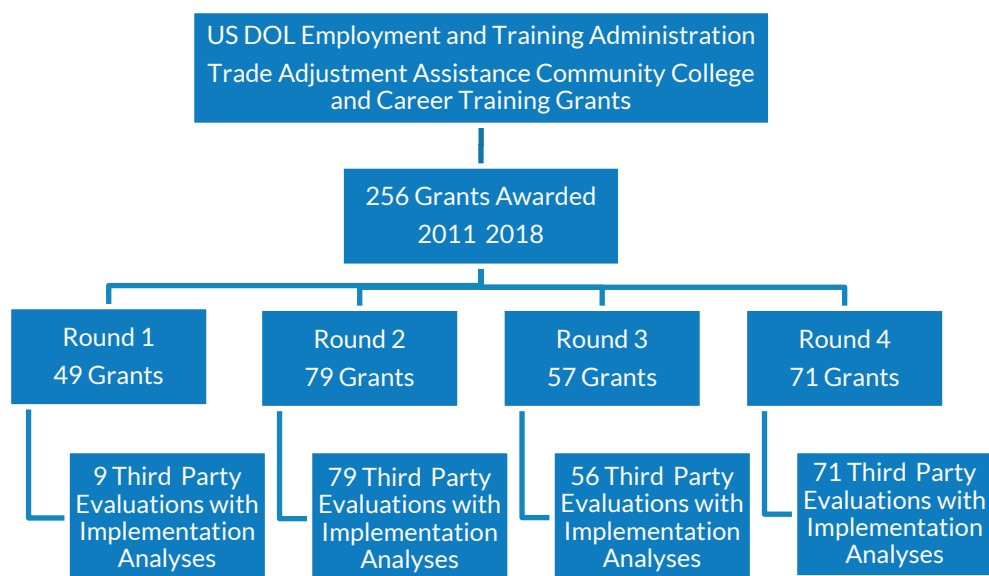
The TAACCCT grant program had two major evaluation efforts: the national evaluation and the grantee-sponsored third-party evaluations. In addition to funding the national evaluation, DOL also required Rounds 2-4 grantees to procure third-party evaluators as part of their grant-funded projects.³ A key component of the national evaluation is synthesizing the findings from the third-party evaluation findings to develop an understanding of the career pathways approaches and systems innovation that were implemented and to assess their impact on participants’ educational attainment and employment outcomes.

³ DOL also encouraged Round 1 grantees to use grant funds to engage an independent third-party evaluator to design and conduct an evaluation of their grant projects.

This report presents the implementation findings from the 56 Round 3 third-party evaluations.⁴ Figure ES.2 shows the number of grants awarded in each of the four rounds and the third-party evaluations that included implementation analyses for each round. All Rounds 2-4 evaluations included implementation analyses, per the grant requirements. However, only a subset of the Round 1 grantees (nine of the 49 grants) had third-party evaluations as it was not required. All grantees that had evaluations included implementation analyses as a part of their design. Fifty-six (56) evaluations are included in the Round 3 implementation synthesis.

FIGURE ES.2

Grants Awarded and Third-Party Implementation Evaluations Across All Rounds of the Grants



Source: Urban Institute’s review of the third-party evaluation reports across all rounds.

Note: One Round 3 grant ended before the end of the period of performance so there are 56 instead of 57 third-party evaluations with implementation analyses. Only nine Round 1 grantees had third-party evaluations as it was not required.

The following summary highlights the implementation findings from the synthesis of the third-party evaluations on Round 3 grantees’ capacity-building activities using these categories. It then presents implications for future community college and workforce initiatives that plan to support community colleges’ efforts to improve their systems for adult learners.

⁴ While there were 57 Round 3 grantees, only 56 evaluation reports were submitted.

Developing Career Pathways

The Round 3 grantees and their partner colleges developed career pathways using a combination of strategies. In creating the TAACCCT grant program, the U.S. Departments of Labor and Education sought to help community colleges and other postsecondary institutions develop training programs that accelerated pathways to good jobs for adult learners, while simultaneously meeting the needs of employers for a skilled workforce.⁵ The grant announcements across the rounds emphasized the development and use of career pathways to help adult learners earn credits toward a degree and shorter-term industry-recognized credentials along the way and step in and out of education and training for employment and other life circumstances without losing ground. Some grantees implemented comprehensive approaches to career pathways, where career pathways served as a framework guiding the grant activities. Grantees also implemented elements of career pathways, such as stacked and latticed credentials, transfer and articulation agreements, and instructional design, which linked the steps of a pathway together for participants. The key findings from the third-party evaluations are:

Developing Career Pathways

- Comprehensive approaches to career pathways
- Stacked and latticed credentials
- Transfer and articulation agreements
- Instructional design

- **Grantees used a comprehensive approach to developing career pathways and implemented a combination of strategies.** According to the evaluations, about half of the 56 grantees created well-articulated education and training steps, from short- and long-term certificates to two- and four-year degrees that supported participants' advancement in an industry. They developed career pathways that included multiple elements such as stacked and latticed credentials, transfer and articulation agreements and policies, and instructional design elements that support accelerated learning and persistence and completion. They also often included elements that support participants in career pathways, such as assessments, career coaching, access to support services, employer engagement, and ongoing coordination with key partners. Five evaluations of grantees implementing comprehensive approaches to career pathways used the word “transform” to describe the changes these grantees were trying to accomplish within their institutions.
- **Collaboration with stakeholders during career pathways planning, such as industry groups and employers and other colleges implementing similar programs, appeared to help align curricula and credentials with employers' desired skills.** Planning, especially in collaboration with various stakeholders, played a key role in the development of comprehensive approaches to career pathways. These grantees redesigned existing programs to implement career pathways, including implementing policies and practices that would allow students to access the courses they need to advance along those pathways. Four grantees used a “mapping” process to embed essential skills and certifications in previously existing occupation training programs. Career pathway maps showed progression from certificate to bachelor's degree and included associated job titles and salary ranges for each credential.
- **Grantees indicated that employer engagement was needed for developing stacked and latticed credentials.** To ensure that career pathways included the skill sets and credentials

⁵ For information on career pathways from the Round 3 grant announcement, see https://doleta.gov/grants/pdf/taaccct_sga_dfa_py_12_10.pdf.

needed by employers, three grantees involved employers in discussions around curriculum content. Grantees generally held these discussions during the pathway planning process. Some employers and industry organizations worked directly with grantees on curriculum development and others reviewed curricula. Four grantees also worked with employers to establish the industry certifications needed to enter into an industry and advance to higher-paid positions in that industry.

- **Evaluations attributed improved educational outcomes for participants that took advantage of stacked and latticed credentials.** Three evaluations made a connection between development and use of stacked and latticed credentials and observed improvements in educational outcomes for participants. According to these evaluations, other elements of the grant activities could support participants' efforts to earn stacked and latticed credentials, such as the use of career navigators.
- **Grantees implemented new or expanded existing transfer and articulation agreements as part of their efforts to create and enhance career pathways.** Forty-nine grantees developed transfer and articulation agreements including agreements across two-year colleges, agreements with specific four-year institutions, and state- or region-wide agreements. For grantees that offered non-credit programs, they implemented policies to bridge those programs to credit-bearing programs in the same occupation or industry. This allowed participants receiving certificates from non-credit programs to move into for-credit programs without repeating coursework. Two evaluations linked colleges' transfer and articulation efforts to participants' advancement to degree programs.
- **Grantees created "roadmaps" to show participants how programs, courses, and credentials mapped to more advanced steps on a career pathway.** Two grantees developed roadmaps for transfer and articulation across programs within a career pathway. This included establishing a curriculum and articulation subcommittee to create a certificate and degree articulation map showing how grant-funded program credentials articulated to degrees. Another approach was creating "roadmaps" that compared learning outcomes semester by semester across colleges, which could be used for prior learning assessments.
- **Grantees designed core curriculum to help build participants' foundational knowledge and skills and supported the creation and enhancement of career pathways when connected to more advanced steps.**⁶ Twelve grantees worked with consortium member colleges to develop "core curriculum" for foundational knowledge and skills allowed grantees to use the same introductory courses for a variety of related occupations as a first step on a career pathway. Standardizing core curricula across colleges in a metro area, state, or region helped facilitate transfer and articulation across and along career pathways, but allowed grantees to update course content and materials according to industry changes simultaneously.
- **New technology and online components to programs of study was perceived as supporting accelerated learning and access to programs for participants.** Thirty-two grantees used online learning or supports for participants. This included developing or using instructional software that allowed participants to remotely access classrooms and physical lab environments for course assignments.
- **Other instructional design strategies, including modularized courses and competency-based education components, were less common instructional design strategies.** Twenty grantees

⁶ Core curriculum developed basic knowledge, skills, and abilities that are common across a related set of occupations. Courses that teach core curriculum are often the introductory or first courses in a program.

implemented modularized courses that break down skills typically taught across a semester course into smaller, more focused “modules.” The grantees indicated that individuals could master specific key concepts one at a time and progress sequentially to more difficult content using a competency-based format. Twelve grantees used a competency-based education design, which was perceived to allow students to progress through programs at their own pace, mastering key concepts one at a time and spending more time and receiving assistance on more challenging content.

Supporting Adult Learner Success

Grantees used a variety of approaches to support adult learners. Strategies included recruitment and engagement strategies, use of technology to engage students, and development of prior learning assessments to provide credit to veterans for their military experience. Grantees also provided an array of support services to foster student success. Falling along a continuum, these approaches ranged from individualized supports through dedicated staff or case management or wraparound approaches to more integrated approaches that “bundled” resources across partners to support adult learners in a proactive manner. The key findings from the third-party evaluations are:

Supporting Adult Learner Success

- Participant recruitment strategies
- Use of technology to engage students
- Prior learning assessment for veterans
- Support services for participant success

- **Targeted outreach and marketing efforts by grantees involved dedicated recruitment specialists and coordinated recruitment strategies across partners to reach veterans.** Six grantees used dedicated project staff to prioritize recruitment and engagement with veterans on campus. Grant-funded positions could include the veteran’s service coordinator, the career mapping specialist, and a student services specialist. Thirty grantees implemented recruitment strategies to reach veterans in their communities, using personalized approaches that were coordinated with veteran organizations and the public workforce system and linking them to programs and services, with project staff leading these efforts.
- **Grantees used multiple strategies and built relationships on and off campus to recruit veterans.** Project staff connected with campus-based veteran affairs office or initiatives; they visited veteran-focused organizations to make personal connections and create a referral and support pipeline. Additional strategies included providing materials and information to service organizations, attending or making presentations at veteran-focused events.
- **Grantees used tailored marketing messages and recruiters to reach adult learners affected by economic conditions.** Six grantees created marketing tools to target adults affected by economic conditions, such as dislocated workers or TAA-eligible workers. In addition, six grantees hired a dedicated recruiter for adult learners, while others made use of recruiters already available at the college.
- **Grantees leveraged connections with the public workforce system to reach TAA-eligible or dislocated workers and unemployed or underemployed individuals.** Eighteen grantees also reached out to state and local workforce development partners to identify and recruit TAA-eligible and dislocated workers and unemployed or underemployed adults and create program linkages. Grantees also conducted presentations to staff at American Job Centers. However,

over the course of the grant period, the number of TAA-eligible workers declined nationwide, making recruitment more difficult. Five grantees indicated that they were unable to recruit TAA-eligible workers, despite their outreach efforts.

- **Grantees conducted targeted outreach to recruit women, minorities, rural residents, and individuals with low basic skills.** Nine grantees made concerted efforts to diversify participants enrolled in the grant-funded programs by reaching out to women and minorities through special initiatives and targeted marketing campaigns. For example, two grantees sought to address barriers to participation for women in information technology.
- **Use of specialized educational software and online resources enhanced remediation and basic skills training, academic planning, and tutoring for adult learners.** Eighteen grantees used online tools to support remediation and basic skills training, including contextualized learning. These strategies included basic skills refresher modules or other tools to support remediation. Nine grantees used technology to support career and academic planning and five provided online tutoring to help participants succeed in their coursework.
- **Technology was used as a tool for supporting student learning and helping grantees to reach more students and scale-up efforts.** Seven grantees used technology for self-paced, skill-based learning to make learning more accessible to students such as incumbent workers. Others made remote learning accessible for rural participants through online learning platforms. Grantees also created enhanced classroom environments using technology, specialized software and digital tutoring, that benefited participants. But some perceived challenges existed due to participant access to computers and computer skills. A few grantees found that rural participants had limited internet access and broadband service, hindering participation in classes. Others found that participants had varying levels of skill or technical aptitude with online learning platforms.
- **Use of prior learning assessments for veterans involved review of transcripts and faculty advising and institutional coordination.** Six grantees implemented prior learning assessment approaches for veterans by reviewing military transcripts or other tailored approaches. Four evaluations highlighted individual and institutional factors that may have inhibited full implementation of prior learning assessments. For example, returning veterans' career interests changing as they seek training and career opportunities and the prior learning assessments based on military experience did not apply to the new program of interest.
- **Grantees created or enhanced centers to provide an integrated or "bundled" set of services to support enrollment, persistence and completion, and employment.** Four grantees established grant-funded centers or support teams to provide access to a range of services to support persistence and completion and connections to employment. They typically included a counselor/advisor/case manager to work directly with participants, assess their needs, and coordinate services.
- **Dedicated staff, often working one-on-one with participants, provided counseling and advising as well as coordination of comprehensive, individualized support services to help participants persist in and complete their programs of study.** Ten grantees indicated that project staff worked one-on-one with participants from program intake to completion, addressing all aspects of the participant's experience and academic, personal, and career needs. Common supports were educational planning and advising, referrals to services (for tutoring,

testing, career services, counseling, and financial aid), assistance connecting to work-based learning or internship opportunities, career advising, ensuring job readiness, and assistance with job searches and placement.

Engaging Employers

The grant announcements emphasized employer engagement as component of the TAACCCT grant program (Mikelson et al. 2017). Institutionalizing employer engagement and the role of employers, especially in developing work-based learning opportunities and sector strategies, was a primary focus of the Round 3 grants, with the grant announcement calling for applicants to demonstrate employer engagement in the application process (p. 2).⁷ To date, there is evidence that TAACCCT has successfully encouraged grant-funded colleges to build and enhance relationships with employers (Scott et al. 2018).⁸ The evaluations show that many grantees were able to provide employers in the community with a pipeline of applicants who were trained for in-demand occupations, and grantees benefited from employers' expertise and investment in the programs of study. Regardless of the targeted industry, all grantees made some level of effort to engage employer partners. That level of engagement varied from less intensive, where employers were working in an advisory capacity, to more intensive strategic partners. The key findings from the third-party evaluations are:

Engaging Employers

- Employers as advisory partners
- Employers as hands-on partners
- Employers as strategic partners

- **Grantees engaged employers on advisory boards, asking them to provide feedback on labor market needs and partner surveys.** Nearly all grantees engaged employers using advisory boards. Participation in advisory committees and subcommittees provided employers an opportunity to offer insight into in-demand skills, training, and credentials needed in targeted industries and occupations. Two grantees involved employers as advisors in the planning stage. In addition, two grantees engaged employers by requesting their feedback via a partner survey or needs assessment to collect information on required skills, industry trends, and their experience partnering with grantees.
- **Grantees perceived that their efforts to engage employers as advisory partners helped them develop and adapt curriculum to reflect in-demand skills.** Five grantees highlighted how employers participated extensively in curriculum review, which led to improvements in colleges' program coursework by aligning curriculum with the needs of industry. Other grantees noted the importance of engaging employers as curriculum advisors. Grantees who did not incorporate employer input into curricula early enough in the grant period indicated that they suffered from a lack of employer buy-in regarding the skills participants could contribute.

⁷ For more information on the Round 3 requirements for third-party evaluations, see p. 2 in "Notice of Availability of Funds and Solicitation for Grant Applications for Trade Adjustment Assistance Community College and Career Training Grants Program" at https://doleta.gov/grants/pdf/taaccct_sga_dfa_py_12_10.pdf

⁸ See DOL 2016 brief, "TAACCCT is deepening employer engagement" at https://doleta.gov/taaccct/pdf/TAACCCT_Fact_Sheet_Employer_Engagement_10.21.2016.pdf

- **Employer advisory partnerships could be time-intensive but necessary for sustaining the partnerships.** Three grantees indicated that sustaining meaningful employer advisory partnerships was time intensive for project staff, who were tasked with organizing and facilitating meetings on a semi-regular basis. Advisory partners had to be engaged and convened frequently enough to provide up-to-date input given the evolving needs of industry. When grantees were not able to maintain consistent contact with their advisory partners due to staff turnover or other reasons, employer engagement suffered. In addition, slow project start-up and initial implementation delays at some of the colleges impeded the sustained engagement of employers as advisory partners.
- **Employer partners seemed to help increase participants' exposure to career opportunities and develop their technical skills.** One of the main ways employers contributed to the grant-funded projects was providing "hands-on" opportunities for participants to engage in career-oriented experiences, such as simulation labs and career exploration camps, and participating in work-based learning opportunities. Work-based learning experiences employers provided included on-the-job training, internship, and clinical (for healthcare) experiences. These opportunities were some of the most valuable parts of the program, according to participants.
- **Hiring an employment coordinator or community liaison appeared to enable grantees to more successfully engage businesses and other local partners as hands-on partners, leading to additional opportunities for participants.** Fourteen grantees hired an employment coordinator or community liaison as a staff member designated to forging relationships with businesses and other local partners. These grantees found that having a person on staff in this role helped develop more hands-on experiences with employer partners and allowed grantees to sustain those opportunities, by having a staff member responsible for keeping up the communication and engagement with the employer. However, a few grantees were concerned that using time-limited grant funds to support this position hindered the sustainability of the level of employer engagement under the grant.
- **Grantees faced perceived challenges in engaging employers to develop short-term work-based opportunities for some occupations.** Some employers playing a hands-on role found it difficult to provide internships due to the nature of the occupation. For example, in certain industries such as information technology, short-term, on-the-job training in a cybersecurity occupation could require background checks and other screening requirements that were not feasible for an employer. Internship opportunities could also be difficult to embed into the curriculum, particularly if employers anticipated that providing the opportunity will be particularly time- or resource-intensive. The potential financial commitment required for an employer to offer an apprenticeship opportunity was also a concern.
- **Employers who served as strategic partners provided various resources to the programs, including equipment, financial support for participants, and commitments to hire interns or graduates, making a tangible investment in programs' success.** Employers demonstrated their willingness to participate as strategic partners by making financial commitments, institutionalizing their investment in the programs in a way that was likely to last beyond the end of the grant period. Other ways that employers served as a strategic partner was to hire graduates of the grant-funded programs receiving training in their industry and donating equipment.

- **Employers involved as strategic partners in the design of grant-funded programs and credentials seemed to help participants complete programs with marketable skills.** Four grantees linked the involvement of employers in the design of the program and development of credentials to program graduates successfully finding employment upon completion of the program. Employers also worked in partnership with colleges to develop grant-funded programs where they could send their own workers to receive specialized training, using facilities, machines, and curriculum that were relevant to their industry.
- **Grantees brought employers into local and regional strategic workforce initiatives and partnerships.** At five grantees, project staff, regional employer associations, and other community-based organizations supported strategic partnerships by serving as intermediaries between the college faculty and employers. Two grantees collaborated with the public workforce system to ensure grant-funded programs were aligned with industry needs and connected to existing sector partnerships

Encouraging Collaboration across Colleges

Collaboration across colleges—grantees, their partner colleges, and other institutions of higher education—was a common activity across the grants. There were multiple ways in which colleges collaborated as a part of the grant-funded activities. Colleges were involved in the implementation of statewide programs and policies, developed transfer and articulation agreements between colleges, shared best practices, used logic models and theories of change to guide implementation, and used and shared data with their consortium partners. Nearly all the evaluations indicated that collaboration across colleges was enhanced as a result of the grant and pointed to collaboration with other colleges as critical to the success of their grant-funded projects. In particular, grantees felt that the consortium structure motivated colleges to work together by providing a forum for program designers and faculty to come together. The key findings from the third-party evaluations are:

- **Statewide efforts were largely focused on aligning curricula and programs of study, creating prior learning assessments, and leveraging existing transfer and articulation agreements.** Two grantees implemented statewide curriculum as a part of their grant projects. One extension of implementing statewide curriculum was ensuring credits could transfer across colleges. While most colleges in a consortium pursued prior learning assessments individually, three grantees had facilitated or were in the process of facilitating statewide prior learning assessment policies. Primary motivations cited for streamlining prior learning assessment policies were to recruit more veterans and to ensure the transferability of experiences and previous education into credits.
- **While transfer and articulation agreements were often difficult to negotiate and implement, grantees acknowledged that they were important for realizing project goals.** Three grantees sought to secure consortium-wide transfer agreements to make it as easy as possible for adult learners to participate in grant-funded programs. Some grantees already had articulation agreements in place with four-year universities before the start of the grant period, but many used their grant as an opportunity to establish new agreements. The most common type of articulation agreement created by grantees was a “2 + 2” agreement, meaning that once a

Encouraging Collaboration across Colleges

- Implementation of statewide programs and policies
- Transfer and articulation agreements
- Sharing best practices
- Other collaborative efforts

student completes an associate's degree at a community college, they can transfer to a four-year university as a junior bachelor's degree student.

