

Building Career Pathways Programs & Systems: Insights from TAACCCT

Over four rounds of **Trade Adjustment Assistance Community College and Career Training** program (TAACCCT) grants, DOL increasingly focused funding on strengthening the ability of colleges and their state and local partners to develop career pathways programs and systems as a way to improve training and related services.

This brief describes evidence-to-date on career pathways generally, DOL's grant-making approach, and the extent to which grant-funded colleges implemented key elements of career pathways (defined for purposes of this brief as those in the Workforce Innovation and Opportunity Act, WIOA).¹ It also examines additional ways colleges used the grants to build career pathways systems. Data for the brief comes chiefly from four surveys of TAACCCT colleges, one conducted for each round of grants, and from third-party evaluations of grantee programs. The brief assesses implementation of grant-funded career pathways strategies through indices based on the elements of WIOA's career pathways definition.

For this brief and other TAACCCT Round 4 Evaluation findings visit:

 www.dol.gov/agencies/oasp/evaluation/completedstudies

TAACCCT Round 4 National Evaluation

The U.S. Department of Labor (DOL)'s *Trade Adjustment Assistance Community College and Career Training* (TAACCCT) grants program aimed to help community colleges across the nation increase their capacity to provide education and training for unemployed workers and other adult learners to prepare them for in-demand jobs. DOL provided four rounds of grants, which operated between 2011 and 2018. In order to build evidence on its grant-funded programs and strategies, DOL funded a national evaluation of each round of grants to collect and assess data across all participating colleges. The Evaluation of Round 4 included the following components:

- An *implementation analysis* of the service delivery approaches developed and the systems changed through the grants.
- An *outcomes study* of nine Round 4 grantees and 34 programs using survey data and administrative records to better understand the characteristics of participants, their service receipt, and their training and employment outcomes.
- *Syntheses of third-party evaluation findings* to develop a national picture of the implementation of the capacity-building strategies and build evidence of the effectiveness of the strategies on participants' training and employment outcomes.
- A *study of employer perspectives on strong community college relationships* with selected Round 4 employer-partners, to better understand employers' perspectives on how to develop and maintain strong relationships with colleges.

This brief adds to the findings from the implementation analyses by describing the extent to which grant-funded colleges implemented key elements of career pathways, a core component of the TAACCCT Round 4 solicitation for grant applications.

¹ It should be noted that while grantee implementation of career pathways elements occurred in the context of WIOA, the TAACCCT Round 4 solicitation for grant applications came out shortly before final passage of WIOA. DOL did closely align, however, the TAACCCT and WIOA career pathways elements in the solicitation.

Highlights

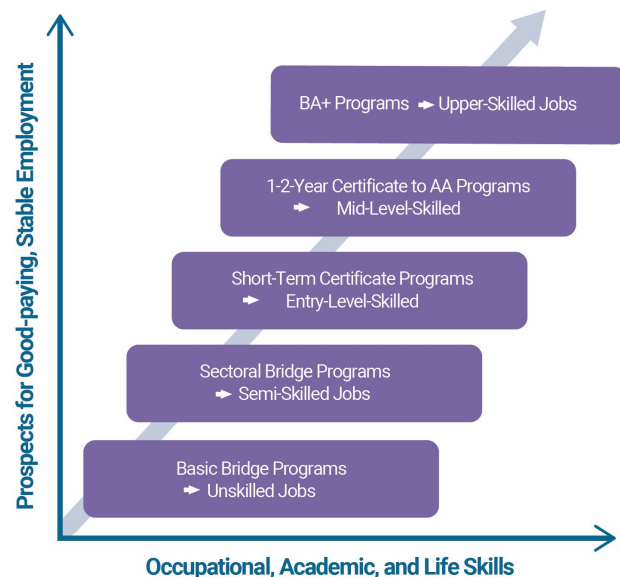
- Round 4 of TAACCCT required colleges to implement *career pathways strategies*, though previous rounds had encouraged it. DOL also emphasized *engaging employers/industry, changing systems* and *sustaining innovations*.
- Most colleges across all grant rounds implemented career pathways broadly; Round 4 colleges carried out more *strategies to align services with industry skill needs* than did colleges in earlier rounds.
- Round 4 colleges *developed or expanded more internal and external pathways* partnerships than colleges in earlier rounds; they especially obtained more *employer/industry support and community support* for career pathways.
- A substantially higher share of Round 4 colleges adopted *multiple non-TAACCT funding strategies* for career pathways than did colleges in earlier rounds.
- Round 4 colleges also secured more *comprehensive partner support and funding* for career pathways systems.
- Colleges in states with past career pathways or sector partnership experience may have found it easier to expand career pathways systems. This suggests *sustained investment, as well as ongoing college and industry leadership*, may be critical for institutionalizing a state career pathways system over time.

WHAT ARE CAREER PATHWAYS?

Career pathways approaches to workforce development offer articulated education and training steps between occupations in an industry sector, combined with support services. A career pathway enables an individual to enter and exit training at various levels. Each step on a pathway prepares the individual to progress to the next level of employment and/or education, enabling him or her to advance over time to higher skills, recognized credentials, and better jobs with higher pay (**Exhibit 1**). Career pathways approaches target jobs important to local industries and aims to develop strong relationships with employers.

The career pathways model evolved over the last decade as a response to emerging evidence on labor market changes and on the limits of previous employment and training strategies. In the labor market, workers with a high school education or less have experienced stagnating wages and relatively high unemployment over the last 30 years, in contrast to workers with postsecondary credentials who experienced economic gains (Autor, 2015; Carnevale, Jayasundera, & Gulish, 2016). In the workforce development field, researchers studying long-term economic outcomes found that the two most common

Exhibit 1. Career Pathways Model



employment and training strategies for low-income adults—quick job placement and stand-alone basic skills instruction—neither increased employment and earnings over the long run nor helped participants escape poverty (Hendra & Hamilton, 2015), despite often producing short-term positive impacts. By emphasizing in-demand postsecondary credentials, the career pathways model responds to these labor market changes and aims to deliver larger and longer-lasting impacts than previous employment and training strategies.