- **Platforms for sharing best practices varied widely across grantees.** Thirty-one consortia organized regular meetings as a way to facilitate collaboration and communication between member colleges. Commonly, conference calls or in-person meetings were held monthly or quarterly between representatives of each college as a way to keep each other up-to-date on valuable information, to share progress, and to collaborate to tackle challenges. These meetings often led to individual colleges or entire consortia making improvements to their programming and were particularly useful for promoting collaboration between colleges with similar programs of study. Through conferences, faculty retreats, and other professional development opportunities, colleges shared best practices on a wide range of topics. Often, grantees used these opportunities to share expertise on the implementation of new technology or new learning strategies. Other approaches included developing innovative workgroup structures to delegate responsibility for program activities among the consortium colleges and using online trainings and repositories to circulate best practices among colleges.
- **Grantees leveraged their grant resources to share best practices with other grantees and colleges that did not receive grant funding.** To make effective coursework more widely available and avoid duplicating efforts, some grantees shared courses and curricula with other colleges. Two consortium grantees shared curricula across member colleges and colleges across the state who may not have received grant funding. At least one grantee looked to other grantees and non-TAACCT colleges to glean lessons learned and strategies for developing their programs. Three grantees also collaborated with other educational institutions beyond the consortia to support the sharing of best practices.
- **Grantees created detailed logic models or theories of change that enhanced the success of their programs by serving as a tool for guiding program implementation and evaluation or as a strategy for assessing fidelity to program design.** About half of grantees used logic models to guide their grant projects. Grantees typically developed logic models during the planning stages of their projects. Logic models provided grantees with a reference point to inform each stage of the project. Three evaluations highlighted the utility of logic models as a tool for internal accountability throughout the grant period.
- **Grantees used data mainly for program improvement and monitoring student progress and outcomes, but faced perceived challenges in accessing data.** Nearly all grantees used some type of data tracking system to document participant progress and outcomes, but only three grantees indicated that they put these data to use to engage in continuous cycles of program evaluation and improvement. Grantees also used data to track how students fared during and after completing their programs. Often the only way for grantees to gain access to student-level outcomes data needed to examine employment and wages was entering into formal data-sharing agreements with state workforce and higher education agencies. Some grantees attempted to secure these agreements, but only five indicated that they were successful. Those who did touted their agreements as major victories for their programs. Two grantees also experienced challenges with coordinating and reaching consensus across multiple colleges about sharing data, making it difficult to implement consortium-wide data sharing agreements.

Implications for Future Community College and Workforce Initiatives

The Round 3 TAACCCT grantees successfully supported system innovations in community colleges in many ways but challenges to implementing capacity-building activities occurred. What do the insights from the synthesis of evaluation findings mean for grantees of future community college and workforce initiatives and policymakers seeking to improve how community colleges serve adult learners? While the synthesis cannot provide causal evidence of capacity-building activities improving systems, this section uses evidence from the synthesis of implementation findings to present implications that are relevant for both future grantees and policymakers. The synthesis suggests the following:

- ***Embedding collaboration as a core element of an initiative appears to help community colleges' implement their capacity-building efforts.*** There are four broad groups of stakeholders the grantees engaged—departments and offices internal to the college, organizations external to the college (e.g., public workforce system and community organizations), employers and industry, and other institutions of higher education. For internal partnerships, grantees worked with other college departments and offices such as financial aid, academic support, and career services to provide support to adult learners. For some grantees, this included working with on-campus veterans services to recruit and support veterans in grant-funded programs. For external partnerships, grantees engaged the public workforce system and other community partners to recruit participants such as veterans, TAA-eligible and dislocated workers, and other adult learners and support student success through financial, personal, and career services. Employers played a crucial role in ensuring grant-funded programs were aligned with industry needs, providing resources for programs such as work-based learning opportunities and donations of training equipment, and providing strategic direction on program design and sector strategies. And, partnerships with other colleges happened in several ways – within a grant-funded consortium, with other community colleges across the state, and with four-year institutions. In particular, the consortium model promoted collaboration across colleges to develop career pathways, core curriculum, and policies and processes to support enrollment, persistence, and completion by adult learners.
- ***Creating a continuum of support for adult learners, from enrollment to the workforce, can strengthen colleges' capacity to ensure educational and workforce success.*** A few grantees created centers or support teams to help adult learners access a range of services to support persistence and completion and connections to employment from enrollment into the workforce. These efforts typically included a counselor/advisor/case manager to work directly with participants, assess their needs, and coordinate services. Having dedicated staff (career navigators, success coaches, student services specialists, completion or success coaches, advisors) for working with students seemed to be an important component to guiding participants throughout the program and helping them access supports on campus and in the community. Common supports provided by these staff were educational planning and advising, referrals to services (for tutoring, testing, career services, counseling, and financial aid), assistance connecting to work-based learning or internship opportunities, career advising, ensuring job readiness, and assistance with job searches and placement. Grantees also incorporated online tools and technology to help participants accelerate learning and complete their programs, including remediation and online instruction such as modularized courses and competency-based education.

- **Using comprehensive approaches to career pathways—including stacked and latticed credentials, transfer and articulation agreements, instruction redesign, supports for participants, and partnerships—appears to support improved educational outcomes for participants.** About half of the grantees developed career pathways that included multiple elements such as stacked and latticed credentials, transfer and articulation agreements and policies, and instructional design elements that support accelerated learning and persistence and completion. They also often included elements that support participants in career pathways and engage key partners like employers to ensure participants are prepared for in-demand jobs. Evaluations showed that certain components of career pathways like stacked and latticed credentials, transfer and articulation agreements, and supports using technology and dedicated staff contributed to participant success. These findings were consistent with those in the synthesis of the Round 3 third-party impact evaluation findings, where there were positive impacts of TAACCCT on participants’ educational outcomes from quasi-experimental analyses (Kuehn and Eyster 2020)
- **Providing more guidance and assistance can help grantees use various tools to assess their project’s implementation and improve their project throughout the grant period.** Grantees that developed logic models found them helpful for assessing implementation and ensuring the grant project stayed on track. In addition, grantees that used data to monitor participant success and adjust their programs and services to help those who may be struggling found this to be useful. However, not all grantees took these steps to monitor their projects or work with their evaluators to do so.
- **Embedding a formal role for the state education and workforce agencies in the grant project can help colleges develop data sharing agreements and create statewide policies and practices to support adult learners.** The involvement of state agencies in community college initiatives can be invaluable to supporting systems change. They can help develop policies (e.g., enrollment, financial aid, prior learning assessment) and support professional development and best practices across the state rather than change occurring in a more piecemeal fashion. But state agencies were not always involved in the grant projects and grantees especially struggled to connect with state agencies to access administrative records for students, especially wage records.

Replicating and improving on the strategies and experiences of the TAACCCT grantees across all rounds can inform future grant initiatives to build the capacity of community colleges to serve adult learners. A separate report synthesizing the Round 3 third-party evaluation impact findings focuses on participants’ educational and employment outcomes.⁹ A report synthesizing the Round 4 third-party evaluation findings will also examine systems change efforts by grantees, building on the findings from this report. Other publications from the national evaluation—a series of briefs providing an overview of the grant program, a synthesis of the Rounds 1 and 2 third-party evaluation findings, and reports examining the implementation of the Rounds 1 and 2 grants and the Round 3 grants—are also available. These reports are designed to support learning across the grant program to draw lessons and implications for future community college and workforce initiatives that support career pathways and capacity-building efforts at community colleges.

⁹ All publications from the TAACCCT national evaluation are available on DOL’s Chief Evaluation Office website, found at <https://www.dol.gov/agencies/oasp/evaluation/completedstudies>.

1. Introduction

The Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant program was a \$1.9 billion federal workforce investment. It was aimed at helping community colleges across the nation increase their capacity to provide education and training programs for unemployed workers and other adult learners to prepare for in-demand jobs. The US Department of Labor (DOL) administered the grant program from 2011 to 2018, in partnership with the US Department of Education.¹⁰ Across four rounds of grants, TAACCCT reached over 60 percent of the nation's publicly-funded community colleges and included at least one college from every U.S. state, the District of Columbia, and Puerto Rico in each round (Cohen et al. 2017).

To build a body of evidence on the strategies implemented by the grantees, the TAACCCT national evaluation uses a mix of qualitative and quantitative methods to understand and assess the capacity-building strategies and career pathways approaches funded by the grant program to help inform future federal workforce investments and policy. A key component of the national evaluation are the syntheses of the findings from the grantee-sponsored third-party evaluations. DOL required Rounds 2–4 grantees and encouraged Round 1 grantees to use grant funds to engage an independent third-party evaluator to design and conduct an evaluation of their grant projects. The third-party evaluations had to document and assess the implementation of capacity-building activities funded by TAACCCT and examine participants' educational and employment outcomes and impacts.

As a product of the national evaluation, this report synthesizes implementation findings across 56 grantee-sponsored Round 3 third-party evaluations to understand how colleges implemented capacity-building strategies to change and improve their systems.¹¹ All Round 3 third-party evaluations included implementation analyses, which this report uses to understand grantees' capacity-building activities. These activities included developing career pathways, supporting adult learner success, engaging employers and supporting sector partnerships, and encouraging collaboration across colleges. The report also provides implications for future community college and workforce initiatives that that plan to support community colleges' efforts to improve their systems for adult learners.

1.1. The TAACCCT Grant Program and Career Pathways

Congress authorized the TAACCCT grant program as part of the American Recovery and Reinvestment Act of 2009 to increase the capacity of community colleges to meet local and regional labor demand for a skilled workforce. The Health Care and Education Reconciliation Act, signed in March 2010, provided the grant program with \$2 billion in funding over fiscal years 2011–14, or approximately \$500 million

¹⁰ The seven years are federal fiscal years, from October 1, 2011 through September 30, 2018.

¹¹ DOL is releasing a separate report from the TAACCCT national evaluation that synthesizes the impact findings from 23 Round 3 third-party evaluations.

annually over four rounds of grants.¹² DOL funded 256 three- to four-year grants to institutions of higher education offering programs of study that could be completed in two years or less. The 57 Round 3 grants, the focus of this report, ended in September 2017.

The overarching goals of the TAACCCT grant program, as described in the Rounds 1–4 grant announcements¹³, are to:

1. better prepare the Trade Adjustment Assistance-eligible workers¹⁴ and other adults for high-wage high-skill employment or reemployment in growth industry sectors by increasing their attainment of degrees, certificates, diplomas, and other industry-recognized credentials that match the skills needed by employers;
2. introduce or replicate innovative and effective methods for designing and delivering instruction that addresses specific industry needs and leads to improved learning, completion, and other outcomes for Trade Adjustment Assistance-eligible workers and other adults; and
3. demonstrate improved employment outcomes for TAACCCT participants.

To achieve these goals, the grantees from all four rounds focused on developing and implementing career pathways approaches to build colleges' capacity for providing education and training to adult learners.¹⁵ *Career pathways approaches* to workforce development offer an articulated sequence of education and training programs focused on an industry sector, combined with support services, to enable individuals to enter and exit at various levels and to advance over time to higher skills, recognized credentials, and better jobs with higher pay.^{16, 17}

Across all four rounds, there are many strategies that grantees developed and implemented to build their capacity for providing education and training programs to adult learners as a part of career pathways. To better understand the range of grant-funded strategies implemented by grantees, the national evaluation team identified three categories of strategies—*accelerated learning*, *college persistence and completion*, and *connections to employment*. Figure 1.1 below provides definitions of each of these categories and highlights the participant outcomes measured within each of the categories.¹⁸

¹² The total amount for the grant program was reduced to \$1.9 billion due to rescissions under the 2013 budget sequestration.

¹³ DOL released the grant announcements in the spring of FY 2011 (Round 1), FY 2012 (Round 2), FY 2013 (Round 3), and FY 2014 (Round 4). For more information, see “Applicant Information,” Trade Adjustment Assistance Community College and Career Training Grant Program, last updated April 27, 2017, <https://www.doleta.gov/taaccct/applicantinfo.cfm>.

¹⁴ The Trade Adjustment Assistance for Workers program, administered by the US Department of Labor, seeks to provide workers adversely affected by trade with opportunities to obtain the skills, credentials, resources, and support necessary to (re)build skills for future jobs. More information on the program can be found at <https://www.doleta.gov/tradeact/>.

¹⁵ More information on the goals of the TAACCCT grant program and by round can be found at <https://www.dol.gov/asp/evaluation/completed-studies/20170308-TAACCCT-Brief-1.pdf>.

¹⁶ There are many definitions of career pathways in the literature. The definition used for the TAACCCT national evaluation aligns with the definition for the Career Pathways Design Study, which provides a high-level synthesis of the findings from career pathway research and design. See Sarna and Strawn (2018) and Schwartz, Strawn and Sarna (2018) for more information.

¹⁷ Appendix A provides the full definition of career pathways from the Workforce Innovation and Opportunity Act of 2014 (WIOA), which this definition reflects.

¹⁸ In each TAACCCT evaluation report, different strategies will be highlighted based on which round(s) of the grants and data sources are the focus of the report.

FIGURE 1.1

Types of Strategies Identified by the TAACCT National Evaluation

ACCELERATED LEARNING	PERSISTENCE AND COMPLETION	CONNECTIONS TO EMPLOYMENT
<p>Colleges reduce adult learners' time to completing a program of study by:</p> <ul style="list-style-type: none"> redesigning curriculum, credentials, and programs to help students move through coursework more quickly and earn credentials as they progress through programs; aligning college enrollment, credit award, and other college policies; and using technology and course scheduling to support learning for working students or students with families. 	<p>Colleges support adult learners' enrollment, progress, and completion of programs of study by:</p> <ul style="list-style-type: none"> providing academic and nonacademic support services; redesigning developmental and adult education programming for students who are underprepared for college; and helping students easily transfer to more advanced programs of study and applying credits that they have already earned to persist in postsecondary education. 	<p>Colleges connect adult learners to the workforce by:</p> <ul style="list-style-type: none"> developing curriculum to help students learn technical skills through on-the-job and simulated work experiences; preparing students for the workforce by providing guidance on career options, building job readiness skills, and helping support job search activities; and building partnerships with employers, industry associations, the public workforce system, and other organizations to support successful transitions to the workforce.

SYSTEMS STRATEGIES THAT ARE HIGHLIGHTED IN THIS REPORT

Accelerated Learning	Persistence and Completion	Connections to Employment
<ul style="list-style-type: none"> Stacked and latticed credentials Prior learning assessment Core curriculum Modularized courses Technology-enabled learning 	<ul style="list-style-type: none"> Coordination of support services for adult learners Dedicated support staff Transfer and articulation policies Competency-based education 	<ul style="list-style-type: none"> Employer engagement Sector strategies Career navigators and coaches Partnerships with the public workforce system Work-based learning

Source: Eyster 2019.

1.2. TAACCCT Evaluation Efforts

An important goal of DOL was to build a body of evidence through evaluation of the career pathways and capacity-building strategies implemented by grantees to understand how these strategies worked and how they may have contributed to participants' educational attainment and employment outcomes. The grant program had two major evaluation efforts: the national evaluation and the grantee-sponsored third-party evaluations.

The national evaluation uses a mix of qualitative and quantitative methods to understand and assess the capacity-building strategies funded by the grant program to inform future federal workforce investments and policy.¹⁹ The main components of the national evaluation are highlighted in box 1.1.

BOX 1.1

TAACCCT National Evaluation Components and Publications

- An **implementation study** (Rounds 1 & 2, Round 3, and Round 4) of the service delivery approaches developed and the systems changed through the grants based on a survey of colleges and visits to selected colleges
 - *The Trade Adjustment Assistance Community College and Career Training Grant Program: Implementation of the Rounds 1 and 2 Grants – Final Report*
 - *Implementation of the Round 3 Trade Adjustment Assistance Community College and Career Training Grants – Final Report*
 - *A Picture of the Trade Adjustment Assistance Community College and Career Training Grants: Results from a Survey of Round 4 Colleges – Final Report*
 - *Topic Briefs from Round 4: Context, Infrastructure, and Alignment Matter: Statewide Systems Change in Round 4 of TAACCCT; Building Career Pathways Programs and Systems: Insights from TAACCCT Round 4; and Employer Perspectives on Building Partnerships with Community Colleges: Lessons for Local Leaders and Practitioners*
 - *Early Descriptive Briefs: TAACCCT Goals, Design, and Evaluation; Grantee Characteristics; Approaches, Targeted Industries, and Partnerships; and Early Results of the TAACCCT Grants*
- **Syntheses of third-party evaluation findings** (Rounds 1 & 2, Round 3, and Round 4) to draw a national picture of the implementation of the TAACCCT capacity-building strategies and build evidence of the effectiveness of the strategies on participants' education and employment outcomes
 - *A Synthesis of Findings from the Rounds 1 and 2 Trade Adjustment Assistance Community College and Career Training Third-Party Evaluations – Final Report*
 - ***Systems Change in Community Colleges: Lessons from a Synthesis of the Round 3 TAACCCT Third-Party Evaluation Findings – Final Report (this report)***
 - *A Synthesis of Impact Findings from the Round 3 Trade Adjustment Assistance Community College and Career Training Third-Party Evaluations – Final Report*
 - *Implementation and Impact Synthesis Report: Round 4 TAACCCT Third-Party Evaluation – Final Report*

¹⁹ More information on the national evaluation activities can be found at <https://www.dol.gov/asp/evaluation/completed-studies/20170308-TAACCCT-Brief-1.pdf>.

- An *outcomes study* of nine Round 4 grantees using survey data and administrative records to better understand the characteristics of TAACCCT participants, their service receipt, and their education and employment outcomes
 - *Trade Adjustment Assistance Community College and Career Training Grants: Round 4 Outcomes Study – Final Report and Grantee Profiles*
 - A *study of employer relationships* with selected Round 4 employer-partners to better understand employers’ perspectives on how to develop and maintain strong relationships with colleges
 - *The Employer Perspectives Study: Insights on How to Build and Maintain Strong Employer-College Partnerships – Final Report*
-

The third-party evaluation of each grant documents and assesses the implementation of capacity-building activities funded by the grant and examines participants’ educational and employment outcomes and impacts.²⁰ Beginning in Round 2, DOL required grantees to use grant funds to engage and procure an independent third-party evaluator to design and conduct an evaluation of their grant projects. All Rounds 2–4 grantees had to provide evaluation design plans in their grant application. The Urban Institute reviewed and provided feedback on Rounds 3 and 4 evaluation design plans to help improve the rigor and quality of the evaluations; DOL approved the plans before evaluators could proceed.²¹

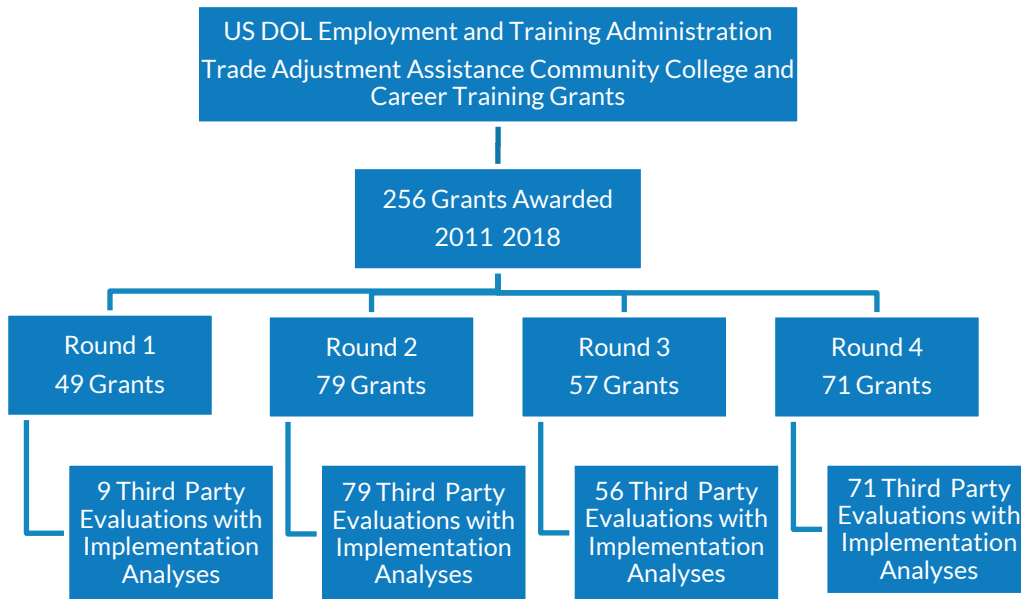
Figure 1.2 shows the number of grants awarded in each of the four rounds and the third-party evaluations that included implementation analyses for each round. All Rounds 2-4 evaluations included implementation analyses, per the grant requirements. However, only a subset of the Round 1 grantees (nine of the 49 grants) had third-party evaluations as it was not required. All grantees that had evaluations included implementation analyses as a part of their design.

²⁰ For more information on the Round 3 requirements for third-party evaluations, see pp. 59-62 in “Notice of Availability of Funds and Solicitation for Grant Applications for Trade Adjustment Assistance Community College and Career Training Grants Program” at https://www.doleta.gov/grants/pdf/taaccct_sga_dfa_py_12_10.pdf.

²¹ For more detailed information on the planned evaluation designs and data collection methods used by TAACCCT third-party evaluators, see “TAACCCT Goals, Design, and Evaluation Designs” at <https://www.dol.gov/asp/evaluation/completed-studies/20170308-TAACCCT-Brief-1.pdf>.

FIGURE 1.2

Grants Awarded and Third-Party Implementation Evaluations Across All Rounds of the Grants



Source: Urban Institute’s review of the third-party evaluation reports across all rounds.

Note: One Round 3 grant ended before the end of the period of performance so there are 56 instead of 57 third-party evaluations with implementation analyses. Only nine Round 1 grantees had third-party evaluations as it was not required.

Evaluation requirements written into the grant announcement were an important factor driving the number of grantees that conducted third-party evaluations. Figure 1.3 shows how evaluation requirements in the grant announcement changed across the rounds.

FIGURE 1.3

Third-Party Evaluation Requirements across All Rounds of the TAACCCT Grants

Round 1	Round 2	Round 3	Round 4
Not required, but evaluation of grant projects was encouraged	Required; grantees had to submit short evaluation design plan with application	Required; grantees had to submit short evaluation plan with application and detailed evaluation plan at a later date; plans were reviewed and subject to DOL approval	Required; grantees had to submit short evaluation plan with application and detailed evaluation plan at a later date; plans were reviewed and subject to DOL approval

Source: Mikelson et al. (2017).

The third-party evaluation designs had to include a 1) project implementation analysis, and 2) a participant outcome and/or impact analysis.²² For the implementation analysis, third-party evaluators had to document and assess the implementation of the key grant activities, specifically new and enhanced programs of study, support services, curriculum development, participant assessments and career guidance, and partnership development. The third-party evaluations used a variety of qualitative data sources for the implementation analyses including interviews, focus groups, and surveys.²³

DOL required that third-party evaluators submit interim and final reports with findings from these analyses. The synthesis uses both the interim and final reports as sources of evaluation findings on the implementation of the Round 3 capacity-building activities. Use of the reports for the synthesis is discussed more in the next section.

1.3. Synthesizing Round 3 Implementation Findings to Understand Systems Change in Community Colleges

This report addresses a key research question of the national evaluation: *what service delivery and/or system reform innovations were implemented to help improve employment outcomes and increased skills for participants?* It focuses on the capacity-building activities the Round 3 grantees implemented to support “systems reform innovations” or “systems changes” within and across institutions to provide education and training to adult learners leading to high-demand jobs. For this synthesis, the evaluation team reviewed both interim and final evaluation reports from the 56 third-party evaluations,²⁴ identifying findings that related to capacity-building activities the grantees implemented to support systems change within four overarching categories within four overarching categories, as shown below in figure 1.4 below. The figure also highlights the strategies within each category that the team reviewed. These capacity-building activities are well-represented in the Round 3 grants, as DOL encouraged these strategies in the grant announcement.

²² The national evaluation team provided guidance on the final report and a recommended outline for an executive summary. See <https://www.taacccteval.org/third-party-evaluator-reports/> for more information on the TAACCCT final evaluation reports.

²³ For more information on the evaluation designs and planned data sources, see Mikelson et al. 2017.

²⁴ The synthesis reviewed 77 interim and final reports from the Round 3 third-party evaluations. In two instances, a final report on implementation findings, separate from a final outcomes/impact report, was provided.

FIGURE 1.4

Four Categories of Capacity-Building Activities Implemented by TAACCCT Grantees

Developing Career Pathways	Supporting Adult Learner Success	Engaging Employers	Encouraging Collaboration across Colleges
<ul style="list-style-type: none"> • Comprehensive approaches to career pathways • Stacked and latticed credentials • Transfer and articulation agreements • Instructional design 	<ul style="list-style-type: none"> • Participant recruitment strategies • Use of technology to engage students • Prior learning assessments for veterans • Support services for participant success 	<ul style="list-style-type: none"> • Employers as advisory partners • Employers as hands-on partners • Employers as strategic partners 	<ul style="list-style-type: none"> • Implementation of statewide programs and policies • Transfer and articulation agreements • Sharing best practices • Other collaborative efforts

For this synthesis, the evaluation team reviewed each report to capture implementation findings from the third-party evaluation reports that related to the four categories of capacity-building activities implemented by grantees. Thus, the synthesis only includes findings that the third-party evaluators included in their reports. In addition, some reports also provided more detail than others, which is reflected in the examples provided throughout the synthesis. For example, some reports provided a rich description of the strategy or activity being implemented while others only indicated a grantee implemented a strategy or activity without much explanation. The report also does not assess the rigor of the evaluation methods used by third-party evaluators, including the implementation analyses, and presents findings without qualification.²⁵ Finally, as grantees across the rounds engaged in similar capacity-building activities across the rounds, the synthesis of findings is likely to be generalizable to the larger population of TAACCCT grantees and community colleges that are grantees under future initiatives with a similar design.²⁶

The remainder of the report is organized as follows. Chapters 2-5 present the findings for each of the four categories of systems activities in figure 1.4. The final chapter presents lessons for community college systems innovations and highlights implications for future workforce and community college initiatives.

²⁵ The Clearinghouse of Labor Evaluation and Research, administered by DOL, may formally review some third-party evaluations in the future. Information on the clearinghouse and its review process, including for implementation studies, can be found at <https://clear.dol.gov/>.

²⁶ See Appendix Table A in Mikelson et al. (2017) for more information on differences in grant requirements across the rounds. Round 1 grantees operated under somewhat different grant requirements than grantees in other rounds and each round had slightly different emphases but the capacity-building activities across the grantees were very similar.

2. Developing Career Pathways

This chapter synthesizes the implementation findings from the Round 3 evaluation reports on how grantees and their partner colleges developed career pathways, with an emphasis on grant projects that used a combination of strategies.²⁷ Career pathways approaches to workforce development offer an articulated sequence of education and training programs focused on an industry sector, combined with support services, to enable individuals to enter and exit at various levels and to advance over time to higher skills, recognized credentials, and better jobs with higher pay.²⁸ In creating the TAACCCT grant program, the U.S. Departments of Labor and Education sought to help community colleges and other postsecondary institutions develop training programs that provide accelerated pathways to good jobs for adult learners, while simultaneously meeting the needs of employers for a skilled workforce.²⁹ The grant announcements across the rounds emphasized the development and use of career pathways to help adult learners earn credits toward a degree and shorter-term industry-recognized credentials along the way and step in and out of education and training for employment and other life circumstances without losing ground. Over half (58 percent) of the Round 3 colleges that received grant funding (either as a single institution grantee or part of a

KEY FINDINGS

- About half of grantees used a comprehensive approach to developing career pathways and implemented a combination of strategies.
- Collaboration with stakeholders during career pathways planning appeared to help align curricula and credentials with employers' desired skills.
- Grantees indicated that employer engagement was needed for developing stacked and latticed credentials.
- Evaluations attributed improved educational outcomes for participants that took advantage of stacked and latticed credentials.
- Nearly all grantees implemented new or expanded existing transfer and articulation agreements as part of their efforts to create and enhance career pathways.
- Grantees created roadmaps to show participants how programs, courses, and credentials mapped to advanced steps on a career pathway.
- Grantees designed core curriculum to help build participants foundational knowledge and skills and supported the creation and enhancement of career pathways when connected to more advanced steps.
- New technology and online components to programs was perceived as supporting accelerated learning and access to programs for participants.

²⁷ Throughout the report, the authors refer to “grantees” as developing and implementing strategies under the TAACCCT grant. The term “grantees” can mean the lead grant institution—either a single-institution grantee or consortium lead—or the consortium member colleges that participated in grant activities.

²⁸ There are many definitions of career pathways in the literature and government agencies, organizations, and postsecondary institutions may use different definitions of career pathways. The definition used for the TAACCCT national evaluation aligns with the definition for the Career Pathways Design Study, which provides a high-level synthesis of the findings from career pathway research and design. See Sarna and Strawn (2018) and Schwartz, Strawn and Sarna (2018) for more information.

²⁹ For information on career pathways from the Round 3 grant announcement, see https://doleta.gov/grants/pdf/taaccct_sga_dfa_py_12_10.pdf.

consortium grant) developed new career pathway programs and an even greater share developed various components of career pathways such as stacked and latticed credentials (84 percent) (Eyster et al. 2020).³⁰

This chapter focuses on the development of career pathways strategies. It first discusses how some grantees implemented comprehensive approaches to career pathways, in that career pathways as a framework guided the overall development of the grant project. It then discusses how grantees implemented elements of career pathways, such as stacked and latticed credentials, transfer and articulation agreements, and instructional design, that link the steps of a pathway together for participants. Other chapters of this report discuss the Round 3 implementation findings on support services grantees implemented to help adult learners access and succeed in education and training, such as college and career navigation that are often a part of career pathways design (chapter 3), and employer engagement strategies, which are used to help align career pathways with the skill needs of employers (chapter 4).

2.1 Comprehensive Approaches to Career Pathways

About half of Round 3 evaluations discussed how grantees planned and implemented comprehensive approaches to establishing career pathways. For this report, comprehensive approaches are those where career pathways was an overarching feature of the grant projects that guided the grant activities, including credential development and instructional design, transfer and articulation agreements, support services, and partnerships. Planning, especially with the input of various stakeholders was a component of these efforts. This section highlights the implementation findings from the Round 3 third-party evaluations on grantees' efforts to develop comprehensive approaches to career pathways.

About half of the 56 grantees used a comprehensive approach to developing career pathways and implemented a combination of strategies.

About half of the evaluations indicated that their grantees implemented comprehensive approaches to career pathways focused on the industries with in-demand occupations in their region. These grantees demonstrated that they created well-articulated education and training steps, from short- and long-term certificates to two- and four-year degrees that supported participants' advancement in an industry. Round 3 grantees that used comprehensive approaches to develop career pathways included stacked and latticed credentials, transfer and articulation agreements and policies, and instructional design elements that support accelerated learning and persistence and completion. They also often include elements that support participants in career pathways, such as assessments, career coaching, access to support services, employer engagement, and ongoing coordination with key partners. Examples of these projects are:

³⁰ The Round 3 TAACCCT college online survey was fielded to 187 colleges involved in the 57 Round 3 grants, with 187 responding, or a response rate of 100 percent.

- **Butler Community College Information (IT) Program.** The *Butler IT Program* was a single institution grantee. *Butler IT Program* grant activities represented a systematic change in the way Butler Community College designed and delivered career and technical education. The grant project focused on integrating programs and providing students with additional on-ramps and off-ramps to career pathways. The grantee developed stacked and latticed credentials for information technology occupations and a 15-credit hour information technology core skills curriculum that, combined, provided “career pathways maps” for participants (Kansas State University Office of Educational Innovation and Evaluation 2017).
- **Macomb Community College’s Michigan Coalition for Advanced Manufacturing (M-CAM).** M-CAM was a single-state consortium project. The *M-CAM* career pathways model led by Macomb Community College and adopted by member colleges was designed to progressively develop the occupational, academic, and life skills that students need to find well-paying, stable employment. To develop a career pathways system, consortium colleges focused on developing intensive upfront assessment and career counseling, foundational skills training, and job placement services. Participants from all four career pathways and among all age groups attained high employment rates (Lewis-Charp et al. 2017).
- **Mount Wachusett Community College’s Advanced Manufacturing, Mechatronics, and Quality Consortium (AMMQC).** AMMQC was a multi-state consortium grant. AMMQC aimed to transform training in the advanced manufacturing sector by incorporating career pathways components that would enable nontraditional students greater access to training and careers in middle-skill occupations and meet the needs of local and regional employers. The AMMQC model led by Mount Wachusett Community College emphasized employer engagement, partner coordination, curriculum development, student support and job placement services, technology-enabled learning, and alignment of curricula with industry-recognized credentials (Negoita et al. 2017).

Five evaluations with grantees that implemented comprehensive approaches to career pathways used the word “transform” to describe the systems change the grantees were trying to accomplish within their institutions to build capacity for serving adult learners. For example:

- The evaluation for **Lewis and Clark Community College** highlighted that the grantee intended to “transform instructional design and distance learning delivery systems” through the integration of technology (Anonymous 2016, p. 7).
- The **Nashua Community College** evaluation highlighted that the grantee planned to “transform” its manufacturing programs into a competency-based format (Thomas P. Miller & Associates 2016).

Both evaluations highlighted the main thrust of the grant (e.g., use of technology and competency-based education) for transforming how their institutions deliver education and training but also discussed the multiple career pathways strategies they implemented, such as stacked and latticed credentials and transfer and articulation agreements. These institutions also built in supports to help participants persist and complete programs and engaged in partnerships to ensure alignment of the grant activities with participant and employer needs.

Collaboration with stakeholders during career pathways planning, such as industry groups and employers and other colleges implementing similar programs, appeared to help align curricula and credentials with employers' desired skills.

Planning, especially in collaboration with various stakeholders, was perceived to play a key role in the development of comprehensive career pathways. For example:

- **Lewis and Clark Community College** consortium colleges collaborated with employers while planning career pathway curricula for new and revised programs, receiving industry feedback early on (Anonymous 2017a).

At least one grantee used labor market data and other information on skills demand to identify high-demand, well-paying industries and occupations:

- In **Southwest Arkansas Community College** consortium, colleges reviewed labor market data, conducted direct employer outreach, and examined enrollment demand to select programs of study (Anonymous 2017b).

Six grantees redesigned existing programs of study to implement career pathways, including implementing policies and practices that would allow students to access the courses they needed to advance along those pathways. For example:

- Members of the **Southeast Technical College** consortium collaborated early on to design and redesign programs, which was cited as instrumental to the success of the grant activities (Swanson 2017).

Four grantees used a “mapping” process to embed essential skills and certifications in previously existing occupation training programs. Career pathway maps showed progression from certificate to bachelor’s degree and included associated job titles and salary ranges for each credential. For example:

- **Gateway Community College** hired a career mapping specialist to develop and disseminate career pathway maps for each occupation (Jensen, Horohov, and Waddington 2017).

2.2 Stacked and Latticed Credentials

Round 3 grantees were required to include or develop a variety of credentials, including certifications, certificates, and degrees, that could be earned in sequence and built on previous skills as part of their training programs.³¹ Such stacked and latticed credentials provide “on-ramps and off-ramps” that allowed individuals to access training and employment at multiple points along a career pathway. Nearly all of the Round 3 third-party evaluations identified stacked and latticed credentials as a strategy implemented by grantees as a part of their grant projects, with some degree of success.

³¹ For more information on credential development requirements, see the Round 3 grant announcement at https://doleta.gov/grants/pdf/taaccct_sga_dfa_py_12_10.pdf.

Grantees indicated that employer engagement was needed for developing stacked and latticed credentials.

In order to ensure that career pathways included the skill sets and credentials needed by employers, grantees involved local industry in discussions around curriculum content. Grantees began these discussions during the pathway planning process. Some employers and industry organizations worked directly with colleges on curriculum development and others reviewed curricula. For example:

- The consortium grants led by **BridgeValley Community Technical College** and **Mount Wachusett Community College** worked directly with the Manufacturing Institute to develop curricula and credentials (Bellville et al. 2017.; Negoita et al. 2017), while **Linn-Benton Community College's** employer partners mostly reviewed and provided feedback on program curricula as part of an advisory committee (Thomas P. Miller & Associates 2017a).³²

Specific industry certifications were required for many career pathway occupations, including those in health care, information technology, and advanced manufacturing. Three grantees developing career pathways components included certification preparation and testing at key points in the curricula:

- The **Community College of Baltimore County** responded to employer requests to reduce the length of time needed for participants to obtain industry certifications by creating two blended (in-person and online) learning credential programs that can be completed in four weeks, as opposed to a 16-week traditional semester (Bill et al. 2017).
- **Broward Community College** created courses to align with industry certification exams to help increase the number of workers with in-demand supply chain management knowledge and skills (Bruch et al. 2017).
- For **Cleveland Community College** consortium, the employer partners and subject matter experts helped to plan the Mission Critical Operations competency development, which led to a series of stacked and latticed credentials – from entry level to degree credentials to industry certifications – as a part of the effort to build career pathways (NC State Industry Expansion Solutions 2017).

Evaluations attributed improved educational outcomes for participants that took advantage of stacked and latticed credentials.

Three evaluations used their implementation findings to discuss how development and use of stacked and latticed credentials could explain observed improvements in educational outcomes for participants. For example:

- At **Century College**, the curriculum and articulation subcommittee developed courses and credentials that were stackable and/or offer transferable credits or skills recognized by four-year and graduate orthotics and prosthetics degree programs. The evaluation indicated that participants were likely to complete more credentials and more than one grant-funded program of study than those in similar programs of study, due to the stacked credentials built into their programs (Good and Yeh-Ho 2017).

³² These employer partnerships are discussed in more detail in chapter 4.

One evaluation also highlighted how career navigators supported participants' efforts to earn stacked and latticed credentials. For example:

- The evaluation for **Front Range Community College** indicated that participants who received services from the career navigator were more successful in stacking credentials than those that did not receive navigator services (McKay et al. 2017). Box 2.1 below provides an example of how development of stacked credentials supported participants' goals for earning certifications needed for construction and advanced manufacturing careers.

BOX 2.1

Great Falls College RevUp Project's Promise of Industry Certifications for TAACCCT Participants

To link RevUp programs to industry standards and ensure consistency of curriculum across colleges, all the consortium members aligned their programs certifications issued by national industry organizations and could be stacked with each other. However, some colleges required certifications for program completion while it was optional for others. Even with the variation in the requirement of completing the certifications, a survey of participants showed that 84 percent expected to earn one or more certifications before they graduated.

Source: Feldman et al. 2017.

2.3 Transfer and Articulation Agreements

Transfer and articulation agreements were perceived as an important approach to building career pathways, as they could allow students to access courses at different college campuses and to advance from certificates taking a year or less to complete to two-year and four-year degree programs. Forty-nine evaluations identified transfer and articulation agreements as a strategy the grantees sought to implement. Many succeeded in doing so, often building on previous agreements and policies. Only a few grantees found it more challenging to work with four-year institutions. This section highlights the implementation findings from the Round 3 evaluations that show how the grantees developed and implemented transfer and articulation agreements to support career pathways during the grant period.

Nearly all grantees implemented new or expanded existing transfer and articulation agreements as part of their efforts to create and enhance career pathways.

Forty-nine out of 56 grantees developed transfer and articulation agreements, included agreements across two-year colleges, agreements with specific four-year institutions, and state- or region-wide agreements. For example:

- **BridgeValley Community and Technical College** established transfer agreements with West Virginia colleges within and outside of the consortium to enable participants to change college campuses without losing accrued credits (Bellville et al. 2017). They also established

articulation agreements with four-year institutions across the state, including West Virginia University.

- Other colleges, including **Kapiolani Community College**, **Bellingham Technical College**, and **Century College**, established articulation agreements with specific four-year colleges as part of more intensive partnerships (Blume and Matson 2017; Good and Yeh-Ho 2017; Pacific Research & Evaluation 2016).

A few evaluations highlighted how grantees that offered non-credit workforce training programs would implement policies to bridge those programs to credit-bearing programs in the same occupation or industry. This could allow participants receiving certificates from non-credit programs to move into for-credit programs without repeating coursework. For example:

- **Central Maine Community College** offered non-credit certification courses in information that bridged to courses and modules that awarded both college credit and industry-recognized certifications, creating one- and two-year credentials leading on to four-year degrees (Horwood et al. 2017).

Grantees created “roadmaps” to show participants how programs, courses, and credentials mapped to more advanced steps on a career pathway.

Two grantees used mapping for transfer and articulation across programs within a career pathway:

- The **Century College** consortium created a curriculum and articulation subcommittee, which created a certificate and degree articulation map, showing how grant-funded program credentials articulate to higher-level degrees (Good and Yeh-Ho 2017).
- **Great Falls College** created “roadmaps” for transfer and articulation agreements comparing learning outcomes semester by semester across colleges, which could be used for prior learning assessments (Feldman et al. 2017).

Similar to stacked and latticed credentials, some evaluations indicated that transfer and articulation efforts were successful in supporting participants’ educational advancement.

Two evaluations highlighted how transfer and articulation agreements supported student advancement:

- **Central Maine Community College** had 51 participants who completed a grant-funded program and transferred to a four-year institution, primarily the University of Southern Maine or a campus of the University of Maine. The evaluation attributed this success to the fact that the consortium colleges were successful in creating new transfer and articulation agreements and prior learning assessment policies early on in grant implementation, allowing participants to accelerate their time in the grant-funded programs and transfer to a four-year institution to complete a degree program (Horwood et al. 2017).
- **Kapiolani Community College**, showed how its transfer and articulation agreements were supporting advancement. The college developed an articulation agreement with University of West Oahu to allow students with the Advanced Professional Certificate in Hospitality to earn credits toward a bachelor’s degree in hospitality operations management. Three-quarters of

participants indicated that they planned to pursue this bachelor's degree program at the local four-year college (Pacific Research & Evaluation 2017b).

Compared to the Rounds 1 and 2 evaluations, few grantees perceived challenges with developing transfer and articulation agreements (Eyster 2019). For example:

- While **Central Maine Community College** saw success, staff noted the difficulty with getting staff from private four-year institutions to respond in a timely manner (Horwood et al. 2017).

2.4 Instructional Design

Round 3 grantees used a range of accelerated learning strategies to inform their instructional design efforts to better serve the needs of participants and ensure programs led to employment. These strategies included the creation of core curricula, the development or use of instructional software, adapting course content into smaller, digestible portions or “modules,” and competency-based education approaches aligned to specific skills. This section highlights the implementation findings from the Round 3 evaluations on how grantees developed and implemented various instructional design approaches during the grant period.

Grantees designed core curriculum to help build participants' foundational knowledge and skills and supported the creation and enhancement of career pathways when connected to more advanced steps.

Twelve grantees worked with consortium member colleges to develop “core curriculum” for foundational knowledge and skills allowed grantees to use the same introductory courses for a variety of related occupations. Standardizing core curricula across colleges in a metro area, state, or region not only helps facilitate transfer and articulation across and along career pathways, but it allowed grantees to update course content and materials according to industry changes simultaneously. For example:

- The **Los Angeles Trade-Technical College** consortium developed two tiers of common core curricula across member colleges. Tier 1 courses taught foundational competencies, such as career readiness skills, and includes prior learning assessment. Tier 2 courses taught key academic competencies needed to succeed in various health science programs at the colleges (Tan and Moore 2017).
- The **Long Beach City College** project created a construction pre-apprenticeship program track based on the North America Building Trades Union's Multi-Craft Core Curriculum. The goal of the program was to prepare program participants to successfully compete for entry into Registered Apprenticeship programs in the building trades or qualify for other employment offered by the region's rapidly expanding construction industry (Schiorring et al. 2017).

New technology and online components to programs of study was perceived as supporting accelerated learning and access to programs for participants.

Thirty-two grantees included online learning or supports for program participants. To do this, grantees developed or used instructional software. For example:

- **Cleveland Community College** created software to support “telepresence labs” that allowed participants to remotely access physical lab environments for course assignments (NC State Industry Expansion Solutions 2017).
- For **Linn-Benton Community College**, the entire program was developed to take place online and combined stacked and latticed credentials, student supports, modularized courses, and competency-based education (see box 2.2).