Career pathways approaches also incorporate promising features of recent workforce development innovations, such as targeting industry sectors and integrating basic education with job training (Werner et al., 2013). In addition, they provide a range of supports to students including career navigation, financial assistance, and connections to employers and jobs.

WHAT DOES THE RESEARCH TELL US ABOUT CAREER PATHWAYS?

Career pathways approaches for adults are fairly new and still evolving. Initially piloted in the late 2000's, the workforce development field adopted career pathways approaches more widely as DOL and other federal agencies supported their growth through technical assistance and grants,² and as the model became embedded in federal education and training policy, such as WIOA and the Carl D. Perkins Career and Technical Education Act.

A 2017 high-level scan for DOL (Sarna and Strawn 2018) of literature and websites on career pathways programs nationally indicated a fair amount of consensus about what the career pathways approach entails, with programs generally incorporating most parts of the WIOA definition (**Box 1**) in their program descriptions. Career pathways systems change initiatives most commonly emphasized building cross-agency partnerships in their descriptions. How states

Box 1. WIOA's Definition of Career Pathways

WIOA defines career pathways as a combination of *rigorous and high-quality education, training, and other services* that—

- aligns with skill needs of industries in state and regional economies (Element 1);
- prepares individuals to be successful in a full range of secondary and postsecondary education options (Element 2);
- includes academic and career counseling, as well as non-academic supports (Element 3);
- includes, as appropriate, education offered concurrently with and in the same context as occupational training (Element 4);
- organizes education, training, and other services to meet individual needs in a way that accelerates educational and career advancement (Element 5);
- enables individuals to attain a secondary school diploma or its recognized equivalent, and at least one recognized postsecondary credential (Element 6); and
- helps individuals to enter or advance within a specific occupation or occupational cluster (Element 7).

Source: Workforce Innovation and Opportunity Act, Pub. L. 113–128, July 22, 2014, 128 Stat. 1425, Sec. 3(7). Element numbers added by authors.

² For a comprehensive list of federal actions that supported career pathways development, see <https://careerpathways.workforceqps.org/-/media/Communities/careerpathways/Files/U,-d,-S,-d,-Federal-Agency-Career-Pathways-Resources-Tools.ashx>. For resources to help states and localities implement career pathways, see *DOL's Career Pathways Toolkit: An Enhanced Guide and Workbook for System Development*, which also includes a detailed list of other career pathways resources https://careerpathways.workforceqps.org/resources/2016/10/20/10/11/Enhanced_Career_Pathways_Toolkit.

and local organizations actually implement career pathways programs and systems, however, varies widely (Sarna & Strawn, 2018).

For DOL's Descriptive & Analytical Career Pathways Study, Abt Associates scanned research on career pathways programs and systems-change initiatives as of February 2019, reviewing 81 research projects that included 123 separate evaluations.³ Researchers most commonly studied programs in the healthcare and manufacturing sectors, with information technology, business, and construction also common. Participants tended to be high school graduates and equally split between men and women, though not usually in the same program; for example, manufacturing programs tended to mostly serve men and healthcare programs, women. Research projects varied in the extent to which they included programs that focused on career advancement, defined in the scan as offering more than one step of training. Though it was common for at least one program in a project to focus on career advancement (56 percent), in only about a fourth of projects (27 percent) did every program in the project have that focus.

Abt also looked specifically at the results of 96 impact studies from among those 123 evaluations. The majority of the evaluations examined the impact of career pathways programs in the short- to medium-term (one to four years) on education, employment and earnings outcomes. Most found positive effects on education outcomes (83 percent of evaluations) and the majority found positive effects on employment and earnings (62 percent and 63 percent respectively), among the studies that reported on those particular outcomes. A number of ongoing evaluations will report long-term impacts (five or more years of follow-up) in the next few years. These long-term impacts will be important for understanding the full labor market effects of career pathways programs, as early on many participants remain in (or have only recently completed) training. Long-term findings will also shed light on the extent to which participants move up to higher levels of education and jobs over time. (Sarna & Adam, 2020)

WHAT IS TAACCCT AND HOW DID IT BUILD CAPACITY TO IMPLEMENT CAREER PATHWAYS?

This section describes how grantees implemented statewide systems change as part of their grant-funded activities, the perceived challenges they encountered in doing so, and the perceived factors that facilitated execution of systems change. The examples detailed below both illustrate what statewide systems change is possible to implement with funding such as TAACCCT grants and offer a roadmap to policymakers and practitioners to what can enable (and inhibit) implementation of such change.

The TAACCCT grants provided funding to community colleges and other postsecondary institutions across the nation to increase their capacity to deliver education and training programs for unemployed workers and other adults to prepare for in-demand jobs.⁴ Administered by DOL, in partnership with the

³ For the scan, a *research project* has a single research team and set of research questions, a common funder(s), and overall a common approach to examining outcomes or impacts. Sometimes a large research project is structured to examine outcomes or impacts separately by grantee, site, or training program. The scan considered those separate research units as *evaluations*. For example, the Pathways for Advancing Careers and Education (PACE) study was a single research project that included evaluations of nine programs.

⁴ The grant announcement required applicants to provide data and analysis on both current and projected employment opportunities for each targeted industry and specific occupation. This had to include data on current and expected job openings with at least two employers in the community in each targeted industry, and may have also included commitments from employers who expect to hire program participants. See the Round 4 grant announcement for more information at <https://www.dol.gov/sites/dolgov/files/ETA/grants/pdfs/SGA-DFA-PY-13-10.pdf>.

U.S. Department of Education, TAACCCT provided \$1.9 billion in funding from 2011 to 2018 through 256 four-year grants. Both single institutions and lead institutions of college consortia were eligible for grants. TAACCCT funding focused on strategies to accelerate and enhance learning, increase credential completion, and connect students to employers and jobs.⁵

Starting with the first round of grants, TAACCCT emphasized career pathways as one way for colleges to be more responsive to the needs of adults seeking to advance in the labor market. The fourth round strengthened that focus in the context of engaging employers and industry, changing systems, and sustaining innovations past the end of the grant period. In that round, DOL also required that applicants include career pathways as one of six core components of their proposed activities (**Box 2**).⁶ Beyond the grant announcement's explicit references to career pathways, the high-level goals and mandatory core components it articulated, in general, align closely with the seven elements of the WIOA definition of career pathways.

Box 2. Consortia Role in Systems Change in TAACCCT Round 4

In Round 4, DOL required applicants to include career pathways as a core component. The grant announcement stated that by fully engaging employers and industry organizations in developing curricula, competencies, and credentials, and by offering work-based training, colleges could build *responsive and effective career pathways aligned with industry needs*.

Consortia applicants in particular were expected to pursue *policy alignment to bring changes to scale* across member institutions. DOL encouraged consortia to:

- develop statewide systems of sector-focused career pathways;
- contextualize and accelerate remedial education;
- accelerate attainment of credits and credentials; and
- improve data collection, integration and use across state community college systems.

To support this *systems change focus*, DOL accepted applications for funding in excess of the usual grant cap if the proposed project addressed certain regional capacity-building goals, including advancing state career pathways systems. Under this option, Chippewa Valley Technical College in **Wisconsin** received \$15 million on behalf of a consortium to expand *healthcare pathways* within the state's technical colleges. The Wisconsin Technical College System received an additional \$4.9 million TAACCCT grant to scale its career pathways system and to better align career pathways policies among state and local systems. Wisconsin was the only state to receive a special, larger grant for the purpose of advancing a *statewide career pathways system* (Price et al., 2018).

Given this career pathways emphasis, to what extent did Round 4 colleges ultimately develop or enhance their grant-funded strategies and partnerships to support career pathways programs and systems? And how did their actions compare to those of colleges in the earlier rounds? To answer those questions this

⁵ More information on TAACCCT capacity-building strategies and participants' outcomes can be found in the *Trade Adjustment Assistance Community College and Career Training: Round 4 Outcomes Study Final Report* (Judkins et al. 2020) and *Impact and Implementation Synthesis Report: Round 4 TAACCCT Third-Party Evaluation* (Scott et al. 2020).

⁶ For details, see the grant announcement *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/SGA-DFA-PY-13-10.pdf>

brief analyzes grant-funded colleges' survey responses to assess the extent to which colleges in all rounds implemented WIOA career pathways elements individually and comprehensively, using indices that map grant strategies against the seven elements of the WIOA career pathways definition (**Box 3**).⁷

Box 3. Aligning WIOA Career Pathways Elements with TAACCCT Strategies

This brief uses “WIOA elements” to refer to the seven parts of the career pathways definition in the law (**Box 1**). These parts describe the end goals and functional features of career pathways programs and systems.

In contrast, TAACCCT grant-funded strategies are more granular and can be thought of as ways to operationalize the WIOA elements. Examples of how this brief aligns WIOA elements with TAACCCT strategies included in the college surveys for the analyses are below. See **Appendix Exhibit A-1** for details of which TAACCCT strategies are included for each WIOA element index.

WIOA Career Pathways Element	Examples of TAACCCT Strategies that Operationalize the Element
Element 1: Aligns education and training services with industry skill needs	<ul style="list-style-type: none"> • purchased/upgraded equipment • developed industry recognized credentials • employers helped with curriculum development
Element 2: Prepares individuals to be successful in a full range of secondary and postsecondary education options	<ul style="list-style-type: none"> • developed stackable/latticed credentials • created/enhanced for-credit programs of study • established articulation and transfer agreements
Element 3: Includes academic and career counseling and non-academic supports	<ul style="list-style-type: none"> • career coaching/counseling • student remediation/enhanced academic supports • improved financial aid processes
Element 4: Includes, as appropriate, contextualized, concurrent education	<ul style="list-style-type: none"> • contextualized learning • improved basic skills/Adult Basic Education • team teaching
Element 5: Organizes education, training, and other services to accelerate educational and career advancement	<ul style="list-style-type: none"> • hybrid/online learning teaching and learning • credits for prior learning or work experience • modular or chunked courses
Element 6: Enables individuals to attain a secondary school diploma and at least 1 recognized postsecondary credential	<ul style="list-style-type: none"> • created new certificates of completion for training programs • developed new professional and industry certifications, and academic degrees
Element 7: Helps individuals to enter or advance within a specific occupation or occupational cluster	<ul style="list-style-type: none"> • internships or clinical placements • Registered Apprenticeship • workforce system provided job placement services

To address the question of whether Round 4 appeared to increase college efforts to build career pathways systems, the next sections analyze college survey responses pertaining to several aspects of system-building: developing partnerships, gaining support from different partners for specific grant

⁷ The brief maps TAACCCT career pathways implementation against the WIOA elements because the WIOA definition is widely known in the workforce development field and so provides a useful frame of reference for readers. It also aligns closely with the high-level goals and mandatory components in the TAACCCT Round 4 SGA. As noted earlier, however, publication of the SGA did predate passage of WIOA, though grantee implementation occurred in the context of WIOA.

strategies, and adopting non-TAACCT funding strategies for career pathways programs and systems. As with the analysis of WIOA elements, the brief examines both the breadth and depth of college implementation of TAACCT strategies in these areas across all grant rounds. (See [Appendix Exhibit A-2](#).)