BOX 2.2

Linn-Benton Community College: *LB iLearn* Campus

Linn-Benton Community College used its campus online delivery platform to create a “student-centric” educational experience, integrating stacked and latticed credentials and extensive student supports. *LB iLearn* Campus was an online college developed to train TAA-eligible, veteran, and dislocated workers for Oregon’s growing industry sectors – healthcare, accounting, business and office administration, and communications and marketing. Staff and faculty developed online curricula from traditional programs through a rigorous and robust course content and assessment development processes. *LB iLearn* used modularized courses to create competency-based, self-paced training programs that students reported as intuitive to navigate. The program was designed to increase access to postsecondary education and training for non-traditional students with barriers to work, such as irregular job hours and family responsibilities.

Source: Thomas P. Miller & Associates 2017a.

While not as common as other instructional design strategies, 20 grantees also developed modularized courses to support accelerated learning. Modularized courses differ from traditional college courses in that, instead of learning a broad range of content over the course of an entire semester, essential knowledge and skills are broken down into smaller, more focused “modules” that allow individuals to master specific key concepts one at a time and progress sequentially to more difficult content. For example:

- **BridgeValley Community and Technical College** created bridge courses that were modularized and combined crosscutting technical skillsets (Thomas P. Miller & Associates and The Policy & Research Group 2017).
- The **Community College of Baltimore County** transformed its required course sequences into a four-week set of training modules for a U.S. Department of Defense stacked certificate career path, designed to reduce the time required for students to obtain certifications (Bill et al. 2017).
- **Long Beach City College** created a new 40-hour, modularized course sequence to enable self-paced, short-term training in the industrial maintenance field and allow employees of industry partners to participate in the program to upgrade their skills (Schiorring et al. 2017). The earlier program design took students 80 hours over three weeks to complete, making it difficult for working adults to participate in the program.

Similar to modularized courses, development of competency-based education was not as commonly implemented across Round 3 grantees as other career pathways strategies, with 12 grantees implementing it. Competency-based education uses assessments to measure students' mastery of certain skills, allowing students to progress through training programs at their own pace. Instead of the traditional model of learning with a broad range of material and students being tested on all of it at the end of a semester, competency-based models allow learners to master key concepts one at a time. Participants could also move quickly through training that was less challenging for them and could spend more time on and receive assistance as necessary for more difficult content. For example:

- **Nashua Community College** partnered with College for America to transform several existing advanced manufacturing courses into competency-based curricula that would ensure student mastery of critical knowledge and skills (Thomas P. Miller & Associates 2017c).
- **Ozarks Technical Community College** used a competency-based education model for their health care programs to award credit to students based on knowledge gained rather than time spent on a particular task (Mittapalli et al. 2017).
- **Southwest Technical Institute** piloted a competency-based general math course to address the math prerequisite as part of the program of study to make it easier for participants to complete (Swanson 2016).

3. Supporting Adult Learner Success

This chapter synthesizes the implementation findings from the Round 3 third-party evaluation reports that highlight the approaches grantees used to serve adult learners, as encouraged under the TAACCCT grant program. These groups of adult learners included veterans, TAA-eligible and dislocated workers, and underrepresented populations in high-demand occupations, including rural residents, individual with low basic skills, and minorities. Strategies to support these groups included recruitment and engagement strategies, use of technology to engage students, and development of prior learning assessments to provide credit to veterans for their military experience. Grantees provided an array of support services to foster student success. Falling along a continuum, these approaches ranged from individualized supports through dedicated staff or case management or wraparound approaches to more integrated approaches that “bundled” resources across partners to proactively support adult learners.

3.1 Participant Recruitment Strategies

Round 3 grantees used a variety of approaches to recruit adult learners for their programs of study. Based on a survey of Round 3 colleges, over 90 percent of colleges recruited unemployed and dislocated workers and veterans (91 percent) (Eyster et al. 2020). At least three-quarters actively

KEY FINDINGS

- Targeted outreach and marketing efforts by grantees involved recruitment specialists and coordinated strategies across partners to reach veterans.
- Grantees used multiple strategies and built relationships on and off campus to recruit veterans.
- Grantees used tailored marketing messages and recruiters to reach adult learners affected by economic conditions.
- Grant projects leveraged connections with the public workforce system to reach TAA eligible or dislocated workers and unemployed or underemployed individuals.
- The number of TAA eligible workers declined over time, making for a limited recruitment pool for this high priority population.
- Grantees conducted targeted outreach to recruit women, minorities, rural residents, and individuals with low basic skills.
- Use of specialized educational software and online resources enhanced remediation and basic skills training, academic planning, and tutoring for adult learners.
- Technology was used as a tool for supporting student learning and helping grantees to reach more students and scale up efforts.
- Grantees perceived challenges in using technology for assessment and student support due to participant motivation, skills, and learning preferences.
- Use of prior learning assessments for veterans involved review of transcripts and faculty advising and institutional coordination.
- Grantees created or enhanced centers for participants to provide an integrated or “bundled” set of services to support participant success.
- Dedicated staff, often working one on one with participants, provided counseling and advising as well as coordination of comprehensive, individualized support services to help participants succeed.

recruited underemployed workers, TAA-eligible workers, incumbent workers, low-income/disadvantaged individuals, long-term unemployed individuals, entry-level workers, and individuals lacking job-related skills or with low education levels. More than 70 percent of colleges targeted women and racial and ethnic minorities, as encouraged in the grant announcement. A lesser but still substantial percentage of colleges targeted men, older workers, people with disabilities, Unemployment Insurance claimants, immigrants/refugees/first-generation Americans, individuals with limited English proficiency, and ex-offenders/court-involved individuals. This section highlights the implementation findings from the evaluation reports on how grantees recruited target populations for the grant program.

Veterans

Prioritizing veterans for participation in programs of study was a primary focus of the Round 3 grants, with the grant announcement calling for applicants to adhere to the Jobs for Veterans Act (Public Law 107-288) requirement and DOL guidance on veterans' priority for the receipt of employment, training, and placement services.³³ Nationwide, approximately 5 percent of community college students are veterans.³⁴ Almost two-thirds of the Round 3 evaluations indicated that their grantees targeted veterans for outreach efforts. The approaches ranged in scope and scale, and included on-campus efforts across college departments, targeted recruitment efforts coordinated with veteran-serving organizations and the public workforce system, and multi-pronged strategies and connections across organizations and sectors.

Targeted outreach and marketing efforts by grantees involved dedicated recruitment specialists and coordinated strategies across partners to reach veterans.

Six evaluations indicated that the grants they focused on used dedicated project staff to prioritize recruitment and engagement with veterans on campus. Grant-funded positions included the veteran's service coordinator at **Bellingham Technical College**, the career mapping specialist at **Cincinnati State Technical and Community College**, and the student services specialist at **Saddleback College** (Blume 2017; Pacific Research & Evaluation 2017a; Thomas P. Miller & Associates 2015). For example:

- Enhanced coordination with the campus-based veteran's center to adapt intake, recruitment, and retention approach was a component of **Gateway Community College's** approach (Jensen, Horohov, and Waddington 2017). The project coordinator contacted the college's veterans student support staff to explore recommendations on policies and processes for intake, retention, and placement. Building on internal expertise, Gateway Community College also incorporated campus advisors that served veterans as part of the grant's project team to leverage their experience.

³³ For more information on the Round 3 requirements for veterans, see p. 30 in "Notice of Availability of Funds and Solicitation for Grant Applications for Trade Adjustment Assistance Community College and Career Training Grants Program" at https://doleta.gov/grants/pdf/taaccct_sga_dfa_py_12_10.pdf.

³⁴ American Association of Community Colleges. (2018). "Fast Facts 2018." <https://www.aacc.nche.edu/wp-content/uploads/2018/04/2018-Fast-Facts.pdf>.

- Becoming fully compliant with *Principles of Excellence* and the *Five-Star Challenge*³⁵ enabled **BridgeValley Community and Technical College** to offer a friendly environment to veterans as staff were trained in how to navigate veteran's benefits and circumstances (Thomas P. Miller & Associates and The Policy & Research Group 2017).
- The **College of Central Florida** overcame recruitment challenges by coordinating with the Veterans Service Office, the campus Career Center, and its outreach team (Program Evaluation and Education Research Group 2016).

Thirty grantees implemented recruitment strategies to reach veterans in their communities, using personalized approaches that were coordinated with veteran organizations and the public workforce system and linking them to programs and services. Grant-funded staff often led these efforts. For example:

- At **North Dakota State College of Science**, one of the instructors was a veteran and led outreach efforts to veteran organizations (WorkEd Consulting 2017).
- **Mesa Community College** reported success in recruiting veterans (Nanda et al. 2017). The career navigator worked directly with veterans' services offices to inform staff about the programs of study and encouraged them to make referrals when appropriate. The college also partnered with the Veterans Family Coalition to increase awareness of the program among spouses of veterans.
- The career mapping specialist at **Cincinnati State Technical and Community College** engaged in community outreach (e.g., job fairs) to recruit new participants, placing an emphasis on recruiting veterans (Thomas P. Miller & Associates 2015).
- A student services specialist focused on recruiting and assisting clients, especially veterans, from the local workforce development office to enroll in the **Saddleback College** programs (Pacific Research & Evaluation 2017a).
- Both **Broward Community College** and **Oklahoma State University** engaged in community outreach and coordinated efforts with local veteran serving organizations to recruit veterans (Armstrong and Corea 2017; Bruch et al. 2017).

Grantees used multiple strategies and built relationships on and off campus to recruit veterans.

Grantees implemented multiple outreach strategies to recruit veterans, both on- and off-campus. Project staff connected with campus-based veteran affairs office or initiatives; they visited veteran-focused organizations to make personal connections and create a referral and support pipeline. Additional strategies included providing materials and information to service organizations, attending

³⁵ Two- and four-year colleges in West Virginia pledged to: 1) provide signed commitments from college and university presidents to dedicate time and resources toward meeting the needs of student veterans; 2) review and amend policies to increase college access and affordability for veterans; 3) provide increased academic support; 4) enhance social networking opportunities for veterans on campus; and 5) build partnerships with community organizations to better serve and support veterans in all aspects of their lives. Retrieved from: <http://www.wvhepc.edu/w-va-colleges-supporting-student-veterans-through-5-star-challenge/>.

or making presentations at veteran-focused events, such as career fairs, and briefing staff at veterans' organizations. For example:

- Staff at **Mount Wachusett Community College** used multiple strategies to recruit veterans for its programs, including presentations at meetings of local veterans' organizations and attendance at veteran-focused events such as career fairs (Negoita et al. 2015). In addition, the job development coach collaborated with the veteran's affairs specialist in the college's career services office to identify upcoming veteran-focused events for recruitment.
- **Macomb College** briefed local Veterans Administration staff members, made presentations at meetings of local veterans' organizations, and attended veteran-focused events such as career fairs (Lewis-Charp et al. 2016). Across all of Macomb College's consortium partners, about 7 percent of enrolled participants were veterans.
- The **Community College of Baltimore County** targeted managers of veteran centers to promote the cybersecurity program to veterans (Bill et al. 2017). Lending visibility to and personalizing the outreach effort, the project director attended campus events for veterans, such as *Boots to Suits*, which helps veterans transition to civilian life. The program set up a booth at the Cyber Maryland conference in 2014, which was attended by many individuals still active in or transitioning out of the military. The program provided materials and information to the *Veterans Integration to Academic Leadership* staff, which offers educational outreach and mental health services to eligible veterans at the college. A neighboring community college (Prince George's Community College) helped the Community College of Baltimore County program by sharing strategies for providing enhanced services to veterans, including employment services.

Box 3.1 provides a more detailed example of outreach to veterans across partner organizations.

BOX 3.1

New Mexico Junior College's Coordinated Outreach to Veterans

New Mexico Junior College's outreach strategy involved multiple partners and linking veteran-oriented resources. Grant staff reached out to veteran's representatives in the region to advertise the training programs with their veteran program participants. The college maintained a relationship with the local National Guard so that veterans and active military could take advantage of tuition assistance benefits and enroll at the college. The college also targeted active military and veterans for enrollment and services through partnerships with the Department of Veteran Affairs and the New Mexico Department of Vocational Rehabilitation. The college shared its outreach tools, and provided employer partners, military and veterans' organizations with targeted marketing materials, social media postings, and encouraged word of mouth advertising to help draw in students.

Source: UNM Center for Education Policy Research 2017.

TAA-Eligible Workers, Dislocated Workers, and Unemployed or Underemployed Adults

The Round 3 grant announcement encouraged applicants to target adults that were affected by economic conditions, such as TAA-eligible and dislocated workers, and adults with challenges to employment, such as unemployed or underemployed adults. Over half of the evaluation reports highlighted outreach efforts by grantees to target TAA-eligible, dislocated workers, and unemployed or underemployed individuals.³⁶ The grantees used similar approaches to targeting veterans.

Grantees used tailored marketing messages and recruiters to reach adult learners affected by economic conditions.

Six grantees created marketing tools to target adults affected by economic conditions. For example:

- **Butler Community College** created marketing messages oriented toward attracting potential students who met the criteria for dislocated workers (Kansas State University 2017).
- At **BridgeValley Community College**, each of the colleges took a similar approach to marketing, which typically involved targeted outreach toward adult learners and TAA-eligible workers (Thomas P. Miller & Associates and The Policy & Research Group 2017).

Similar to the outreach for veterans, six grantees hired a specific recruiter, while others made use of recruiters available at the college. For example:

- The **College of Central Florida** initiated a concerted outreach effort to reach adult learners, including TAA-eligible workers, as they had not been a target of the grantee's efforts in the past (Program Evaluation and Education Research Group 2016). Each member college created an outreach team to conduct presentations on a monthly or quarterly basis to reach potential participants. Other events included speaking engagements, classroom visits, expos, and open houses.
- To better reach these adult learners, **Oklahoma State University** hired an outreach specialist to conduct all marketing and outreach strategies for the project, which included a social media campaign using Facebook and Twitter (Armstrong and Corea 2017). Along with the outreach specialist, project staff gave presentations to a broad range of community organizations, such as chambers of commerce, veteran service organizations, drug court, the Cherokee Nation, local manufacturing councils, and the largest industrial park in the state.

Grant projects leveraged connections with the public workforce system to reach TAA-eligible or dislocated workers and unemployed or underemployed individuals.

³⁶ Unemployed workers are people who are jobless, looking for work, and available for work. Unemployed workers include people who were previously employed but lost their positions because of company layoffs or plant closures. Underemployed workers have part-time, temporary, intermittent, or low-wage work that does not provide enough income to live stably. See the Urban Institute's Local Workforce System Guide for more information at <https://workforce.urban.org/topics/unemployed-or-underemployed-workers>.

Eighteen grantees also reached out to state and local workforce development partners to identify and recruit TAA-eligible and dislocated workers and unemployed or underemployed adults and create program linkages. For example:

- Staff members with the **Macomb College** consortium provided TAA program coordinators with information about the grant-funded programs and elicited guidance on how best to recruit this population (Lewis-Charp et al. 2016).
- **Cleveland Community College** connected with the local workforce development board to add a degree program to the list of approved credential options (NC State Industry Expansion Solutions 2017).
- **Century College** reached out to workforce development partners to raise awareness of the grant-funded programs, establish relationships and partnerships, and create referral mechanisms (Good and Yeh-Ho 2017).

Grantees also reached out to American Job Centers to support recruitment of TAA-eligible and dislocated workers. Project staff at **Essex Community College**, **Mesa Community College**, and **Oklahoma State University** conducted presentations at American Job Centers to support participant recruitment (Armstrong and Corea 2017; Giordano and Holcomb 2017; and Nanda et al. 2017).

The number of TAA-eligible workers declined over time, making for a limited recruitment pool for this high-priority population in grant-funded programs nationwide.

Grantees and their workforce development partners saw a decreasing number of TAA-eligible workers in their state or region, resulting in a limited pool of workers for potential recruitment. Some evaluations made note of this trend. Five grantees had not been successful in recruiting any TAA-eligible workers, despite their outreach efforts (BridgeValley Community College, Cincinnati State Technical and Community College, Macomb College, Mesa Community College, and Colegio Universitario de San Juan) (Belville et al. 2017; Franco 2017; Lewis-Charp et al. 2017; Nanda et al. 2017; Thomas P. Miller & Associates and The Policy & Research Group 2017). For example:

- Although the local workforce development office working with the **Colegio Universitario de San Juan** provided information about TAA-eligible workers and organized many job fairs and orientations, the evaluation found low enrollment of TAA-eligible workers (Franco 2017).
- **Purdue Northwest University** had low TAA-eligible participation; a workforce development partner attributed the limited enrollment to not having any companies leave the region or that companies did not complete the required paperwork that would have allowed displaced workers to become TAA-eligible (Rucks and Schwob 2017).

Notably, evaluation findings for two grantees indicated that TAA-eligible workers were difficult to reach and enroll in manufacturing programs:

- Beyond the declining number of statewide TAA certifications, **Macomb Community College** and American Job Center staff found that TAA-eligible workers were a challenging group to recruit as “many affected workers who were laid off from manufacturing jobs do not want to re-train for another job in the manufacturing sector” (Lewis-Charp et al. 2017, p. 35).

- Staff at **Mesa College** found that “some TAA-eligible job seekers are hesitant to pursue or continue a career in manufacturing for fear of being laid off again in the future” (Nanda et al. 2017, p. 31).

Other Adult Learners

Nine grantees targeted other groups of adult learners through their recruitment efforts. Among these, the grantees made efforts to recruit women and minorities, rural residents, and low-income individuals using targeted approaches.

Grantees conducted targeted outreach to recruit women, minorities, rural residents, and individuals with low basic skills.

Nine grantees made concerted efforts to diversify participants enrolled in the grant-funded programs by reaching out to women and minorities through large-scale, special initiatives and targeted marketing campaigns. For example:

- **Cleveland Community College** worked with a professional networking group focused and launched a “*Women in Mission Critical Operations*” initiative to recruit and enroll women in its program (NC State Industry Expansion Solutions 2017). One its consortium partners, Wake Tech Community College partnered with a statewide mentoring initiative to recruit minority males.
- **Iowa Western Community College** hosted a conference on women in information technology, inviting other community colleges in the state to attend (de la Mora et al. 2017). The college also highlighted women and minorities in its promotional products and marketing efforts, using social media and email campaign to promote the grant-funded program.
- Casting a wide net across the state, in towns and native villages, **University of Alaska Southeast** deployed regional outreach coordinators to recruit rural residents for its program (Madden Associates 2015). Outreach coordinators worked with multiple agencies in their regions to identify and recruit participants, including the Alaska Department of Labor and Workforce Development, regional Job Centers, industry, vocational rehabilitation services, and veterans’ services organizations.
- **BridgeValley Community and Technical College, Broward Community College, Century College, and Midlands Technical College** focused on recruiting individuals with low basic skills (Bruch et al. 2017; Center for Applied Research 2017; Good and Yeh-Ho 2017; Thomas P. Miller & Associates and The Policy & Research Group 2017). However, the evaluation reports did not differentiate the strategies used for this type of student from other target populations.

The evaluations provided some insights about the solutions needed to address challenges in recruiting and retaining underrepresented populations: engaging in persistent and coordinated efforts and addressing barriers to participation in industry sectors. For example:

- **Cleveland Community College** found that there was low representation of women and other underrepresented groups in its programs (NC State Industry Expansion Solutions 2017). While some progress was made, “there appeared to be little in regards to concerted planning efforts, and activities, focused on addressing this issue” (p. 203).

- **Iowa Western Community College** found that the enrollment of women in the program tapered off over time, despite efforts made by the project faculty and staff, suggesting that barriers to recruiting women in information technology careers persisted (de la Mora et al. 2017).

3.2 Use of Technology to Engage Students

Most Round 3 grantees developed strategies to build capacity to accelerate learning and support persistence and completion through the use of technology (Eyster et al. 2020). According to the implementation evaluation findings, 18 grantees harnessed technology to more effectively support program participants. Eleven of these grantees used technology to support remediation, academic planning, and tutoring in an effort to foster student persistence and completion. Seven grantees also implemented strategies to accelerate learning, using technology to support intensive training in a short period of time. Two of the 18 grantees used technology to assist students with job searches and connecting with employers.

Use of specialized educational software and online resources enhanced remediation and basic skills training, academic planning, and tutoring for adult learners.

Eighteen grantees used online tools to support remediation and basic skills training, including contextualized learning. For example:

- At points along the health care career pathway programs, students at **Los Angeles Trade-Technical College** had opportunities to take basic skills refresher modules using online resources (Tan and Moore 2017).
- **East Mississippi Community College** used CareerReady 101, a comprehensive program which features an integrated approach to exploring careers and their skill requirements (Harpole 2017). Students in the Manufacturing Discovery program used the tool extensively for remediation assistance.
- Colleges in the **Macomb College** consortium purchased and used Edmentum’s Plato, an online skill remediation tool (Lewis-Sharp et al. 2016). Using contextualized learning, the course provided online content including personalized instruction and assessments to help students prepare for college and career success.
- **Southeast Community College** used a self-paced, adaptive software solution that helped students identify and improve basic reading, writing, and math skills according to their individual needs (Anonymous n.d.).

Nine grantees used technology to support career and academic planning. For example:

- **Mesa Community College** introduced Viridis, a software tool, to assist students with navigating the grant-funded program, exploring career pathway options and planning coursework (Nanda et al. 2017).
- **Lewis and Clark College** incorporated Kuver, an online career planning assessment into their advising process to create an individualized career plan for each participant (Anonymous 2016).