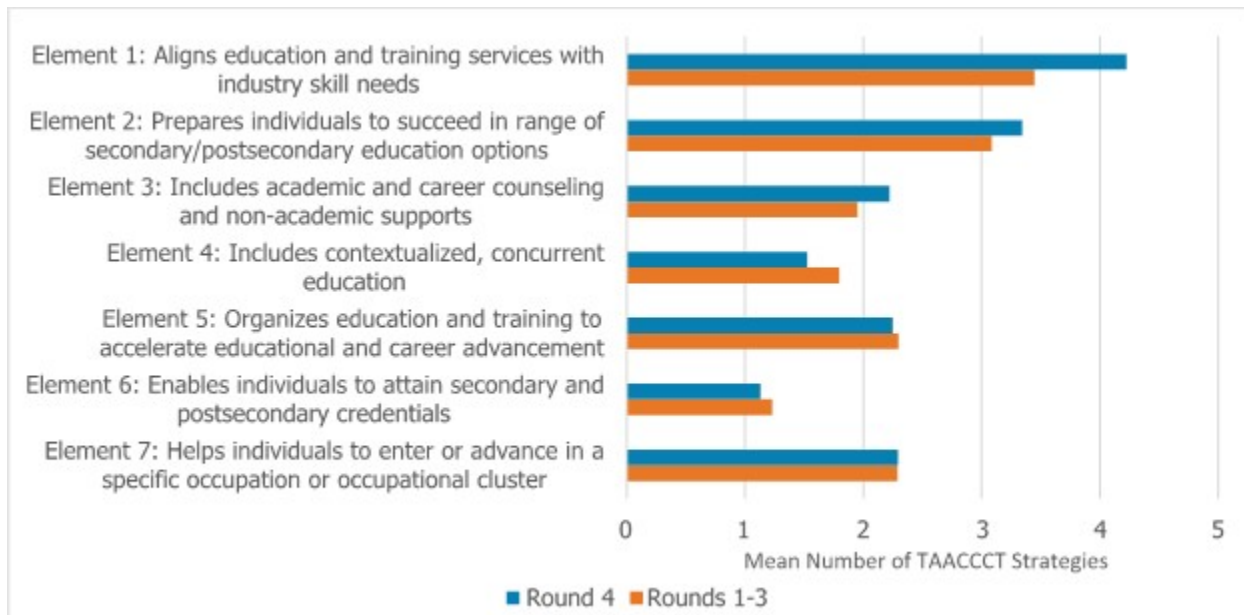
The college surveys were administered in each round to all colleges and asked them about service delivery and systems-change innovations they implemented to support improved outcomes for participants. The survey of Round 4 colleges, which had a 100 percent response rate, also included questions about specific employer partnerships. In Rounds 2-4, DOL also required all grantees to obtain independent third-party evaluations; those evaluations, focused on grantees rather than colleges in the case of consortia, provide the examples highlighted in boxes throughout this brief. (See [Appendix Data Sources, Methodology, and Exhibit A-1](#)).

Extent to which Colleges Implemented WIOA Career Pathways Elements Individually

Given that DOL emphasized career pathways more strongly in Round 4 than in earlier rounds, how did colleges' implementation of TAACCT career pathways strategies corresponding to *individual* WIOA elements in Round 4 compare to earlier rounds?

- [Across all grant rounds colleges implemented career pathways broadly, pursuing at least one grant-funded strategy or partnership for each WIOA career pathways element.](#) This ranged from the 75 percent of colleges that implemented at least one strategy for WIOA Element 4 (includes contextualized, concurrent education) to the 93 percent of colleges implementing at least one strategy for WIOA Element 2 (prepares individuals to succeed in a range of secondary and postsecondary education options).
- [Round 4 colleges implemented WIOA Element 1 \(aligns services with industry skill needs\) more deeply than did colleges in earlier rounds.](#) [Exhibit 2](#) shows that Round 4 colleges implemented a higher number of TAACCT strategies for WIOA Element 1, four strategies on average as compared to an average of three for colleges in the earlier rounds. For example, more than a third (34 percent) of Round 4 colleges implemented six or more TAACCT strategies related to Element 1, whereas less than a fourth (22 percent) of Rounds 1-3 colleges did (not shown). [Box 4](#) highlights the experiences of two grantees that illustrate this focus on aligning services with industry needs.
- [Findings suggest that colleges may have been responding to the strong emphasis in DOL's grant announcement for Round 4 on fully engaging employers and industry organizations to build responsive and effective career pathways aligned with industry needs.](#) A number of Round 4 colleges likely also benefited from employer and industry relationships built in previous TAACCT rounds or through other federal, state or local initiatives. (Betesh, Smith, & Gardiner, 2020)
- [Round 4 colleges also implemented somewhat more TAACCT strategies for WIOA Element 2 \(prepares individuals to succeed in a range of secondary and postsecondary education options\) and Element 3 \(includes academic and career counseling and non-academic supports\).](#) [Box 5](#) highlights one example of this, New Mexico's use of career coaches to support student success. Round 4 colleges implemented fewer strategies, however, for Element 4 (includes contextualized, concurrent education), than did colleges in Rounds 1-3. For the remaining three WIOA elements, [Exhibit 2](#) shows no appreciable difference in the average number of strategies colleges implemented across rounds.

Exhibit 2. Average Number of TAACCCT Strategies Colleges Implemented for Each Individual WIOA Career Pathways Element, Round 4 vs. Rounds 1-3



Source: Urban Institute Survey of TAACCCT Colleges, Rounds 1-4. Surveys of TAACCCT colleges were administered at the start of the fourth grant year for Rounds 3 and 4, in the middle of that grant year for Round 2, and after the end of the grants for Round 1. N=263 for Round 4 survey and N=777 for Rounds 1-3 surveys.

Note: See Appendix Exhibit A-1 for details.

Box 4. How Round 4 Grantees Used Career Pathways to Align Services with Industry Skill Needs

Similar to the college survey findings presented here, DOL’s synthesis of Round 4 third-party evaluations found that most grantees (56 of 71 or 79 percent) used the career pathways model or a core element of it to align programs with industry needs (Scott et al., 2020). For example:

- Colleges in **Connecticut’s** Manchester Community College consortium enhanced the ability of workers already in manufacturing to advance by adding *stackable third-semester credentials* to their existing advanced manufacturing programs. Third-semester certificates were *tailored to local industry needs* and designed to build on the first two semesters by adding instruction of more advanced skills. Eleven third-semester certificates were approved, including ones for Additive Manufacturing, Advanced Machining Technology, and Quality Inspection. Consortium colleges also *built new or updated existing labs to expand program offerings* and serve more students with state-of-the-art equipment. (Hayman, 2018; Judkins et al., 2020)
- With considerable local employer input, Richland College in **Texas** substantially *upgraded labs and equipment* and created certificates embedded in *associate degree pathways* in Advanced Manufacturing and Electronics. These certificates included Advanced Design, Advanced Manufacturing (CNC/CAD/CAM), Electromechanical Maintenance, Electronics Technology, and Supervisory Control of Data Acquisition (SCADA). *Career navigators supported pathway participants*; the college sustained those navigator positions from its own budget after the TAACCCT grant ended. (Haviland et al., 2018)