- Students at **Butler County Community College** used Career Coach, an online tool, to search for a job, compare career wages, and better understand requirements for entry-level jobs in their field (Kansas State University 2017).
- Using a web-based platform, CState CareerLink, **Cincinnati State Technical and Community College** enabled participants, staff, faculty, and employers to communicate in a streamlined manner (Thomas P. Miller & Associates 2015). Employers posted job opportunities for students to view, and participants scheduled online counseling appointments with their advisor.

Five grantees provided online tutoring to help participants succeed in their coursework. For example:

- **Missouri State University** implemented MyMathLab® to assist students with math courses, used Tutor Talk to contact the writing lab, and added Tegrity® for efficient studying (McREL International 2017).
- Across the **Northcentral Technical College** consortium, instructors at 11 of the 16 colleges contributed content for topics on the Digital Tutor platform (Smith et al. 2016). Working with industry and instructors, the program developed a prototype for a digital tutor.
- The **University of Alaska Southeast** instructors used online tutoring and advising to support participants in remote, rural locations (Madden Associates 2017).

Box 3.2 below provides a detailed look at Cleveland Community College’s use of digital tutoring tools.

BOX 3.2

How Project Staff Supported Digital Tutoring at Cleveland Community College

For the Mission Critical Operations program, the colleges in the Cleveland Community College consortium used online resources to provide a collaborative approach to tutoring using the *Digital Learn* platform, a resource for students, instructors, and subject matter experts (SME) to interact with one another in a Q&A or discussion forum. Participants accessed the site and posted questions about a particular course or concept, then their question was tagged, either by the participant or by a site administrator. A notice was then sent to faculty and relevant SME volunteers from industry. SME/faculty were then prompted to answer the student’s question; a discussion board allowed other students and SMEs to participate in the conversation, along with tracking which questions had already been answered. The measure of success for this model was to have all participant questions answered by an SME within 48 hours of the original posting, which was achieved during the grant period.

Source: NC State Industry Expansion Solutions 2017.

Technology was used as a tool for supporting student learning and helping grantees to reach more students and scale-up efforts.

Seven grantees used technology intensively for self-paced, skill-based learning. For example:

- To make learning more accessible to students, **Saddleback College** developed online courses for its credit-bearing programs, providing faculty with stipends to facilitate online conversion

and attend trainings to learn how to put coursework online (Pacific Research & Evaluation 2017a).

- **Cleveland Community College** implemented Digital Study, a collection of interactive resources for self-study resources such as flashcards, videos, and simulations (NC State Industry Expansion Solutions 2017).
- The **Community College of Baltimore County** used virtual technology and training to provide flexible options for students to access training, enhance curricula and participant experiences, and expand the college's capacity to train more students (Bill et al. 2017).
- **Oklahoma State University** provided open access to its computer lab with flexible hours of operation to serve adult learners', including incumbent workers', schedules (Armstrong and Corea 2017).
- Four of the colleges in the **Great Basin College** consortium offered online learning for self-paced study for incumbent workers (Jha, Raasch, and Maekawa 2017). Participants using the hybrid approach of online learning and on-campus lab time found that the flexibility of online learning allowed them to schedule coursework around their jobs.
- Making remote learning as portable as possible for rural participants, the **University of Alaska Southeast** offered modularized courses on iPads (Madden Associates 2017).
- **Great Falls College** scaled up its approach to distance learning by creating online coursework platform—RevUp—open to students from around the state through course sharing. It allowed students at one college in the consortium to take courses at another college (Feldman et al. 2017). Course were covered by financial aid, with credits awarded to students' transcripts at their home institutions. Expansion of RevUp facilitated access for students in remote areas.

Four evaluations also posited that investments in technology to support accelerated learning and persistence and completion benefited participants:

- **Butler Community College** participants reported satisfaction with such resources (Kansas State University Office of Educational Innovation and Evaluation 2017).
- The digital tutor initiative at **Northcentral Technical College** was perceived to be successful (Smith et al. 2017). The program exceeded its goal for digital tutors, ultimately having 454 tutors (a 20-percent increase); the tutoring service was well-received by students.
- Use of virtual student services, such as tutoring and advising, contributed to student persistence and completion at the **University of Alaska Southeast** (Madden Associates 2017).
- For **East Mississippi Community College**, using CareerReady 101 online allowed the navigators to track each student's progress and completion of their assigned modules and support their persistence and completion (Harpole 2017).

Grantees perceived challenges in using technology for assessment and student support due to participant motivation, skills, and learning preferences.

Six evaluations identified challenges in using technology to better serve target populations that have implications for program design and implementation. For example:

- At **Central Maine Community College**, rural participants had limited internet access and broadband service; this hindered participation in the information technology program (Horwood et al. 2017).
- **Cincinnati State Technical and Community College** found that participants had varying levels of skill or technical aptitude (Belville et al. 2017). While this required the instructors to spend more time with participants in class or using simulators, participants preferred more hands-on training with physical machines rather using simulations, thus creating a mismatch between instructional design and student learning preferences.
- The **College of Southern Idaho** made an investment in massive open online courses for English as a Second Language instruction but found it difficult to implement as intended due to participants' (incumbent workers') limited computer skills, coupled with the lack of instructional space and technical difficulties with the internet at the employer's site (Wasdyke Associates International 2017).

Two grantees experienced a disappointing return on investment on the use of intake assessment platforms. They are:

- The **Community College of Rhode Island** invested in Poised for Success, a hybrid (online and face-to-face), non-credit course so that participants could explore their career interests, as a self-directed activity and with the guidance of a career specialist (Singer 2017). The objective of the tool was to understand how participants' interests aligned with their skills, the career pathway programs offered, and future career goals. However, enrollment was consistently low, despite informal staff outreach efforts.
- The **Pellissippi State Community College** consortium experienced limited use of the WorkKeys assessment tool for basic academic skills (Takyi-Laryea et al. 2017). Only two colleges, Northeast and Vance-Granville, incorporated the assessment into their programs. As reported, other "struggled to communicate the value of the assessment to regional employers and students or to incentivize WorkKeys participation" (p. 9). Three colleges in the consortium found that the assessment was "not relevant in the hiring process for local employers," making it hard to leverage this resource for participants' benefit (p. 54).

3.3 Prior Learning Assessments for Veterans

Prior learning assessments involve an evaluation of skills and knowledge acquired from prior coursework or outside the classroom (i.e., workplace) for the purpose of recognizing mastery against a given set of standards, competencies, or learning outcomes. These assessments help students accelerate their learning and complete their programs of study without having to repeat course material on skills they have already mastered. In Round 3, several grantees focused on ensuring access to prior learning assessments for their participants who were veterans, a highly targeted population for the grant activities, to recognize the skills they gained through their military experience and help them complete programs of study more quickly.

Use of prior learning assessments for veterans involved review of transcripts and faculty advising and institutional coordination.

Six grantees implemented prior learning assessments for veterans by reviewing military transcripts or providing tailored approaches.³⁷ For example:

- **Iowa Western Community College** used military transcripts as the basis for the prior learning assessment review and to facilitate streamlined entry and exit points in the grant-funded program for veterans (de la Mora et al. 2017).
- **Northern Wyoming Community College** implemented a process to offer credit for prior learning for skills and experience gained in the military (Woodke, Graf, and Driessen 2017). When a military veteran expressed interest in one of its programs, the staff pulled the joint services record to identify opportunities for alignment and credit.
- At **Lewis and Clark College**, veterans registered for a one-on-one course in which a faculty member worked with each individual to assemble a prior learning assessment portfolio that could be evaluated for credit (Anonymous 2016).
- Across the **Northcentral Technical College** consortium, the colleges created standardized prior learning assessment strategies for veterans, working to streamline existing prior learning assessment processes and marketing opportunities to veterans through online tools (Smith et al. 2017).

Four evaluations highlighted that individual and institutional factors may have inhibited full implementation of prior learning assessments. Perceived challenges with implementing prior learning assessments included:

- Charging participants based on credit hours awarded, which might dissuade students from pursuing prior learning credit as they would still have to pay for the same amount of credits and not realize any financial benefit (**Mount Wachusett Community College**) (Negoita et al. 2017);
- Limited uptake of prior learning assessment by incumbent workers due to lack of employer initiative or incentives for employees to improve their skills (**Southwest Arkansas Community College**) (Anonymous 2017b);
- Returning veterans' career interests changing as they sought training and career opportunities and the prior learning assessment based on military experience not applying to program of interest (**Northern Wyoming Community College**) (Woodke, Graf, and Driessen 2017); and
- Institutions not accepting prior learning credit awarded at another institution as a form of transfer credit (**Macomb College**) (Lewis-Charp et al. 2016).

3.4 Support Services for Participant Success

In addition to academic supports, Round 3 grantees provided non-academic support services, including career and employment services, to help participants persist and complete their programs of study and connect them to employment. By improving access to personal supports, grantees and their partner colleges could reduce barriers to progress towards completing certificate and degree programs. Based on a survey of all Round 3 colleges that received grant funding, 72 percent of colleges provided case management and proactive advising to participants to help them access services (Eyster et al. 2020).

³⁷ Bellingham Technical College used/implemented PLAs for veterans but there was no description of the approach.

About 90 percent of colleges also provided career and employment services, often led by career navigators and coaches.

Grantees varied in their design and implementation of approaches used to support persistence and completion and connections to employment. Approximately 80 percent of the Round 3 third-party evaluations highlighted grantees that implemented support services for participants. This section highlights the implementation findings from these evaluations on how grantees provided access to services that supported participant success during the grant period.

Grantees created or enhanced centers for participants to provide an integrated or “bundled” set of services to support enrollment, persistence and completion, and employment.

Four grantees established grant-funded centers or support teams to provide access to these supports. These centers offered participants a range of services to support persistence and completion and connections to employment. They typically included a counselor/advisor/case manager to work directly with the participants, assess their needs, and coordinate services. The four grantees and their grant-funded centers are:

- The *LB iLearn* initiative at **Linn-Benton Community College** offered a suite of support and career services to ensure that students received support in a remote learning environment. At the outset, all incoming completed the student orientation, which addressed expectations, the online learning environment and platform, support services, and goal setting. Multiple staff provided services in a remote environment. A student navigator provided assistance from application through completion. Subject matter experts helped students master *iLearn* content; assessment evaluators graded assignments and provided feedback. Information technology support staff assisted student with the Canvas learning management system and online delivery platform. Proctors assisted with assessments. Additional services were provided through the Learning and Career Center, the Learning Annex for tutoring, and counseling services (Thomas P. Miller & Associates 2017a).
- Student support services provided by colleges in the **Great Falls College** consortium included coaching, workforce navigators, and developmental education. Services included InsideTrack coaching and embedded math instruction offered at five of the participating colleges. The consortium also developed an integrated set of student supports including workforce navigators who worked with students and/or employers at all colleges except one. Staff found these supports beneficial, with at least half of the colleges observing increases in student enrollment, retention, and success that they attributed to one of more of these services. Colleges with a workforce navigator found the position useful for supporting students in career programs, building connections with employers, and student placement (Feldman et al. 2017).
- **Cincinnati State Technical and Community College** built upon and enhanced the Pathway to Employment Center, a student supportive services concept originally designed through the college’s Round 1 TAACCCT grant. Center staff provided support to students as needed, working with them through all program phases (i.e., recruitment and enrollment, retention, completion, and employment services) (Belville et al. 2017).

- **Gateway Community College** implemented a student support model, which incorporated training materials and best practice guidelines, including both internal and external outreach activities. The *IMPACT* model provided seamless services for students through a cooperative arrangement between the offices of student and academic affairs and offered comprehensive, personalized support. The intake process was the first step of one-on-one support for *IMPACT* participants. Once enrolled, students received advising on pathways and next steps to improve continuous enrollment to completion. The *IMPACT* team developed and implemented purposefully designed orientation sessions and proactive advising. Through direct outreach and intrusive advising, staff and faculty provided an array of supports, including goal setting, encouragement, advising, information sharing, soft skill development, and career planning. The college also used student mentors to support participants' progress, along with automated email reminders to nudge or prompt them. Participants received career planning, including resume development and practice interviews. Pathways maps showed participants the jobs and the starting salaries for each of the seven accelerated career pathways offered. Participants also received help with finding work-based learning opportunities. Perceived as a "quiet success" of the *IMPACT* project by staff interviewed, the evaluation noted that the model reinforced the commitment to helping participants become lifelong learners (Jensen, Horohov, and Waddington 2017).

Dedicated staff, often working one-on-one with participants, provided counseling and advising as well as coordination of comprehensive, individualized support services to help participants persist in and complete their programs of study.

Ten grantees offered comprehensive, individualized supports to diverse students using dedicated staff (i.e., career navigators, success coaches, student services specialists, completion or success coaches, advisors). Staff worked one-on-one with participants from program intake to completion, addressing all aspects of the participant's experience and academic, personal, and career needs. Common supports were educational planning and advising (such as course selection and program planning), referrals to services (for tutoring, testing, career services, counseling, and financial aid), assistance connecting to work-based learning or internship opportunities, career advising, ensuring job readiness (through resume writing, mock interviews), and assistance with job searches and placement. Examples of grantees with dedicated staff to provide supports include: **Bellingham Technical College** (veterans services coordinator), **Century College** (career navigators); **Cleveland Community College** (success coach); **East Mississippi Community College** (navigators); **Mesa Community College** (career navigator); **Midlands Technical College** (career coaches); **Nashua Community College** (success navigators); **Ozarks Technical Community College** (career navigator); **Saddleback College** (student services specialist); and **Southeast Community College** (transitions advisor) (Blume 2017; Center for Applied Research 2017; Good and Yeh-Ho 2017; Harpole 2017; Mittapalli et al. 2017; Nanda et al. 2017; NC State Industry Expansion Solutions 2017; Pacific Research & Evaluation 2017a; Swanson 2016; Thomas P. Miller & Associates 2017c).

Two grantees provided targeted support services to veterans, one focused on targeted assistance from a career navigator and the other focused on wraparound supports. They are:

- At **Mesa Community College**, the career navigator provided participants with a wide range of support services (Nanda et al. 2017). This included identifying sources for and obtaining financial aid, working with veterans to access their benefits, helping participants address childcare issues, and providing job search assistance.
- For the Building Nursing Pathways program, **Bellingham Technical College** implemented an evidence-based coaching, mentoring, and student services that supported persistence and retention, especially for veterans (Blume 2017).

At some of these grantees, staff also used technology to support their work with different types of participants, such as veterans, TAA-eligible, and rural students. For example:

- Navigators at **East Mississippi Community College** used WorkKeys and Accuplacer assessments to gauge the career focus and skills of veterans and TAA-eligible and dislocated workers (Harpole 2017).
- The career navigator at **Mesa Community College** used specialized software to explore career options and skill requirements for specific jobs and training options (Skillful) and to help participants select courses that aligned with their desired career pathway (Viridis) (Nanda et al. 2017).
- To serve rural students throughout the state, the outreach coordinators at the **University of Alaska Southeast** regional campuses supported students in the use of virtual student services for tutoring and advising (Madden Associates 2015).
- At **Cleveland Community College**, the success coaches helped participants that were TAA-eligible workers with career-based assessments such as certification examinations and pre-employment screenings (NC State Industry Expansion Solutions 2017).

At four grantees, the support staff worked in tandem. They provided complementary supports for persistence and completion and connections to employment or addressed different phases of the educational experience. These approaches paired: an intrusive advisor and internship coordinator at **Iowa Western Community College**; a career coach and a recruiter at **Midlands Technical College**; a completion coach and outcomes and data specialist at **Pellissippi State Community College** (see box 3.3 for more details); and an on-site academic advisor and a remote outreach coordinator at **University of Alaska Southeast** (de la Mora et al. 2017; Madden Associates 2015; Nanda et al. 2017; Takyi-Laryea et al. 2017). Staff typically had a clear division of labor and responsibilities at points along the intake/assessment, course work completion, and job search continuum.

BOX 3.3

Pellissippi State Community College's Combination of Support Staff and Roles

At Pellissippi State Community College student support services were offered throughout the consortium by completion coaches and outcomes and data specialists. In some cases, these two positions served distinctly different roles, in which completion coaches primarily supported participants from program recruitment through program completion, while outcomes and data specialists entered and tracked participant data. In other instances, project staff shared the responsibilities of the two roles. Student support services typically included enrollment and scheduling, advising, referrals to existing campus and community services, career readiness services, and connecting students to job opportunities (through on-campus career services, job fairs, employer partners, workforce boards, and websites). According to the evaluation findings, contact with a completion coach role at Pellissippi State Community College was associated with higher levels of degree and certificate completion (with 23 percent of degree seekers and 38 percent of certificate seekers who had contact with a coach completed their programs, compared to 8 percent and 24 percent, respectively, of those who did not have coach contact) and wage increases (86 percent of completers with coach contact compared to 69 percent of those with no coach contact). In focus groups, participants reported the coaches helped them succeed in their courses and prepared them for employment opportunities.

Source: Takyi-Laryea et al. 2017.

Other evaluations linked participant success with using dedicated staff. For example:

- The evaluation for **Cleveland Community College** found “positive student perceptions of support services and their overall success in college. Participants at all partner colleges indicated that the support they received helped them in their career” (NC State Industry Expansion Solutions 2017, p. 85).
- At **Midlands Technical College**, the evaluation found that students interacted with career coaches on a weekly basis and communicated in focus groups that the assistance of the coach was critical to their success. Eighty-seven percent of current participants and 90 percent of completers were satisfied with the assistance they received from their career coach (Center for Applied Research 2017).
- The student services specialist at **Saddleback College** was responsible for recruiting participants for the healthcare programs and providing them with academic and career guidance. The evaluation found that participants viewed the information shared about financial resources and workshops conducted by student services specialist positively. Support provided by the student services specialist was reported to be critical in helping participants transition from education to the workforce (Pacific Research & Evaluation 2017a).
- The combination of career navigator and intrusive advising at **Ozarks Technical Community College**, focused on coursework, job search, and other academic matters, helped students persist in and complete their grant-funded program (Mittapalli et al. 2017).
- At **Southeast Community College**, use of an “intrusive” coaching approach to provide academic, career and personal/social support was essential for student achievement. The

evaluation found that a majority of students participated at least once per month in coaching. The coaching model was successful in working with across adult learners in multiple ways, such as providing information on the certificate program, advising on jobs and careers, and assistance with personal or social issues (Shain and Grandgenett 2017).

Use of wraparound approaches provided participants with individualized supports to meet academic and non-academic needs.

Five grantees used dedicated, grant-funded staff to provide wraparound services to participants. Wraparound services is a term for supports to participants – personal, academic, financial and employment – that, when combined, also help them persist and completion programs. For example:

- **Macomb Community College** had their career coaches coordinate services such as academic advising, career counseling, and job search and placement assistance and provide referrals to personal and financial supports such as child care, transportation and financial aid (Lewis-Charp et al. 2016).
- For the **Midlands College** consortium, the backgrounds of the coaches differed slightly, so participants at some colleges received more personal counseling and others received more career-focused assistance (Center for Applied Research 2016).
- At six of the 12 member colleges in the **Broward Community College** consortium, staff relied on community partners to provide wraparound supports and help address unmet needs (Bruch et al. 2017).

4. Engaging Employers

Employer engagement was an important component of the TAACCCT grant program, including Round 3. Institutionalizing employer engagement and the role of employer, especially in developing work-based learning opportunities and sector strategies, was a primary focus of the Round 3 grants, with the grant announcement calling for applicants to demonstrate employer engagement in the application process (p. 2).³⁸ To date, there is evidence that TAACCCT has successfully encouraged colleges to build and enhance relationships with employers (Scott et al. 2018).³⁹

This chapter synthesizes findings from the third-party evaluations on how Round 3 grantees engaged employers. The evaluations show that grantees provided employers in the community with a pipeline of applicants who were trained for in-demand occupations, and colleges benefited from employers' expertise and investment in the programs of study. Regardless of the targeted industry, all grantees made some level of effort to engage employer partners. That level of engagement varied from less intensive, where employers were working in an advisory capacity, to more intensive strategic partnerships.

4.1 DOL's Employer Engagement Framework

The discussion of the implementation findings on employer engagement in this chapter is organized

KEY FINDINGS

- Grantees engaged employers on advisory boards, asking them to provide feedback on labor market needs and partner surveys.
- Grantees successfully engaged employers as advisory partners to develop and adapt curriculum to reflect in demand skills.
- Employer advisory partnerships could be time intensive but necessary for sustaining the partnerships.
- Employers as hands on partners seemed to help to increase participants' exposure to career opportunities and develop their technical skills.
- Hiring an employment coordinator or community liaison appeared to enable grantees to more successfully engage businesses and other local partners as hands on partners, leading to additional opportunities for participants.
- Grantees faced perceived challenges in engaging employers to develop short term work based opportunities for some occupations.
- Employers who served as strategic partners provided various resources to the programs, including equipment, financial support for participants, and commitments to hire interns or graduates, making a tangible investment in programs' success.
- Employers involved as strategic partners in the design of grant funded programs and credentials seemed to help ensure participants completed programs with marketable skills.
- Grantees brought employers into local and regional strategic workforce initiatives and partnerships.

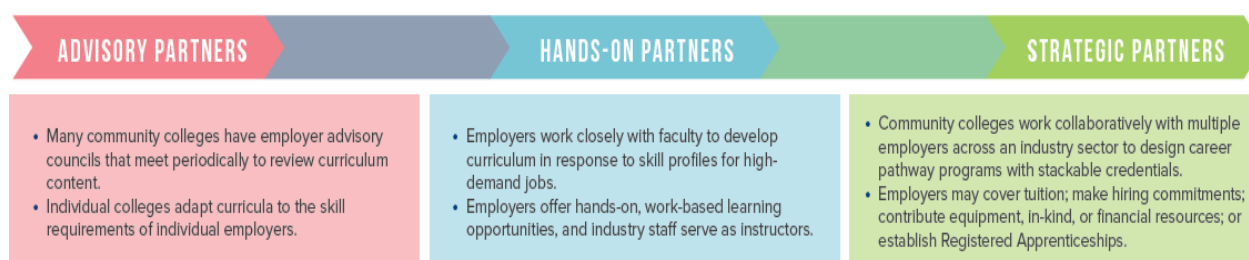
³⁸ For more information on the Round 3 requirements for third-party evaluations, see p. 2 in "Notice of Availability of Funds and Solicitation for Grant Applications for Trade Adjustment Assistance Community College and Career Training Grants Program" at https://doleta.gov/grants/pdf/taaccct_sga_dfa_py_12_10.pdf

³⁹ See DOL 2016 brief, "TAACCCT is deepening employer engagement" at https://doleta.gov/taaccct/pdf/TAACCCT_Fact_Sheet_Employer_Engagement_10.21.2016.pdf

according to the role employers played in their partnerships with colleges involved in the Round 3 grants. It is directly informed by DOL’s framework describing how TAACCCT has deepened employer engagement, from the involvement of employers as advisory partners to strategic partners, as shown in figure 4.1 below. The framework describes how employers and grantees engaged in partnerships, which can be generally grouped according to three employer engagement strategies: 1) advisory partners; 2) hands-on partners; and 3) strategic partners.⁴⁰

FIGURE 4.1

TAACCCT Employer Engagement Strategies



Source: TAACCCT Fact Sheet: TAACCCT Is Deepening Employer Engagement, https://doleta.gov/taaccct/pdf/TAACCCT_Fact_Sheet_Employer_Engagement_10.21.2016.pdf.

Employers who serve as **advisory partners** have a less intensive level of involvement in a grant-funded project. An advisory partner might help review curricula as part of participation on an advisory committee or board convened by the college. Colleges then adopt this curriculum to meet the needs of individual employers. **Hands-on partners** are more deeply involved as they help to implement and operate projects. These employer partners are more directly invested, such as providing apprenticeship, internship, and job shadowing opportunities for participants or offering to work closely with faculty on curriculum design. **Strategic partners** are the most involved, as a group of employers work closely with the college to design programs, and make a substantial investment (via time, hiring commitments, equipment, or other monetary support) to the sustainability of their partnership with the college.

These strategies are not mutually exclusive, and often build upon one another. For example, an employer that is a strategic partner is likely to also serve in an advisory and hands-on role, because to be involved in the design of the program often involves extensive curriculum review and providing work-based learning opportunities for participants at an employer’s job site. And employers who are advisory and hands-on partners can progress to playing a strategic role to help drive systems changes, as shown in figure 4.1.

⁴⁰ For more information and previous examples of TAACCCT-funded employer engagement, see: https://doleta.gov/taaccct/pdf/TAACCCT_Fact_Sheet_Employer_Engagement_10.21.2016.pdf

4.2 Employers as Advisory Partners

The most common type of employer engagement in the Round 3 grants was the advisory partner, which involved providing feedback on program curriculum and labor market needs. Employer engagement via advisory partnerships tended to be successful when project staff could dedicate the time needed for building and sustaining relationships, a common theme across the strategies. The incidence and number of advisory committee meetings differed by grantee, with some industry partners convening as part of an advisory group annually, and others meeting quarterly or on an as-needed basis.

Employer advisory partners provided feedback to colleges on a recurring basis, via advisory boards. Colleges worked with advisory partners in the curricula review process to inform the adaptation of curriculum to the skill requirements and needs of employers. Advisory partners often contributed their recommendations on equipment purchases and the supplies students should purchase to be well equipped beyond their time in the classroom for work in the field.

Meetings of employer advisory boards were often hosted and sponsored by the college partner. As described in the evaluations, approximately three-quarters of the grantees convened employer advisory boards to collect feedback on their program and consider updates to their program curriculum. This section highlights the findings from the evaluations on employers as advisory partners.

Grantees engaged employers on advisory boards, asking them to provide feedback on labor market needs and partner surveys.

Nearly all grantees engaged employers using advisory boards. They held meetings of advisory boards to provide an opportunity for employers to provide insight into in-demand skills, training, and certifications needed in targeted industries and occupations. Two grantees involved employers as advisors in the planning stage. For example:

- In the **Southwest Arkansas Community College** consortium, employers were involved in advising early in the grant period (Anonymous 2017b).

The extent of involvement in the planning phase varied based on each employers' pre-existing relationship with the colleges in the consortium. Grantees consulted employers on: 1) ensuring that in the process of renovation or purchasing new equipment, specifications were in line with industry recognized standards; 2) reviewing curricula to provide input on existing programs; and 3) developing new program content that built off of pre-existing relationships and advisory councils in place prior to the grant. For example:

- At **Mesa Community College**, project staff utilized two partner groups, an advisory team and an executive committee to provide input on program activities and implementation (Nanda et al. 2017). The 180-member advisory team was designed to collect input at a high level on program development and implementation, while the 52-member executive committee was tasked with implementing action items such as developing partnerships. Manufacturing companies and industry organizations were represented on each team, and according to the evaluation report, "instructors and employers agree that these efforts have been successful in development programs that better meet the needs of employers" (p.19).

In addition to hosting employer advisory boards, grantees engaged employers as advisory partners by requesting employer feedback via a partner survey or needs assessment to collect further feedback on required skills, industry trends, and their experience partnering with grantees. For example:

- **Purdue Northwest University** used a survey of 170 individual representatives from companies in the advanced manufacturing sector for initial outreach (Rucks & Schwob, 2017).
- **Iowa Western Community College** also fielded two employer surveys during the grant period, to better understand how well the program produced individuals with the skills considered necessary for hire by local companies, including questions about internships, part-time work experiences, employment of students who participated in the grant project, and other available opportunities for students (Research Institute for Studies in Education 2017).

Grantees perceived that their efforts to engage employers as advisory partners helped them to develop and adapt curriculum to reflect in-demand skills.

Employer advisory partners participated extensively in curriculum review, which led to improvements in colleges' program coursework by aligning curriculum with the needs of industry. For example:

- Active engagement of employers by colleges in the **Macomb College** consortium allowed for revisions to curriculum and training programs that met industry standards (Lewis-Charp et al. 2016).

Box 3.1 provides an additional example of how one college incorporated curriculum review as a primary activity of their advisory board.

BOX 3.1

Nashua Community College's Use of Employers to Review Curriculum

At Nashua Community College, an advisory board engaged employers to review the curriculum, program format and model, tools and equipment, and the development of courses and certificates. When interviewed about the role of the advisory board, one instructor commented, "it's been helpful to have a mix of people to act as a sounding board and think about new ideas to get involved in the industry. [We have] picked up several partners that we did not have, and it's helped get partners that we already had [involved in the program] get excited again" (p. 39).

Source: Thomas P. Miller and Associates, 2017.

Other grantees noted the importance of engaging employers as curriculum advisors. For example:

Across the **Century College** consortium colleges, each institution had an advisory board that included a majority of industry representatives. Advisory boards and project partners were "predominantly engaged in reviewing curricula and providing input on industry needs pertaining to curriculum content and skills," with these partners described as integral to the implementation of the consortium's project activities (Good and Yeh-Ho 2017, p. 11).

- When commenting on the role of the advisory board in providing input and recommendations on program content, one report noted that it was the most critical contribution made to their grant-funded program (**Butler County Community College**) (Kansas State University 2017).

Grantees who did not incorporate employer input into curricula early enough in the grant period may have suffered from a lack of employer buy-in regarding the skills participants could contribute. For example:

- **Essex County College** staff noted that a college’s “insufficient employer engagement in the program’s early stages with curricula review lead to adverse consequences later on,” including minimal opportunities for internships (Giordano and Holcomb 2017, p. 20).

Employer advisory partnerships could be time-intensive but necessary for sustaining the partnerships.

Three grantees reported that sustaining advisory partnerships could be time intensive for project staff, who were tasked with organizing and facilitating meetings on a semi-regular basis. Advisory partners had to be engaged and convened frequently enough to provide up-to-date input given the evolving needs of industry. When colleges were not able to maintain consistent contact with their advisory partners due to staff turnover or other reasons, infrequent engagement of advisory councils led to employer engagement efforts falling off. In addition, slow project start-up and initial implementation delays impeded the sustained engagement of employers as advisory partners. For example:

- The delay between the time when the **Northcentral Technical College** project was proposed and implementation contributed to a lack of employer interest once the program was available (Smith et al, 2017). Unique events were created for employers to connect with students to remediate and overcome this challenge.
- At **Pellissippi State Community College**, employer engagement was a challenge for program staff that sought to keep employers engaged through program delays and struggled with employers losing interest due to frequent requests from the college to participate in activities and events (Takyi-Laryea, et al. 2017).

When small businesses comprised a majority of the employer partners in an area, engaging employers in an advisory role was also more difficult. It was challenging for the college to initially connect and set up partnerships with small businesses that have a limited number of people on staff who can dedicate their time to partnering with a grant-funded project. In addition, small businesses typically have fewer job placements available to allocate to program graduates. For example:

- **Great Falls College** experienced difficulty establishing and sustaining post-employment training that was a component of their grant-funded program because of limited demand among small businesses prevalent in the state and ongoing costs associated with employer outreach (Feldman et al. 2017).

In some instances, local economic factors were difficult to overcome. Challenging economic conditions could make the upfront investment of time and resources required to conduct outreach and maintain ongoing engagement with employer advisory partners even more difficult. In some cases, major economic shifts impacting local labor market demand were not anticipated by employers or

grantees. These economic events affected the availability of specific jobs during the grant period. For example:

- Changes in the mining industry affected local economic prospects for students enrolled in the grant-funded programs at **Northern Wyoming Community College** (Woodke, Graf, and Driessen 2017).
- In addition, students in programs at **Delaware Technical Community College** were faced with applying for a limited number of jobs in the food industry that were seasonal in nature (Hofstetter 2017).
- In a more extreme example, the ongoing financial crisis in Puerto Rico, exacerbated by the impact of Hurricane Maria in 2017, led to many companies closing operations, affecting the availability of jobs for participants and jobseekers more broadly on the island (**Colegio Universitario de San Juan**) (Franco 2017).

4.3 Employers as Hands-On Partners

Employers that worked in coordination with the grantees to serve as hands-on partners increased participants' awareness of career opportunities and helped participants develop technical and professional skills. Some grantees found it helpful to have a member of their staff assigned to maintain relationships with employers and seek out connections to more successfully engage employers as hands-on partners, developing additional hands-on experiences for students. Key challenges in the implementation of hands-on learning opportunities included employer perceptions of desirable work-based learning opportunities and student willingness to participate in such experiences, given their other commitments.

Hands-on employer partners engaged more intensively with grantees, going beyond the curricula review process to develop curriculum with colleges that reflect the jobseeker skills that are needed to be successful in high-demand jobs. Hands-on partners donated their time and skills to train students in the classroom by serving as instructors, provide on-the-job training and hands-on learning experiences, and other work-based learning experiences. Employers who served as hands-on partners may participate in job placement and curriculum development, develop agreements for hosting internships and apprenticeships, provide career guidance and participate in job fairs. They are also involved in the resume review process and in serving as mentors for program participants.

Approximately two-thirds of the Round 3 third-party evaluation reports described their employer partners playing a hands-on role in the implementation of their grant-funded projects. This section highlights the findings from these evaluations about employers as hands-on partners.

Employers as hands-on partners seemed to help to increase participants' exposure to career opportunities and develop their technical skills.

One of the main ways employers contributed to the grant-funded projects was providing opportunities for participants to engage in career-oriented experiences, such as visiting simulation labs and career

exploration camps, and participating in work-based learning opportunities. One way they did this was through creating events to bring together employers and participants. For example:

- A variety of career camps involving local employers at **Southeast Technical Institute** helped to increase exposure to health career opportunities and promote exposure between employers and students (Swanson 2016). Healthcare providers conducted presentations to coincide with tours of simulation labs, and "learning lunches" brought employers together around a common interest or concern.
- **Gateway Community and Technical College's** employer partner hosted a logistics forum that identified training needs aligned with logistics credentials (Jensen et al. 2017).

Box 3.2 provides an example of how career fairs enabled the creation of informal partnerships with employers.

BOX 3.2

Using Career Fairs to Bring Together Employers and Participants

At the University of the District of Columbia Community College, project staff hosted career fairs to engage employers and the college offered space to host classes to increase interactions between industry and students. "Increasing opportunities that allowed face-to-face interactions between students and employers provided students a realistic view on what construction and hospitality jobs require and gave them an opportunity to ask questions" (p. 34).

Source: Takyi-Laryea, Passa, and Gall 2017.

Work-based learning experiences employers provided included on-the-job training, internship, and clinical (for healthcare) experiences. These opportunities were some of the most valuable parts of the program, according to participants. For example:

- Participants at **Bellingham Technical College** expressed that they felt competitive in the labor market at the end of the program and acknowledged the importance of these clinical experiences as being critical to their success (Blume 2017).
- **Butler County Community College** had several industry partners that were involved in participant internship placements (Kansas State University 2017). According to participants, providing internships or other training opportunities were among the most valued contributions.

Hiring an employment coordinator or community liaison appeared to enable grantees to more successfully engage businesses and other local partners as hands-on partners, leading to additional opportunities for participants.

Fourteen grantees used their grant funds to support an employment coordinator or community liaison to have a staff member designated to forging relationships with businesses and other local partners as part of their programs. These grantees found that having a person on staff in this role helped develop

more hands-on experiences with employer partners and also allowed grantees to sustain those opportunities, by assigning someone responsible for keeping up the communication and engagement with the employer. For example:

- For the **Community College of Rhode Island**, the loss of a staff member tasked with coordinating communication between employers and faculty could be an impediment (Singer 2017). Faculty relationships with industry were important, but the evaluator recommended a more formal staff position tasked with maintaining relationships with employers.

Relying on a staff member hired by grant funds to serve as a primary liaison between the college and employers could be risky in the absence of sustained funding.

- **Long Beach City College** noted that, as a result of the staff positions supporting industry partnerships being grant funded, “there will no longer be funds in place to support critical ongoing relationship development and maintenance” (Schiorring et al. 2017, p. 26).

Grantees faced perceived challenges in engaging employers to develop short-term work-based opportunities for some occupations.

Some employers playing a hands-on role found it difficult to provide internships due to the nature of the occupation. In certain industries such as information technology, short-term, on-the-job training in a cybersecurity occupation could require background checks and other screening requirements that were not feasible for an employer. For example:

- **Community College of Baltimore County** staff noted that some information technology contractors required employees to have security clearances—a cost that they are unwilling to cover for temporary hires (Nicholas et al. 2017).

Internship opportunities could also be difficult to embed into the curriculum, particularly if employers anticipated that providing the opportunity will be particularly time- or resource-intensive. For example:

- At the **College of Central Florida**, 120 companies provided internships to participants, and more than one-third of those students were offered a job at the same firm (Swan et al. 2017). However, only one of the colleges in the consortium was able to embed the internship into the program it developed due to employer concerns about the resources needed to provide these opportunities.

The potential financial commitment required for an employer to offer an apprenticeship opportunity was also a concern. For example:

- **Mesa Community College** described the results of a survey that found that employers can have the misperception that offering apprenticeships will be a large expense in terms of staff time and a sustained monetary commitment (Nanda et al. 2017). One of the reasons employers did not want to offer apprenticeships was due to a perception that apprenticeships were affiliated with unions. In addition, participants had concerns about apprenticeships that could have contributed to the program’s difficulty filling available appointment slots, including limited interest in apprenticeships. In addition, participants may not have been aware of work-based learning opportunities or interested in taking on an additional commitment by working while being enrolled in the grant-funded program. At the same time, limited knowledge of and

interest among students to participate in internships and apprenticeships was a concern at a few colleges, due to low wages and the ongoing demands of participating in programs.

4.4 Employers as Strategic Partners

Based on the DOL Employer Engagement Framework (figure 4.1), employers as strategic partners, the most intensive level of involvement between employers and colleges, involved employers in the design of grant-funded programs, often in a collaborative setting. Employers also contributed material investments via scholarships, equipment, and other resources in their role as strategic partners. Intermediary organizations also played an important role as a coordinator between the college and employer partners in facilitating effective sector partnerships.

Strategic partnerships with employers can be the most intensive kind of employer engagement for grantees, going beyond a commitment to review curriculum and working with grantees to serve as a hands-on partner. Strategic partnerships between grantees and employers were more likely to resemble formal sector partnerships, where colleges, employers, and organizations in the local community, such as the public workforce system, worked together to drive systems change and achieve desired outcomes.

Based on the third-party evaluation reports, approximately one-third of grantees indicated that their employer partners played a strategic partnership role in the implementation of their grant-funded projects. This section highlights the findings from these evaluations about employers as strategic partners.

Employers who served as strategic partners provided various resources to the programs, including equipment, financial support for participants, and commitments to hire interns or graduates, making a tangible investment in programs' success.

Making financial commitments was one way that employers demonstrated their willingness to participate as strategic partners, institutionalizing their investment in the grant-funded program likely to last beyond the end of the grant period. For example:

- Employers at **New Mexico Junior College** also provided important financial support including scholarships and training funds (UNM Center for Education Policy Research 2017).
- One of the **Southwest Arkansas Community College** consortium's employer partners was willing to pay 75 percent of tuition for students in the transfer curricula that was developed for one of the programs (Anonymous 2017b).
- At the **University of Alaska Southeast**, employers helped with the design of degree structures, in addition to making robust commitments to help provide financial supports for students via scholarships and other funding streams (Madden Associates 2017).

Another way that employers served as a strategic partner was to hire graduates of the grant-funded programs receiving training in their industry. The commitment to hire students for internships,

apprenticeships, or full-time positions looked different at each college that engaged employers as strategic partners. This commitment might be via a hiring agreement or agreement by an employer to participate as a job site for a grant-funded course that involved work-based learning. For example:

- According to a student internship survey of **Iowa Western Community College** participants, 79 percent of the participants surveyed after being placed in information technology positions reported that they were paid between \$10-\$15 per hour for their work during the internship (Research Institute for Studies in Education 2017). A survey of employer partners at the grantee noted that 67 percent of the employers who responded to the survey had hired between 1 and 5 participants from the program over a five-year period.

Grantees worked with employers to commit to interviewing graduates. For example:

- As a result of engagement through the grant-funded program and exposure with participants over time, employers that partnered with **California State University** committed to interviewing participants who had earned certificates (Tan & Moore 2017).
- Employer partners of the **Northern Wyoming Community College** District agreed to wait to hire students until they completed a degree or certificate, in order to incentivize completion of the grant-funded program. These employers were eager to hire program graduates and viewed the college as an important piece of the talent pipeline to recruit program graduates to support their ongoing workforce needs (Woodke et al. 2017).
- As part of their partnership with **East Mississippi Community College**, employer partners in the automotive repair and service industry gave preference in the hiring process to participants who completed the program and earned both their silver level Career Readiness Certificate and a Manufacturing Skills Basic course. The report notes that, “these companies value these credentials and have had success in hiring qualified companies that fit into the company culture” (Harpole 2017, p. 13).

The grantees had strategic employer partners that donated equipment. For example:

- The **BridgeValley Community and Technical College** evaluation highlighted that college leadership “relied on close connections with employers to facilitate programmatic developments through equipment donations” and that hands-on learning in the advanced manufacturing program involved working on equipment that was used in the industry (Thomas P. Miller & Associates and The Policy & Research Group 2017, p. 19).

Employers involved as strategic partners in the design of grant-funded programs and credentials seemed to help ensure participants completed programs with marketable skills.

Four grantees linked the involvement of employers in the design of the program and development of credentials to program graduates successfully finding employment upon completion of the program. For example:

- Employer input into program design at **Cleveland Community College** was considered a strength of the program. Course materials were created and enhanced to be responsive to employer needs, with course competencies informed by job task analyses with input from industry experts in addition to subject matter experts and contractors. Input into course competencies “led to high and low-stakes credentials being developed to support the stacked

and latticed credential goal of the program” (NC State Industry Expansion Solutions 2017, p. 115).

- At the **Kapiolani Community College**, employers provided input in the design of degree structures, which helped contribute to program sustainability (Pacific Research and Evaluation 2016).
- General Electric’s partnership with **Nashua Community College**, which involved strengthening and enhancing existing internship program collaboration, is another example. According to the college’s administrators, “students are coming out with marketable skills” (Thomas P. Miller and Associates, 2017, p. 40).

Employers also worked in partnership with colleges to develop grant-funded programs where they could send their own workers to receive specialized training, using facilities, machines, and curriculum that were relevant to their industry. For example:

- Employers partnering with the **Southwest Arkansas Community College** consortium supported colleges’ programs by referring their own employees, or incumbent workers, for training (Anonymous 2017). This was one way in which colleges developed customized or specialized training for employees to be tailored to business and industry demand.

Grantees brought employers into local and regional strategic workforce initiatives and partnerships.

At five grantees, project staff, regional employer associations, and other community-based organizations supported strategic partnerships by serving as intermediaries between the college faculty and employers. For example:

- **Cincinnati State Technical and Community College** leadership and employer partners recognized the positive effects created by Partners for a Competitive Workforce, an industry partnership and regional convener in the Ohio, Kentucky, and Indiana tristate region. As described in the evaluation:

“Partners for a Competitive Workforce works with a variety of education partners, including [the grantee], to help build talent pipelines in key industry areas, including manufacturing. Part of PCW’s efforts included identifying manufacturing-related training needs from regional employers, from which feedback for machine operator trainings (MO I and MO II) were created. Starting from a strong employer base, and continuing to grow employer connections, was key to receiving ongoing feedback. This allowed for innovations within the grant, including the creation of an Apprenticeship program” (Thomas P. Miller & Associates 2017) (p. 32).

- **Mount Wachusett Community College** staff involved employers as strategic partners by providing a conduit for employers to establish partnerships with regional employer associations (such as business roundtables) and the public workforce system (Negoita et al. 2017).
- **Great Falls College** encouraged employer participation in statewide meetings focused on sector strategies (for example, hosted by economic development agencies), which were a way for employers to get to know each other and increased visibility of colleges’ role in implementing sector strategies that elevated the grant-funded program and employers’ knowledge of initiatives at the college (Feldman et al. 2017).