Extent to which Colleges Implemented WIOA Career Pathways Elements Comprehensively and as Part of Building Systems

Only assessing how much colleges implemented *individual* WIOA career pathways elements may miss the bigger picture, however. A central assumption that underlies the career pathways approach is that the whole is larger than its parts, that is, it is the *combined* effect of different career pathways elements working in concert that makes career pathways a promising approach rather than any single career pathways element. In its Round 4 grant announcement, DOL did not intend colleges to pursue individual career pathways strategies just as ends in themselves but rather as a way to transform education and training content and delivery to improve services to unemployed and under-employed adults.

Understanding the effects of the grants on state and local capacity to implement career pathways programs and systems therefore requires looking at the extent to which colleges implemented career pathways comprehensively, by developing various WIOA career pathways elements in combination with one another and by adopting multiple TAACCCT strategies for each element. In addition, for scale and sustainability purposes, it matters whether colleges implemented career pathways elements as part of larger efforts to build career pathways systems. This section also examines whether colleges across rounds focused on three aspects of building career pathways systems—developing or expanding partnerships, gaining support from partners for specific career pathways strategies, and adopting non-TAACCCT funding strategies.⁸

Comprehensiveness of College Career Pathway Implementation

The previous section examined the extent to which colleges implemented WIOA career pathways elements *individually*. **Exhibit 3** analyzes college survey data, using the same indices as before, to look at two aspects of how colleges implemented elements comprehensively: 1) *breadth* of implementation, measured by the share of colleges adopting at least one TAACCCT strategy for each of multiple WIOA elements, and 2) *depth* of implementation, measured by the share of colleges implementing at least half of possible TAACCCT strategies per multiple WIOA elements.

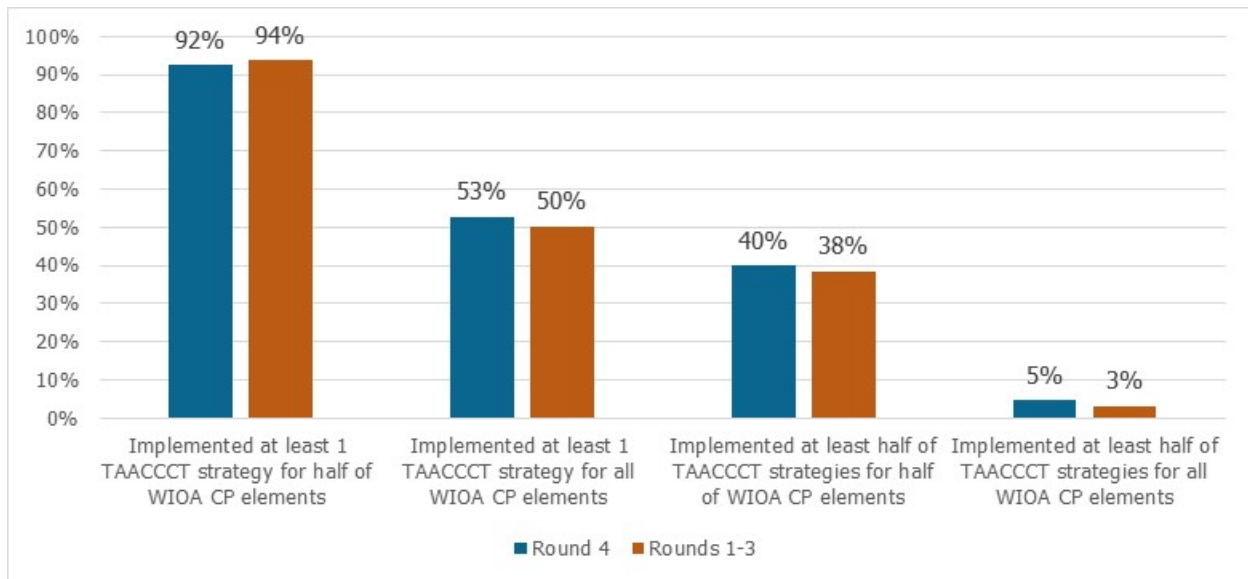
Box 5. Supporting Pathways Success with Career Coaches

In **New Mexico**, a statewide consortium of the Higher Education Department, Department of Workforce Solutions, and 11 community colleges formed Skill-UP Network Pathways Acceleration in Technology and Healthcare (SUN PATH) to create or expand *statewide career pathways* in Allied Health, Health Information Technology, and Emergency Medical Services. The workforce agency *co-located full-time Job Development Career Coaches* on each college campus to support SUN PATH participants' success.

Career coaches hosted program orientations, assessed course offerings for alignment with local demand, and integrated workforce readiness into courses, including by bringing in employers to share their expectations for workers and to conduct mock interviews. Coaches also connected students with other resources to support participation in training, such as WIOA and Temporary Assistance for Needy Families. Colleges and the workforce agency have *continued these co-located Career Coaches after the end of the grant*. (Davis et al., 2018)

⁸ This brief focuses only on career pathways systems; a separate brief (Betesh, Smith, & Gardiner, 2020) assesses systems-change and capacity-building efforts in Round 4 more broadly.

Exhibit 3. Extent to Which Colleges Implemented Career Pathways Elements Comprehensively, by Breadth/Depth of Implementation, Round 4 vs. Rounds 1-3



Source: Urban Institute Survey of TAACCCT Colleges, Rounds 1-4. Surveys of TAACCCT colleges were administered at the start of the fourth grant year for Rounds 3 and 4, in the middle of that grant year for Round 2, and after the end of the grants for Round 1. N=263 for Round 4 survey and N=777 for Rounds 1-3 surveys.

Note: Percentages shown are share of colleges in grant rounds.