Two grantees collaborated with the public workforce system to ensure grant-funded programs were aligned with industry needs and connected to existing sector partnerships:

- Project staff at **Cleveland Community College** highlighted the workforce boards' role as being key to establishing a connection to sector partnerships (NC State Industry Expansion Solutions 2017).
- At **Ozarks Technical Community College**, the local workforce development board coordinated a partnership with healthcare providers in the region and the college (Mittapalli et al. 2017). These partners communicated about the high-demand for healthcare workers and collaborated by providing referrals to and from the workforce system, notifying the college and workforce system of job opportunities with the healthcare providers, in addition to providing student internships at affiliated hospitals, and offering other training opportunities at the college.

5. Encouraging Collaboration across Colleges

This chapter focuses on Round 3 third-party evaluation implementation findings on collaboration across colleges to support systems change. Collaboration has been a theme throughout this report, both with stakeholders within and outside the college. This chapter discusses the multiple ways in which colleges collaborated as a part of the grant-funded activities, including: how grantees were involved in the implementation of statewide programs and policies, developed transfer and articulation agreements between colleges, shared best practices, used logic models and theories of change to guide implementation, and used and shared data with their consortium partners.

Nearly all Round 3 grantees indicated that collaboration across colleges was enhanced as a result of the grant and pointed to collaboration with other colleges as critical to the success of their grant-funded projects. In particular, grantees felt that the consortium structure motivated colleges to work together by providing a forum for program designers and faculty to come together.

5.1 Implementation of Statewide Programs and Policies

In the interest of uniformity around higher education requirements and competencies, some Round 3 grantees engaged in statewide alignment of programming. Some grantees took advantage of existing statewide policies, while others initiated the design and implementation of new ones. While statewide initiatives in Round 3 were relatively uncommon given the high level of coordination required, a handful

KEY FINDINGS

- Statewide efforts were largely focused on aligning curricula and programs of study, creating prior learning assessments, and leveraging existing transfer and articulation agreements.
- While transfer and articulation agreements were often difficult to negotiate and implement, grantees acknowledged that they were important for realizing project goals.
- Platforms for sharing best practices varied widely across grantees.
- Grantees leveraged their grant resources to share best practices with other grantees and colleges that did not receive grant funding.
- Grantees created detailed logic models that enhanced the success of their programs by serving as a tool for guiding program implementation and evaluation or as a strategy for assessing fidelity to program design.
- Grantees used data mainly for program improvement and monitoring student progress and outcomes, but faced perceived challenges in accessing data.

of grantees found success.⁴¹ This section highlights the implementation findings on how grantees collaborated with colleges across a state to develop curriculum, programs of study, and policies.

Statewide efforts were largely focused on aligning curricula and programs of study, creating prior learning assessments, and leveraging existing transfer and articulation agreements.

Two grantees implemented statewide curriculum as a part of their grant projects:

- In an effort to facilitate collaboration among college faculty and to simplify student transfer, the **Great Falls College** consortium made statewide curriculum alignment a priority during the grant period, using industry-recognized credentials to create consistency across colleges in terms of learning objectives and content (Feldman et al. 2017).
- The **Northcentral Technical College** consortium, which encompassed all 16 colleges in the Wisconsin Technical College Schools (WTCS) system, held a stakeholder meeting facilitated by the Worldwide Instructional Design System to establish a statewide set of core competencies for the computer literacy course. At the meeting, representatives from all 16 WTCS colleges collaborated with workforce partners to establish 11 core competencies for the course (Smith et al. 2016). One extension of implementing statewide curriculum was ensuring credits could transfer across colleges.

While most colleges in a consortium pursued prior learning assessments individually, a few had facilitated or were in the process of facilitating statewide prior learning assessment policies. Primary motivations for streamlining prior learning assessment policies were to recruit more veterans and to ensure the transferability of credits to other community colleges and to four-year universities. For example, three grantees worked with the Council for Adult and Experiential Learning (CAEL) to implement their prior learning assessment policies according to nationally-recognized standards. They also collaborated with their state's higher education system to ensure that PLA were implemented consistently statewide. For example:

- **Great Falls College** successfully encouraged the state Board of Regents to pass a statewide prior learning assessment policy based on CAEL standards (Feldman et al. 2017).
- **Central Maine Community College** ensured that its member colleges were able to comply with state and national requirements by offering CAEL webinars and conferences to grant staff and by creating a prior learning assessment learning community made up of representatives from each campus (Horwood et al. 2017).

Box 5.1 offers a third example of prior learning assessment adoption that was designed to help the state expand prior learning assessments across colleges.

⁴¹ The Round 4 grants focused more on statewide collaboration through the consortium model than in previous rounds. See the Round 4 grant announcement for more information at <https://www.doleta.gov/grants/pdf/SGA-DFA-PY-13-10.pdf>.

BOX 5.1

The Potential for Statewide Expansion of Prior Learning Assessment in Rhode Island

The Community College of Rhode Island worked with CAEL to customize its prior learning assessment to the college's specific needs. This model was a huge success, with preliminary data indicating that the college was serving 40 percent more military personnel each month and awarding military personnel twice as many credits in comparison to previous years. In the final report, the Postsecondary Commissioner of Rhode Island and the governor's office had shown significant interest in expanding the approach statewide, and a meeting was planned to discuss moving the process forward.

Source: Singer 2017.

Instead of creating new transfer and articulation agreements as most grantees did, four grantees were able to take advantage of existing statewide agreements:

- In North Dakota, **Gateway Community and Technical College** was able to capitalize on state legislation that required all institutions offering associates degrees to have articulation agreements with the state's public four-year institutions (Jensen, Horohov, and Waddington 2017).
- Wisconsin also developed a statewide articulation agreement between all 16 colleges in the state system as a part of **Northcentral Technical College's** grant (Smith et al. 2016). One member college in this consortium sought to help participants take advantage of these agreements by creating portal websites that allowed participants to calculate their transfer credits.
- In Ohio, **Cincinnati State Technical and Community College** enjoyed the benefits of the state Transfer Assurance Guide (TAG), which was created to ensure that all TAG-approved courses and credits could be transferred to any state public institution of higher education (Belville et al. 2017).
- For the consortium led by **Cleveland Community College**, the Comprehensive Articulation Agreement in North Carolina established a set of general education credits that can be articulated from the state's community colleges to any four-year institution (NC State Industry Expansion Solutions 2017). Having this agreement greatly eased the process of establishing articulation agreements between its Associate of Science degree program and the University of North Carolina-Charlotte Bachelor of Science programs.

5.2 Transfer and Articulation Agreements

Beyond the small number of Round 3 grantees that were able to capitalize on existing state transfer and articulation agreements (as described above), nearly all Round 3 grantees established new agreements with two- and four-year colleges to further the development of career pathways. Only three grantees created consortium-wide transfer agreements, but many grantees were successful in establishing articulation agreements with four-year institutions. This section highlights the implementation findings

on how grantees and colleges – both grant-funded and other institutions – collaborated to develop and strengthen transfer and articulation agreements.

While transfer and articulation agreements were often difficult to negotiate and implement, grantees acknowledged that they were important for realizing project goals.

Three grantees sought to secure consortium-wide transfer agreements to make it as easy as possible for adult learners to participate in grant-funded programs to advance in their education, given the exigencies of their lives:

- The **BridgeValley Community and Technical College** consortium implemented cross-college transfer agreements to enable students to change campuses without losing the credits they had earned (Thomas P. Miller & Associates and The Policy & Research Group 2017).
- The **Macomb College** consortium struggled at first to realize its vision for articulation, finding it difficult to coordinate across multiple colleges and encountering resistance to standardization across colleges among some faculty members (Lewis-Charp et al. 2016). The consortium was eventually able to sign a cross-college memorandum of understanding for transferring credits between all member colleges, which was beneficial to participants who relocated or wanted to take more advanced courses at other colleges.
- The **Great Falls College** consortium successfully established formal articulation agreements that allow for credit transfer between member colleges in the welding and machining programs (Feldman et al. 2017). To do so, the consortium recruited an outside contractor to create a crosswalk for the learning outcomes of each college's program.

Some grantees already had articulation agreements in place with four-year universities before the start of the grant period, but many used their grant as an opportunity to establish new agreements. For example:

- The **Macomb College** and **Mesa Community College** consortia expressed that the goal of these agreements was to offer students the opportunity to build upon their associate's degree and to pursue higher education needed for high-wage, higher-skill jobs (Lewis-Charp et al. 2016; Nanda et al. 2017).

The most common type of articulation agreement created by grantees was a "2 + 2" agreement, meaning that once a participant completes an associate's degree at a community college, they could transfer to a four-year university as a junior bachelor's degree student. For example:

- **Iowa Western Community College** and colleges in the **Pellissippi State Community College** consortium were among the grantees that successfully implemented these agreements (de la Mora et al. 2017; Takyi-Laryea et al. 2017).

Box 5.2 offers an example of articulation agreements developed to support distance learners.

BOX 5.2

Articulation Agreements to Serve Distance Learners

At the Community College of Baltimore County, over 60 percent of Cybersecurity Institute students continue on to four-year universities to earn a bachelor's degree. Therefore, the college worked with four-year institutions to create cybersecurity articulation agreements and develop effective means of transferring credit toward an advanced degree. It executed articulation agreements with American Public University, an online four-year institution, among other colleges. As the grant was ending, Community College of Baltimore County was working to develop an agreement with the University of Maryland University College, another online institution.

Source: Bill et al. 2017.

Grantees also noted challenges they faced with securing these agreements. For example:

- Sometimes colleges were unresponsive to potential articulation agreements, as **Missouri State University** and the **Central Maine College** encountered (Horwood et al. 2017; McREL International 2017).
- At the **University of the District of Columbia Community College**, changes in grant leadership prevented the finalization of the articulation agreements that grant staff had been working towards (Takyi-Laryea, Passa, and Gall 2017).

5.3 Sharing Best Practices

Round 3 grantees collaborated with other colleges inside and outside of their consortia to share successes and challenges. Through a range of forums, colleges discussed best practices for program and curriculum design and development, support services, student tracking, implementing new technology, and employer engagement. Nearly all colleges engaged in this type of activity and felt that learning from other colleges greatly bolstered their ability to support student success. This section highlights the implementation findings on how grantees and colleges collaborated to share best practices.

Platforms for sharing best practices varied widely across grantees.

Thirty-one consortium grantees organized regular meetings as a way to facilitate collaboration and communication between member colleges. Commonly, conference calls or in-person meetings were held monthly or quarterly between representatives of each college as a way to keep each other up-to-date on valuable information, to share progress, and to collaborate to tackle challenges. These meetings often led to individual colleges or entire consortia making improvements to their programming and were particularly useful for promoting collaboration between colleges with similar programs of study. For example:

- In the **Cleveland Community College** consortium, project team members met quarterly to review data, share best practices in student support, and plan continuous improvements (NC State Industry Expansion Solutions 2017). Colleges also worked together to implement their telepresence systems to expand student access to simulated learning experiences. Project staff in the consortium reported face-to-face engagement as being the most effective method of communication.
- The consortium led by **Southeast Technical College** also used quarterly meetings to collaborate to solve problems and to share information and strategies about online, hybrid, and competency-based models of instruction (Swanson 2016).
- Meeting regularly generated important benefits for the **Pine Technical Community College** consortium, where weekly web-based meetings between colleges and the consortium director strengthened consensus decisionmaking and facilitated transparency and trust (The Improve Group 2017).

Through conferences, faculty retreats, and other professional development opportunities, colleges shared best practices on a wide range of topics. Often, grantees used these opportunities to share expertise on the implementation of new technology or new learning strategies. For example:

- A consortium member of the **Great Falls College** grant hosted a conference with consortium math faculty to discuss best practices regarding the college's new math lab and emporium program (Feldman et al. 2017).
- **Iowa Western Community College** organized a statewide Entrepreneurism Best Practices Conference, which covered online learning, virtual desktop infrastructure, and entrepreneurial concepts. Faculty retreats were another forum for sharing best practices (de la Mora et al. 2017).
- At **Pine Technical and Community College**, consortium faculty were trained on best practices in course hybridization and online teaching in reaction to some faculty members showing resistance to adopting these new learning strategies (The Improve Group 2017).

Box 5.3 provides an example of a meeting across several TAACCCT grantees to provide best practices.

BOX 5.3

Retreat to Share Best Practices across Multiple TAACCCT Grantees

BridgeValley Community and Technical College in West Virginia organized a retreat for faculty and project staff from consortium colleges and from TAACCCT grantees in five other states - Louisiana, Massachusetts, North Carolina, North Dakota, and Florida. The retreat was designed to share best practices for developing curricula and sustainability strategies in the advanced manufacturing, energy, and information technology sectors. Another goal of the retreat was to establish a network across the colleges for sharing best practices on an ongoing basis.

Source: Thomas P. Miller & Associates and The Policy & Research Group 2017.

Two grantees developed innovative workgroup structures to delegate responsibility for program activities among the consortium colleges as follows:

- The **Macomb College** consortium developed a workgroup made up of key instructors and faculty members for each of the four key industry pathways (Lewis-Charp et al. 2017). The consortium workgroups met regularly, focusing on aligning career pathways to employer needs and industry-recognized credentials, incorporating new technology into courses, and developing online learning strategies. Each college in the consortium (except one) was also responsible for leading one grant activity. Activity Leads were responsible for developing a work plan for the task, establishing a consistent consortium-wide implementation approach, and sharing best practices with other colleges.
- The **Mount Wachusett Community College** consortium developed workgroups to oversee the various components of the grant (Negoita et al. 2015). The consortium has found that convening workgroups regularly is an effective accountability mechanism given the decentralized nature of the consortium.

Both grantees found that workgroups strengthened coordination and collaboration among consortium colleges, created consistency in program development, and promoted the sharing of best practices.

Two grantees used online trainings and repositories to circulate best practices among colleges:

- The **Great Falls College** consortium developed an online training module on best practices for workforce navigators, who provide various student support services (Feldman et al. 2017). This module was intended for use by staff at job service centers, state agencies, and colleges in Montana and nationwide.
- At **Southeast Technical College**, staff used Dropbox and www.SkillsCommons.org as repositories for uploading guidance on best practices for mobile and on-site training labs, mentoring effectiveness, and competency-based education (Swanson 2016; Swanson 2017).

Grantees leveraged their grant resources to share best practices with other grantees and colleges that did not receive grant funding.

To make effective coursework more widely available and avoid duplicating efforts, some Round 3 colleges shared courses and curricula with one another. Two consortium grantees shared curricula across member colleges and colleges across the state who may not have received grant funding:

- At **Great Falls College**, course sharing made online coursework available to students across Montana, allowing students who wanted to take courses at another college to do so without applying for admission (Feldman et al. 2017). These courses could then be covered by financial aid and credits automatically applied to transcripts at their home institutions.
- To increase access and promote widespread sharing of courses, the **Cleveland Community College** consortium converted lecture materials into online components that were used in online and hybrid courses and could be easily updated (NC State Industry Expansion Solutions 2017).

One grantee looked to other TAACCCT grantees and non-TAACCCT colleges to glean lessons learned and strategies for developing their programs:

- The consortium led by **Great Falls College** took a leadership role, initiating and funding the TAACCCT Directors' Forum, an online discussion forum that included 220 staff members at other grant-funded projects in Montana and nationwide (Feldman et al. 2017). Consortium grant staff from Montana's other two TAACCCT grants also communicated with and visited

Colorado's TAACCCT grantees. These partnerships have allowed the consortium to leverage existing work and increase the effectiveness of its programming.

Three grantees also collaborated with other educational institutions beyond the consortia to support the sharing of best practices:

- The **Cleveland Community College** consortium received advice from the University of North Carolina-Charlotte on designing its degree program, which helped to inform the transfer and articulation goals of the program.
- **Colegio Universitario de San Juan** was in a consortium with the Polytechnic University of Puerto Rico, a four-year college, as part of a federal grant separate from the grant (Franco 2017). Polytechnic contributed to project development and implementation through curriculum revision, developing the credit transfer process, and personnel training.
- The **Community College of Baltimore County** included representatives from Baltimore County Public Schools and Johns Hopkins University on its network advisory board (Bill et al. 2017).

5.4 Other Collaborative Efforts

Round 3 grantees collaborated in other ways, namely developing logic models and theories of change to guide grant projects and using and sharing data across colleges. The development of logic models generally occurred at the beginning of the grant and grantees and evaluators used the models to track implementation and assess the grant projects. Consortium member colleges had to share data across colleges as the grantees had to report on the performance metrics as a requirement of the grant. However, some grantees decided to go beyond the grant requirements and use and share data to inform ongoing implementation and support evaluation. This section highlights the findings on how grantees developed logic models and using and sharing data for the grant-funded projects.

Grantees created detailed logic models that enhanced the success of their programs by serving as a tool for guiding program implementation and evaluation or as a strategy for assessing fidelity to program design.

About half of grantees used logic models to guide their grant projects. Logics models are typically more linear representations of an intervention and its expected outcomes. Grantees typically developed logic models during the planning stages of their projects. Logic models provided grantees with a reference point to inform each stage of the project. For example:

- **Northern Wyoming Community College** used the logic model framework as a guide for data collection and analysis, while North Dakota State College of Science used its logic model to assess fidelity to the original project design and changes as implementation progressed (Woodke, Graf, and Driessen 2017; WorkEd Consulting 2017).
- The **Cleveland Community College** consortium made deliberate use of its logic model for program evaluation via a database that linked each logic model activity to the related evaluation activities (NC State Industry Expansion Solutions 2017). Several colleges in the

consortium praised the logic model framework as setting the stage for a strong, goal-based evaluation of their projects.

Three evaluations highlighted the utility of logic models as a tool for internal accountability throughout the grant period. For example:

- **MiraCosta Community College** developed a theory of change, similar to a logic model, that then informed the project's logic model "that served as a roadmap for assessing program implementation" throughout the grant period (Hoffman 2017, p. 5).
- Staff at **Butler County Community College** used its logic model to compare the project's expected and actual outcomes for participants and to monitor whether they were achieving the overall TAACCCT grant program goals and priorities (Kansas State University 2017). Butler County Community College also used its logic model to move toward sustainability.
- Evaluators for the **North Dakota State College of Science** grant used its logic model to define and assess fidelity and document changes to the program that occurred during the project's implementation (WorkEd Consulting 2017).

Grantees used data mainly for program improvement and monitoring student progress and outcomes, but faced perceived challenges in accessing data.

Data use and sharing for decisionmaking (e.g., program improvement and evaluation) by Round 3 grantees largely emerged in two forms: informal data sharing across colleges—typically within consortia—and formal data sharing agreements with state workforce and higher education institutions. While the evaluations highlighted that nearly all grantees appreciated the importance of obtaining and using data to improve and evaluate their grant-funded projects, many struggled to translate intention into action.

Nearly all grantees used some type of data tracking system to document participant progress and outcomes, but only three evaluations highlighted the ways that they put these data to use to engage in continuous cycles of program evaluation and improvement. For example:

- **Northcentral Technical College** also analyzed data and reviewed key indicators annually to drive continuous improvement and shared data on graduates' employment outcomes to its partner colleges (Smith et al. 2016).
- The consortium led by **Cleveland Community College** worked with external partners to drive its continuous improvement process by using Quality Matters, a business which reviews online college courses, provides feedback, and then grants a course certification (NC State Industry Expansion Solutions 2017). A member college of this consortium, Wake Tech Community College, worked with the developers of simulation software to collect data that could be used to increase the benefit that students derive from the software's use.
- **Central Georgia Community College's** institutional effectiveness office and the third-party evaluator worked together to provide timely information to help improve the programs as they were being implemented (Center for Applied Research 2017b).

Grantees used data to track how students fared during and after completing their programs. For example:

- **Saddleback College** used grant funds to develop a student database that allowed faculty to track students along each phase of their academic pathways and to identify and reach out to students who were at risk of dropping out (Pacific Research & Evaluation 2017a).
- The consortium led by **Macomb College** was successful, creating an online longitudinal database for member colleges to track student characteristics and outcomes (Lewis-Charp et al. 2016). It helped colleges make real-time adjustments to program design, identify and rectify issues in data collection and data input, and pinpoint areas for program improvement.

Entering into formal data-sharing agreements with state workforce and higher education agencies was often the only way for grantees to gain access to needed student-level outcomes data that would allow them to examine the impact of their programs on employment and wages. Grantees attempted to secure these agreements, but for reasons detailed below, only five indicated that they were successful:

- **Century College, North Dakota State College of Science, and Missouri State University** touted their agreements as major victories for their grant projects (Good and Yeh-Ho 2017; McREL International 2017; WorkEd Consulting 2017).
- **Bellingham Technical College** entered into several data-sharing agreements with state and local workforce agencies, state higher education research centers, and the National Student Clearinghouse to access student-level outcomes data that was used for program assessment.

While most grantees set up their own participant tracking systems, some experienced challenges with coordinating and reaching consensus across multiple colleges about sharing data, making it difficult to implement consortium-wide data sharing agreements. For example:

- The consortium led by **Great Falls Community College** faced a lack of consensus on the need for and preferred structure of a data-sharing agreement (Feldman et al. 2017).
- Colleges in the consortium led by **Mount Wachusett Community College** ultimately set up their own separate participant tracking systems for the grant because one college had reservations about using a centralized system (Negoita et al. 2015).

Three grantees indicated that they ran into significant bureaucratic and legal barriers in their attempts to secure individual-level outcomes data on participants from state workforce and higher education agencies. They could only able to secure outcomes data at the aggregate level, or were unable to secure outcomes data altogether. For example:

- In North Dakota, state privacy laws that existed at the beginning of the grant prevented institutions of higher education from accessing state Unemployment Insurance wage records (WorkEd Consulting 2017). It was only through coordinated efforts by **North Dakota State College of Science**, Job Service North Dakota, and other institutions of higher education that the grantee was ultimately able to gain access to these data for tracking participant outcomes.
- At the end of the grant, staff at **Butler County Community College** were still trying to access to Kansas' statewide longitudinal data system, with both postsecondary and employment data, but the process had been delayed due to the lengthy process for developing a data sharing agreement (Kansas State University 2017).
- The struggle that the **Macomb College** consortium faced to obtain student-level data led several college presidents to prepare a joint letter to and meet with the director of Michigan's Talent Investment Agency to discuss the importance of data sharing and data access given the

mounting pressure colleges face to document the economic benefits of their programs for graduates (Lewis-Charp et al. 2016).

6. Conclusion

The Round 3 third-party implementation findings provide insight on how the grantees changed their systems to build capacity to provide education and training to adult learners. The capacity-building activities highlighted in this report are developing career pathways, supporting adult learner success, engaging employers, and collaborating across colleges. This chapter first summarizes how grantees changed their systems to better serve adult learners. It then presents implications for future community college and workforce initiatives.

6.1 How Did Grantees Change Systems to Better Serve Adult Learners

Important elements of systems change for workforce development include collaboration, improvement of access to and quality of training, employer engagement, data-driven decisionmaking, and sustainability (Bernstein and Martin-Caughey 2017). The Round 3 grantees built in these elements to their grant projects in many ways across all the capacity-building activities identified in this report to support systems change and innovation. This section summarizes the how grantees supported systems change in and across community colleges based on the Round 3 third-party implementation evaluation findings.

Collaboration

Collaboration was common activity across the Round 3 grantees to build capacity to serve adult learners. Collaboration manifested itself in multiple ways for the grant projects. First, grantees collaborated within their institutions—across departments and offices—to develop career pathways, ensure access to support services, and create and enhance policies to serve adult learners. Second, grantees collaborated with employers and organizations in the community such as the public workforce system to meet the needs of employers and adult learners. Finally, grantees collaborated with other community colleges through their consortia, with four-year institutions, and with TAACCCT grantees from other rounds and states.

The degree to which grantees collaborated with others is not surprising. The grant announcement required collaboration through one of its core elements, strategic alignment. DOL strongly encouraged partnerships with the public workforce system, employers and industry, and other organizations in the community to ensure that the projects aligned with industry needs, did not duplicate other programs in the community, and reached and served adult learners.

Using the career pathways model to create a shared vision for education and training across institutions and organizations brought together many stakeholders. Collaborating with employers and industry as strategic partners to create stacked and latticed credentials, including industry certifications, and design courses was a key feature of the grants. (The chapter discusses employer engagement as an element of systems change below.) Grantees also had to work closely with other institutions of higher education (e.g., other community colleges, four-year colleges) to create transfer and articulation agreements.

The consortium model for the TAACCCT grants also supported active collaboration across colleges. Colleges worked together to build career pathways, prior learning assessment policies and processes, transfer and articulation agreements, and student advising models. Consortia also shared best practices to support consistent and strong implementation of capacity-building activities. A few consortia also worked with their state systems offices and community colleges across the state to implement activities like core curriculum and prior learning assessment policies.

While some Round 3 colleges may not have collaborated as intensively as others, most seemed to embrace the need to work with multiple stakeholders. Nearly all grantees articulated that collaboration across colleges had been enhanced as a result of the grant, and pointed to collaboration as critical to the success of their projects. In particular, the evaluations highlighted that project staff felt that the consortium structure motivated colleges to work together by providing a forum for program designers and faculty to come together. The benefits from increased college collaboration most commonly cited by grantees fell into the broad categories of working together in pursuit of common goals and moving grant projects closer to sustainability. Insofar as they delayed grant implementation, hiring difficulties, faculty and staff turnover, and cumbersome curriculum approval processes could inhibit collaboration across colleges.

Throughout the grant period (2013-2017), collaboration increased colleges' capacity to serve adult learners. Grantees found that the collective influence of many colleges was an effective way to push state-level prior learning assessment policies, curricula, and data-sharing agreements. Grantees also engaged in the sharing of resources and courses, increasing efficiency in both time and money spent. Most notably, however, the exchange of ideas and best practices between colleges through formal and informal settings created valuable opportunities for program improvement. As a result, grantees

SYSTEMS CHANGE ELEMENT #1

Collaboration

Organizations have a shared vision or coordinated approach to serving workers and employers and effectively work together to solve problems and share best practices.

implemented new approaches to career pathways, better serve adult learners, and create internal and external partnerships that enabled them to achieve their goals.

Access to and Quality of Training

The Round 3 grantees sought to improve access to and quality of training in two ways: supporting adult learner success and developing career pathways. Colleges sought to increase access to education and training for adult learners through targeted recruitment strategies, technology to support accelerated learning and persistence, and student supports including enhanced advising, technology tools, and access to wraparound support services. Grantees improved the quality of training by using the career pathways to design programs of study that help adult learners to begin and advance in an industry.

Many Round 3 grantees aligned their recruitment and engagement approaches to target adult learners, including veterans, TAA-eligible and dislocated workers, and unemployed and underemployed individuals. Recruiting veterans on-campus involved dedicated grant staffing, internal coordination, and increasing knowledge and skills of staff and faculty to sensitize them to veteran concerns and opportunities. Outreach and recruitment efforts by project staff involved relationship-building and coordination with veteran-serving organizations and the public workforce system. Reaching other adult learners often involved dedicated recruitment specialists and coordinating strategies across partners. The grantees often leveraged connections with the public workforce system to reach TAA-eligible or dislocated workers and unemployed or underemployed individuals. Some grantees also conducted special outreach initiatives to recruit women, minorities, rural residents, and individuals with low basic skills.

To improve the quality of training programs, Round 3 grantees used technology to engage students to support accelerated learning, persistence and completion, and connections to employment. Grantees purchased specialized educational software and developed online resources to enhance remediation and basic skills training, academic planning, and tutoring for students. Evaluation findings attributed the dedicated contact with academic advisors to higher levels of student persistence. To quicken the pace of learning, grantees used technology in innovative ways to support learning. Accelerated learning strategies also allowed grantees to reach more participants and scale up programs.

Grantees implemented a range of strategies to increase access to services to support persistence to completion and connections to employment opportunities. Arrayed along a continuum from modest to robust, grant-funded efforts provided students with an array of academic, personal, and job readiness supports. Some grantees developed student centers to ensure access to a wide range of supports. For many grantees, having dedicated staff, working one-on-one with students or in pairs, ensured

SYSTEMS CHANGE ELEMENT #2

Access to and Quality of Training

Services are visible and accessible to and meet the needs of those who need them, especially people with challenges or barriers to employment.

participants had access to comprehensive, individualized supports and could support program persistence and completion. Use of more intensive case management and wraparound services provided participants with individualized supports to meet academic and non-academic needs. Through more intensive approaches, some grantees developed an integrated or “bundled” approach that supported students at each step, from enrollment into the workforce.

The use of career pathways could also improve the quality of training for adult learners. About half of Round 3 grantees planned and implemented comprehensive approaches to career pathways. For these grantees, career pathways was an overarching feature of the grant projects and programs of study, including credential development and instructional design, transfer and articulation agreements, support services, and partnerships. A common element across the evaluations of grantees that implemented comprehensive approaches to career pathways was use the word “transform” to describe the systems change the grantees were trying to accomplish within their institutions to build capacity for serving adult learners. Many grantees redesigned existing programs of study to implement career pathways, including implementing policies and practices that would allow students to access the courses they needed to advance along those pathways.

Nearly all of the evaluations identified stacked and latticed credentials as a strategy implemented by grantees, with some degree of success. Grantees engaged employers and industry to develop credentials, especially industry certifications, as a part of career pathways. Some evaluations attributed the availability of stacked and latticed credentials to improved educational outcomes for participants such as participants being more likely to complete more credentials than those in similar programs of study. Similar to stacked and latticed credentials, a few evaluations indicated that transfer and articulation efforts were successful in supporting participants’ educational advancement via a transfer to a four-year institution.

Grantees also focused on redesigning instruction for the courses offered as a part of career pathways to improve the quality of training for adult learners. They used a range of accelerated learning strategies to inform their instructional design to better serve the needs of participants and ensure programs led to employment. These strategies included the creation of core curricula, the development or use of instructional software, adaptation of course content into smaller, digestible portions or “modules,” and competency-based education approaches aligned to specific skills. Use of new, technology-enabled learning tools, especially building online learning components was a popular strategy for redesigning instruction to accelerate learning, mainly allowing adults, who often work and have families, to enroll and persist in their programs of study. Online learning was also important for rural participants, who may not have easy access to a community college campus. Other instructional design efforts, such as modularized courses and competency-based education, also took advantage of technology to deliver instruction for courses using these strategies.

Overall, the implementation findings showed that the use of career pathways and support strategies to serve adult learners helped to improve access to and quality of training at the Round 3 grantees. Evidence from the impact analyses from the third-party evaluations also suggest that improvements to the quality of the training through career pathways and capacity-building activities

increased credential attainment and program completion for Round 3 participants (Kuehn and Eyster 2020). The evidence is more mixed on the degree to which the grants supported better employment outcomes for participants but there often was not a sufficient follow-up period to capture the longer-term effects of the training received.

Employer Engagement

As discussed in chapter 4, employer engagement was an important element of the grants that helped increase the capacity of community colleges to serve adult learners and meet employer demand for skilled workers. DOL required that grantees partner with employers and industry but how they engaged employers varied. Employers could serve an advisory, hands-on, and/or strategic role, all of which were critical for implementing and sustaining systems change at community colleges. Employer engagement was also a common theme across capacity-building activities, especially in the development of career pathways. Overall, a major success of the Round 3 grants was the high levels of employer engagement as originally intended.

As highlighted in the evaluations, the most prevalent strategy for engaging employers was to bring them on as advisors in the planning stages and for ongoing grant activities. This was a less intensive type of engagement than being a hands-on or strategic partner. However, grantees did engage employers in more intensive ways with some frequency. The evaluations indicated that about two-thirds of grantees had employers as a hands-on partner and about one-third had employers as strategic partners.

Strategic partnerships with employers as part of the grant activities were likely to resemble formal sector or industry partnerships, where colleges, employers, the public workforce system, and other organizations worked together coordinate training strategies across a community. Making financial commitments was one way that employers demonstrated their willingness to participate as strategic partners, institutionalizing their investment in the grant-funded program likely to last beyond the end of the grant period. Grantees also received commitments to interview or hire students for internships, apprenticeships, or full-time positions. Intermediary organizations often served as the coordinator rather than the community college. Having an intermediary that could dedicate time and resources to maintaining employer relationships as a part of a sector or industry partnership helped ensure the sustainability of the relationship between employers and colleges.

A common theme across the evaluations was that having a dedicated staff person to focus on employer engagement allowed for a more coordinated effort to develop and maintain relationships with employers. This staff person could conduct the initial outreach, bring employers in as advisors on curriculum and equipment purchases, develop work-based learning opportunities, and support or engage in sector partnerships. Similar to other grant-funded positions such as career navigators,

SYSTEMS CHANGE ELEMENT #3

Employer Engagement

Organizations in the system are informed by business needs, and employers are invested partners in workforce efforts.

continuing this position after the grant ended was a challenge that grantees had to address to ensure the sustainability of the employer relationships.

Data-Driven Decisionmaking

As discussed in chapter 5, data use and sharing for decisionmaking (e.g., program improvement and evaluation) by Round 3 grantees largely emerged in two forms: development of data systems within and across colleges—typically within consortia—and data sharing agreements with state workforce and higher education agencies. While the evaluations highlighted that nearly all grantees appreciated the importance of obtaining and using data to improve and evaluate their grant-funded projects, many struggled to translate intention into action.

Nearly all grantees used some type of data tracking system to document participant progress and outcomes, but only a handful of evaluations highlighted the ways that they put these data to use to engage in continuous cycles of program evaluation and improvement. Some grantees gave faculty access to participant tracking systems so they could ensure participants stayed on track. Use of these systems also helped colleges make real-time adjustments to program design, identify and rectify issues in data collection and data input, and pinpoint areas for program improvement. For consortia, it could be difficult to reach consensus across multiple colleges about sharing data for this purpose.

Entering into data-sharing agreements with state workforce and higher education agencies was often the only way for grantees to gain access to student-level outcomes data that would allow them to better assess the impact of their programs on employment and wages. Many grantees attempted to secure these agreements only a handful were successful due to bureaucratic and legal barriers. Those who did touted their agreements as major successes for their projects.

Some grantees also used their logic models to monitor implementation of their grant-funded projects. Several evaluations highlighted the utility of logic models as a tool for internal accountability throughout the grant period. Staff, often with the support of the third-party evaluators, could use the project's logic model to compare the project's expected and actual outcomes for participants and to monitor whether they were achieving their goals for the grant.

Building in data-driven decisionmaking to the grant activities was a more challenging for Round 3 grantees to do to improve their systems than other elements. Many grantees wanted to build stronger data sharing processes and more actively monitor participants and project implementation but found many roadblocks along the way. A lack of access to needed data, especially from state agencies, was a common issue for grantees across the rounds (Eyster 2019; Kuehn and Eyster 2020).

SYSTEMS CHANGE ELEMENT #4

Data-Driven Decisionmaking

Organizations collect and use quality data to design and continuously improve programs and services.

Sustainability

Many of the Round 3 evaluations indicated that grantees had plans to sustain their grant projects. However, because the evaluations only cover to the end of the grant, they cannot say whether any of the activities were sustained after the end of the grants. Similar to data-driven decisionmaking, sustainability was a weaker aspect of systems change as a part of the Round 3 grants, mainly due to a lack of information about post-grant activities.

However, there are some educated guesses about what aspects of the grant projects are sustainable, especially based on the capacity-building activities. Some of the most likely aspects of the grant projects to be sustained were the career pathways that became institutionalized through curriculum approvals, regular course offerings, and transfer and articulation agreements. Other policies, such as prior learning assessment, were also likely to be sustained beyond the grant. Capacity-building activities that were supported through collaboration across colleges, especially when state systems offices were involved, also held promise for being sustained as curriculum, policy, and other processes were implemented with state support.

The evaluations also highlighted the intentions of grantees to sustain the partnerships beyond the end of the grant. Many grantees saw that they could sustain the relationships they had built with employers and industry as the grants had helped them build a strong foundation for these partnerships and built good will with employers. Sector partnerships, where employers within an industry played more strategic roles as a group, also lent themselves to being sustained as an infrastructure for the partnership had been created. However, whether employers served as a strategic, hands-on, or advisor partner, having dedicated staff to maintaining the partnerships may be needed to ensure the sustainability of employer partnerships.

There are two aspects of the grant projects that may be more difficult to sustain: use of technology and enhanced supports for participants. Many Round 3 grantees used technology to support learning and persistence and completion and the evaluations highlighted that the technology would be used beyond the end of the grant. However, little was mentioned about how grantees planned to maintain and update the technology. The enhanced supports for participants, especially as provided by dedicated project staff, could also be difficult to sustain once the grant funding, that supported these staff, ended. Some grantees planned to sustain these positions after the end of the grant and institutionalize their roles but many others did not have these plans in place and the sustainability of these positions was unclear.

Overall, sustainability remains a question for the Round 3 grants' ability to change their systems to serve adult learners in the long run. While the future holds promise for the sustainability for many

SYSTEMS CHANGE ELEMENT #5

Sustainability

The system has adequate programs, funding, and policies to reliably meet the needs of individuals and employers over time.

aspects of the grants, the activities that did not become institutionalized, such as dedicated staff for partnerships and student advising, may have ceased at the end of the grant.

6.2 Implications for Future Community College and Workforce Initiatives

The Round 3 TAACCCT grantees successfully supported system innovations in community colleges in many ways but challenges to implementing capacity-building activities occurred. What do the insights from the synthesis of evaluation findings mean for grantees of future community college and workforce initiatives and policymakers seeking to improve how community colleges serve adult learners? While the synthesis cannot provide causal evidence of capacity-building activities improving systems, this section uses evidence from the synthesis of implementation findings to present implications that are relevant for both future grantees and policymakers. The synthesis suggests the following:

- ***Embedding collaboration as a core element of an initiative appears to help community colleges' implement their capacity-building efforts.*** There are four broad groups of stakeholders the grantees engaged—departments and offices internal to the college, organizations external to the college (e.g., public workforce system and community organizations), employers and industry, and other institutions of higher education. For internal partnerships, grantees worked with other college departments and offices such as financial aid, academic support, and career services to provide support to adult learners. For some grantees, this included working with on-campus veterans services to recruit and support veterans in grant-funded programs. For external partnerships, grantees engaged the public workforce system and other community partners to recruit participants such as veterans, TAA-eligible and dislocated workers, and other adult learners and support student success through financial, personal, and career services. Employers played a crucial role in ensuring grant-funded programs were aligned with industry needs, providing resources for programs such as work-based learning opportunities and donations of training equipment, and providing strategic direction on program design and sector strategies. And, partnerships with other colleges happened in several ways – within a grant-funded consortium, with other community colleges across the state, and with four-year institutions. In particular, the consortium model promoted collaboration across colleges to develop career pathways, core curriculum, and policies and processes to support enrollment, persistence, and completion by adult learners.
- ***Creating a continuum of support for adult learners, from enrollment to the workforce, can strengthen colleges' capacity to ensure educational and workforce success.*** A few grantees created centers or support teams to help adult learners access a range of services to support persistence and completion and connections to employment from enrollment into the workforce. These efforts typically included a counselor/advisor/case manager to work directly with participants, assess their needs, and coordinate services. Having dedicated staff (career navigators, success coaches, student services specialists, completion or success coaches, advisors) for working with students seemed to be an important component to guiding participants throughout the program and helping them access supports on campus and in the community. Common supports provided by these staff were educational planning and advising, referrals to services (for tutoring, testing, career services, counseling, and financial aid), assistance connecting to work-based learning or internship opportunities, career advising, ensuring job readiness, and assistance with job searches and placement. Grantees also

incorporated online tools and technology to help participants accelerate learning and complete their programs, including remediation and online instruction such as modularized courses and competency-based education.

- ***Using comprehensive approaches to career pathways—including stacked and latticed credentials, transfer and articulation agreements, instruction redesign, supports for participants, and partnerships—appears to support improved educational outcomes for participants.*** About half of the grantees developed career pathways that included multiple elements such as stacked and latticed credentials, transfer and articulation agreements and policies, and instructional design elements that support accelerated learning and persistence and completion. They also often included elements that support participants in career pathways and engage key partners like employers to ensure participants are prepared for in-demand jobs. Evaluations showed that certain components of career pathways like stacked and latticed credentials, transfer and articulation agreements, and supports using technology and dedicated staff contributed to participant success. These findings were confirmed in the synthesis of the Round 3 third-party impact evaluation findings, where there were consistently positive impacts of TAACCCT on participants' educational outcomes from quasi-experimental analyses (Kuehn and Eyster 2020)
- ***Providing more guidance and assistance can help grantees use various tools to assess their project's implementation and improve their project throughout the grant period.*** Grantees that developed logic models found them helpful for assessing implementation and ensuring the grant project stayed on track. In addition, grantees that used data to monitor participant success and adjust their programs and services to help those who may be struggling found this to be useful. However, not all grantees took these steps to monitor their projects or work with their evaluators to do so.
- ***Embedding a formal role for the state education and workforce agencies in the grant project can help colleges develop data sharing agreements and create statewide policies and practices to support adult learners.*** The involvement of state agencies in community college initiatives can be invaluable to supporting systems change. They can help develop policies (e.g., enrollment, financial aid, prior learning assessment) and support professional development and best practices across the state rather than change occurring in a more piecemeal fashion. But state agencies were not always involved in the grant projects and grantees especially struggled to connect with state agencies to access administrative records for students, especially wage records.

Replicating and improving on the strategies and experiences of the TAACCCT grantees across all rounds can inform future grant initiatives to build the capacity of community colleges to serve adult learners. A separate report synthesizing the Round 3 third-party evaluation impact findings focuses on participants' educational and employment outcomes.⁴² A report synthesizing the Round 4 third-party evaluation findings will also examine systems change efforts by grantees, building on the findings from this report. Other publications from the national evaluation—a series of briefs providing an overview of the grant program, a synthesis of the Rounds 1 and 2 third-party evaluation findings, and reports examining the implementation of the Rounds 1 and 2 grants and the Round 3 grants—are also available. These reports are designed to support learning across the grant program to draw lessons and

⁴² All publications from the TAACCCT national evaluation are available on DOL's Chief Evaluation Office website, found at <https://www.dol.gov/agencies/oasp/evaluation/completedstudies>.

implications for future community college and workforce initiatives that support career pathways and capacity-building efforts at community colleges.

Appendix A. Workforce Innovation and Opportunity Act of 2014 (WIOA) Definition of Career Pathways

The full WIOA definition of *career pathways* is “a combination of rigorous and high-quality education, training, and other services that—

- (A) aligns with the skill needs of industries in the economy of the State or regional economy involved;
- (B) prepares an individual to be successful in any of a full range of secondary or postsecondary education options;
- (C) includes counseling to support an individual in achieving the individual’s education and career goals;
- (D) includes, as appropriate, education offered concurrently with and in the same context as workforce preparation activities and training for a specific occupation or occupational cluster;
- (E) organizes education, training, and other services to meet the particular needs of an individual in a manner that accelerates the educational and career advancement of the individual to the extent practicable;
- (F) enables an individual to attain a secondary school diploma or its recognized equivalent, and at least 1 recognized postsecondary credential; and (G) helps an individual enter or advance within a specific occupation or occupational cluster” (29 U.S. Code § 3102 Definitions).

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Note: The TAACCCT third-party evaluation reports can be found at www.SkillsCommons.org, a DOL-sponsored online repository of job-driven workforce development materials where grantees posted these reports and other grant products.

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