Given DOL’s greater emphasis on career pathways in Round 4, did Round 4 colleges appear to implement career pathways more comprehensively than colleges did in Rounds 1-3?

- **Almost all colleges across grant rounds implemented WIOA career pathways elements broadly,** adopting at least one TAACCCT strategy for at least half of WIOA elements. In addition, the majority of colleges across rounds implemented all seven career pathways elements, with at least one TAACCCT strategy adopted for each. **Box 6** highlights two states’ efforts to build comprehensive manufacturing pathways.
- **Fewer colleges implemented WIOA career pathways elements both broadly and deeply.** About four in 10 colleges across rounds developed at least half of TAACCCT strategies for half or more of the WIOA elements. Very few colleges did so for all of the elements. Round 4 colleges were slightly more likely to have implemented career pathways more deeply (at least half of strategies for some or all WIOA elements) than colleges in earlier rounds. The career pathways approach as defined in WIOA entails a quite ambitious array of activities and services, so colleges may have had to choose which elements to devote the most attention and resources to given grant timelines and available funding.

Box 6. Creating Comprehensive Manufacturing Pathways across TAACCCT Rounds

Under TAACCCT Round 2, the **Illinois** Network for Advanced Manufacturing (INAM) consortium of 21 community colleges built on three years of partnership planning prior to the grant to address industry and worker needs (Lake, MacGregor, & Kirby, 2015). Led by William Rainey Harper College, INAM created a career pathway with *individualized educational plans*; *common learning objectives* for entry-level certificates in manufacturing; new, updated advanced manufacturing equipment; *employer partnerships*; job placement services; and *articulation agreements* between community colleges and four year institutions to facilitate earning of advanced degrees. Pathway certificates included Certified Production Technology, Metalworking/Welding, Mechatronics/Robotics, Precision Machining, and Industrial Maintenance. (Bucci & Westat, 2016)

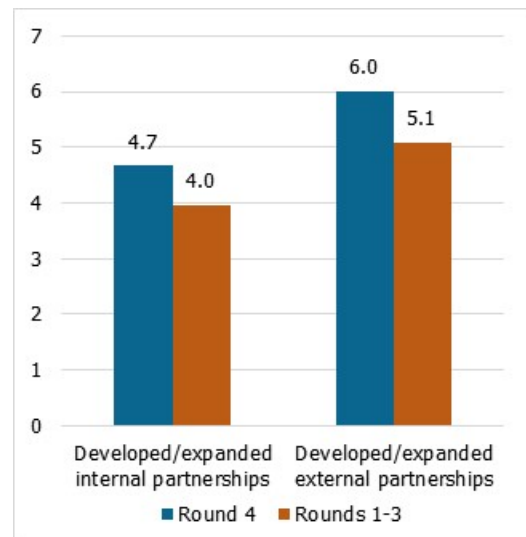
A statewide consortium in Round 4 built on previous adult career pathways work, such as FastTRAC and Pathways 2 Prosperity, to create the **Minnesota** Advanced Manufacturing Project (MnAMP), a partnership of employers and industry, the public workforce system, and Minnesota State educational institutions. Led by South Central College, MnAMP developed a *core curriculum* for its restructured pathways in machining, mechatronics and welding, incorporated *industry-recognized stackable credentials*, and created 22 new articulation agreements with four-year institutions. MnAMP also developed a Credit for Prior Learning Guide and a self-serve portal for applications (MinnesotaCPL.com) to ease awarding of *competency-based credit* for prior learning and assessment. The consortium worked with employers to expand *work-based learning* opportunities, such as apprenticeships and an online learning platform (+Connect) to offer incumbent workers courses aligned with apprenticeships or other industry-recognized credentials. (Bucci et al., 2018)

Building Career Pathways Systems in Round 4

In the Round 4 grant announcement DOL also emphasized sustaining and scaling career pathways, especially by building career pathways systems across institutions and statewide. This section takes a closer look at the extent to which colleges across rounds focused on three aspects of building career pathways systems that were asked about in the college surveys— 1) developing or expanding partnerships, 2) gaining support from partners for specific career pathways strategies, and 3) adopting non-TAACCCT funding strategies. The analysis addresses these questions:

- To what extent did colleges create internal and external partnerships for their career pathways work? (**Exhibit 4**)
- To what extent did colleges secure support from partners for specific TAACCCT career pathways strategies? (**Exhibit 5**)
- To what extent did colleges adopt non-TAACCCT funding strategies for career pathways? (**Exhibit 6**)

Exhibit 4. Average Number of Internal and External Partnerships, Round 4 Colleges vs. Rounds 1-3



Source: Urban Institute Survey of TAACCCT Colleges, Rounds 1-4. N=263 for Round 4 survey and N=777 for Rounds 1-3 surveys.

Note: Numbers shown are mean number of partnerships of each type. See Appendix Exhibit A-2 for details.

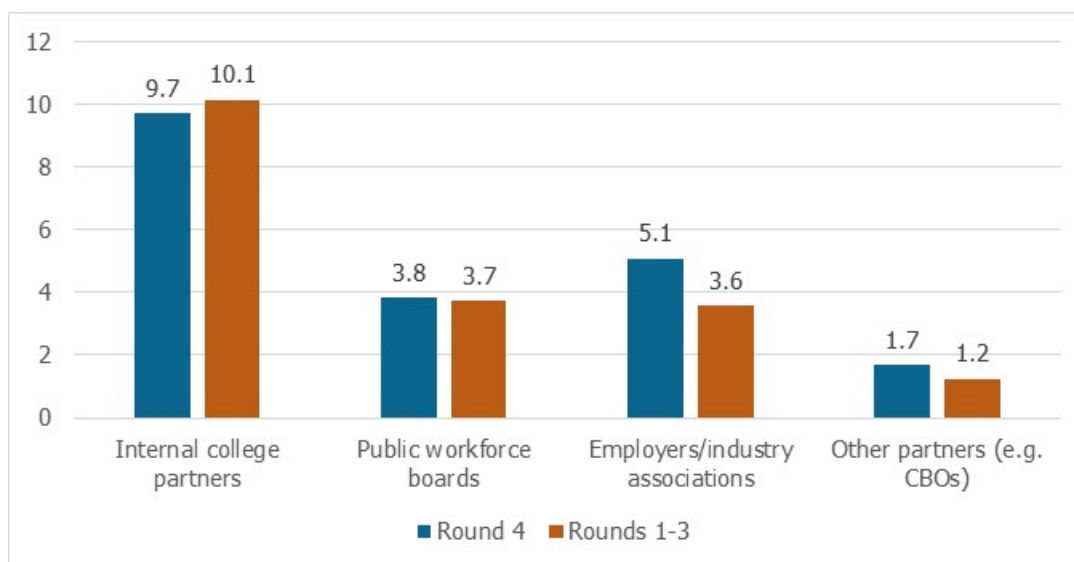
- To what extent did Round 4 colleges act comprehensively across these three areas to build career pathways systems as compared to colleges in earlier rounds? (**Exhibit 7**)

Partnerships and Extent of Partner Support for Colleges' Career Pathways Work

How did Round 4 colleges internal and external partnerships for their career pathways work compare to colleges in earlier rounds?

- Exhibit 4** shows Round 4 colleges secured both more internal college partnerships and more external partnerships for their grant-funded efforts, though the differences are not large. Interestingly, as Exhibit 4 shows, colleges across all rounds developed or expanded more external partnerships, of the possible types listed in the survey, than internal ones.
- Round 4 colleges were especially likely to obtain employer or industry support for career pathways strategies as compared to colleges in earlier rounds; Missouri's experience is one example (**Box 7**). **Exhibit 5** illustrates this by showing the depth of support from each type of partner for colleges' specific career pathways strategies.
- Round 4 colleges obtained support from other kinds of external partners, such as community organizations, at higher rates than colleges in earlier rounds. However, Round 4 colleges had slightly less support for specific career pathways strategies from internal college partners. Colleges across all rounds received a similar amount of support for career pathways strategies from public workforce boards.

Exhibit 5. Average Number of Career Pathways Strategies for which Different College Partners Provided Support, Round 4 Colleges vs. Rounds 1-3



Source: Urban Institute Survey of TAACCCT Colleges, Rounds 1-4. N=263 for Round 4 survey and N=777 for Rounds 1-3 surveys.

Note: Numbers shown are the mean number of TAACCCT career pathways strategies that partners of each type supported colleges with. See Appendix Exhibit A-2 for details.

Box 7. Partnering Statewide with Industry and the Community on Comprehensive Career Pathways

In Round 4 the **Missouri** Community College Association built on previous TAACCCT efforts to create a *statewide college strategic planning process and Workforce Development Network* to align program content and delivery with workforce development needs. An independent evaluation concluded that colleges individually and statewide progressed on “college-employer engagement and partnerships; career pathway development using industry-recognized stackable credentials; increased intentional student support; redesign of developmental education; and credit for prior learning.”

Colleges partnered with more than 60 employers and/or community-based organizations to achieve these results; employers told evaluators their relationship with the college was more extensive than it had been in existing employer program advisory councils. In particular colleges used these *employer and community partnerships to support students all along a pathway*, from initial recruitment through program completion and employment. One lesson from Missouri’s experiences in TAACCCT is that colleges must continuously cultivate partnerships to maintain their effectiveness. (Cosgrove & Cosgrove, 2018).

One factor that may have facilitated Round 4 colleges’ ability to deepen industry partnerships is that they often were building on previous relationships with employers formed under earlier rounds of grants and other efforts (Betesh, Smith, & Gardiner, 2020). Interviews with employers involved with TAACCCT-supported colleges suggested that employers that had collaborated with colleges for six to 10 years had more staff involved in the partnership, assisted colleges in obtaining grants, more frequently partnered on more than one program, and took on important leadership roles in the partnership. These employers were also more likely to have “exceptional buy-in” to the partnerships (Scott et al., 2018). Given that Round 4 colleges reported that establishing and maintaining partnerships was their biggest implementation challenge (Trutko et al., 2020), having existing employer partnerships may have been a distinct advantage in career pathways system development.

Extent to which Colleges Adopted Non-TAACCCT Funding Strategies

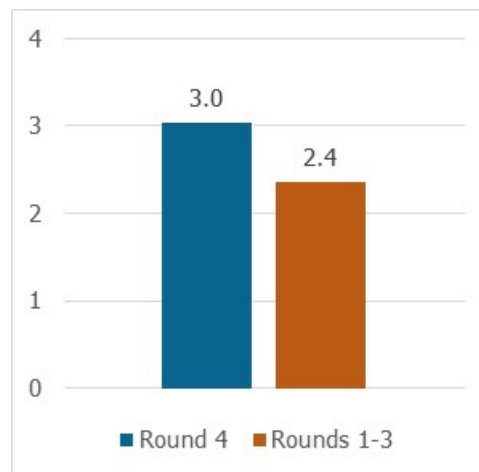
One important indicator of whether colleges can scale and sustain career pathways is the extent to which colleges adopted other, non-TAACCCT funding strategies for career pathways. For example, these funding strategies sometimes included direct financial support from the workforce system, employers, or community partners to help participants pay for training or to provide support services. They also included strategies for maximizing financial aid for students in training, such as creating for-credit, aid-eligible training or improving financial aid processes. Colleges also occasionally developed new or expanded partnerships with philanthropy.

Exhibit 6 shows that Round 4 colleges obtained more non-TAACCCT funding strategies on average for career pathways than did colleges in earlier rounds. More than a third (36 percent) of Round 4 colleges adopted four or more non-TAACCCT funding strategies, whereas only 22 percent of colleges in Rounds 1-3 did (not shown).

Comprehensiveness of College Efforts to Secure Partner Support and Funding for Career Pathways

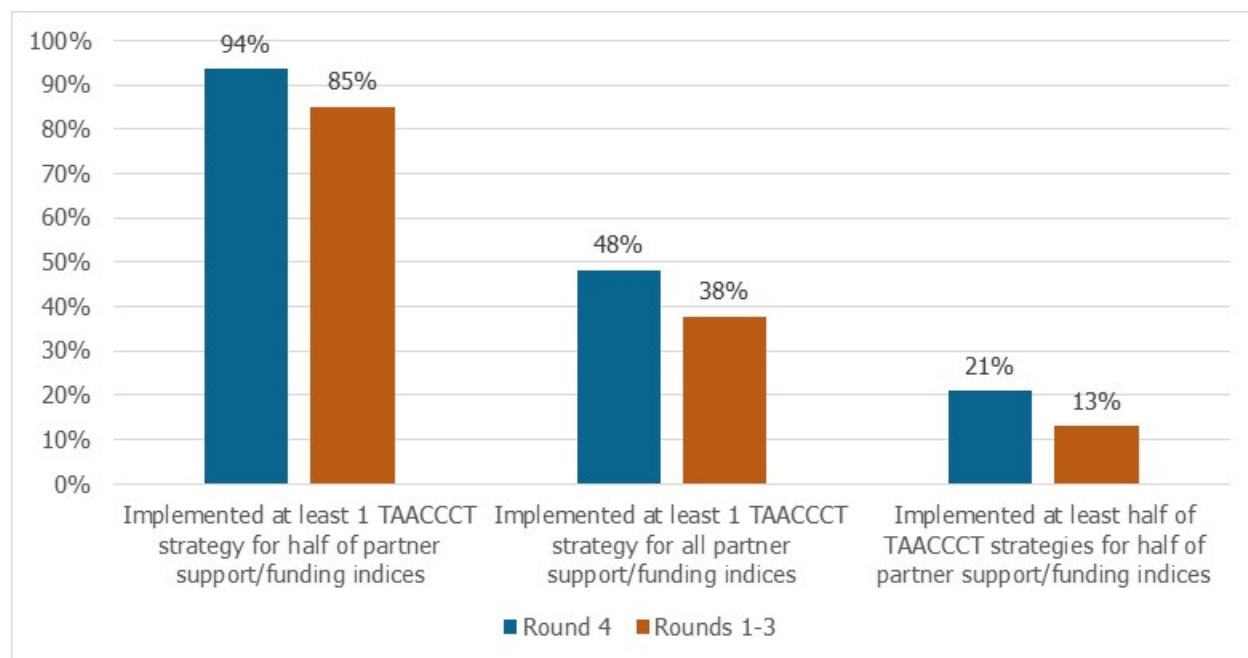
This section analyzes the extent to which colleges acted comprehensively across all three of these system-building areas: 1) developing or expanding partnerships, 2) gaining support from partners for specific career pathways strategies, and 3) adopting non-TAACCT funding strategies. **Exhibit 7** shows that most colleges across rounds obtained support in all three areas to some extent. Compared to Rounds 1-3, Round 4 colleges appeared to have broader support (at least one TAACCT strategy for all partner support/funding indices) and deeper support (at least half of possible strategies for half or more of indices), though a relatively small share of colleges achieved the latter. As noted earlier this inability to implement career pathways strategies both broadly and deeply at the same time may simply reflect the scope of what is feasible given limited grant time periods and resources. Statewide consortia in Montana and Wisconsin illustrate comprehensive efforts to build career pathways systems (**Boxes 8 and 9**).

Exhibit 6. Average Number of Non-TAACCT Funding Strategies Colleges Adopted, Round 4 vs. Rounds 1-3



Source: Urban Institute Survey of TAACCT Colleges, Rounds 1-4. N=263 for Round 4 survey and N=777 for Rounds 1-3 surveys. Note: Numbers shown are mean number of strategies. See Appendix Exhibit A-2 for details.

Exhibit 7. Extent to which Colleges Obtained Comprehensive Partner Support and Adopted Non-TAACCT Funding Strategies, Round 4 vs. Rounds 1-3



Source: Urban Institute Survey of TAACCT Colleges, Rounds 1-4. N=263 for Round 4 survey and N=777 for Rounds 1-3 surveys.

Note: Percentages shown are share of colleges in round. See Appendix Exhibit A-2 for details.

Box 8. Building a Rural Healthcare Pathways System in Round 4

To address nursing and other healthcare shortages, the HealthCARE **Montana** (HCMT) consortium of colleges, healthcare employers, and institutional partners tackled the challenge of building a *statewide healthcare pathways system* in a large, rural state. The consortium developed three shortened nursing pathways that *reduced prerequisites, incorporated distance learning options, and adopted new curriculum*: Practical Nursing, Associate of Science in Nursing, and Bachelor of Science in Nursing. HCMT also created *21 new apprenticeship programs*; a new allied health core curriculum with *contextualized math*; new certificate programs (Pharmacy Technology, Phlebotomy, Health Promotion, Surgical Technology, Sonography, and Behavioral Health); and two specialty courses (Restorative Care and Dementia Care) in response to employer demand for more support for nursing assistants. Employer input also led HCMT to create a series of online modules called LEAD (Learn, Engage, Adapt, Do) to meet the need for healthcare employees to receive *targeted soft skills training*; these free modules are *delivered at the worksite* in conjunction with *structured, employee-led discussions*.

HCMT deployed multiple, specialized staff roles to support college and statewide systems change, including *healthcare transformation specialists* based at each college; five *regional workforce coordinators* who built employer relationships, identified employer needs, and supported job placement; and four career coaches who recruited and placed students into programs and connected them with needed supports and resources. Four *apprenticeship specialists* worked with employers and colleges to develop programs. At the start of the grant, Montana had no healthcare apprenticeships; by 2018 at the end of the grant, the state had 56 healthcare employer sponsors that had trained nearly 300 apprentices. Finally, all of these project staff worked together in regional teams to ensure they could *respond to region-specific needs*.

To sustain progress on healthcare pathways, the HCMT workforce advisory committee led development of the Montana *Healthcare Workforce Statewide Strategic Plan*, which includes a number of HCMT strategies, and worked with key state agencies and stakeholders on implementation. (Venkateswaran et al., 2018)

Box 9. Scaling and Strengthening Wisconsin's Career Pathways System

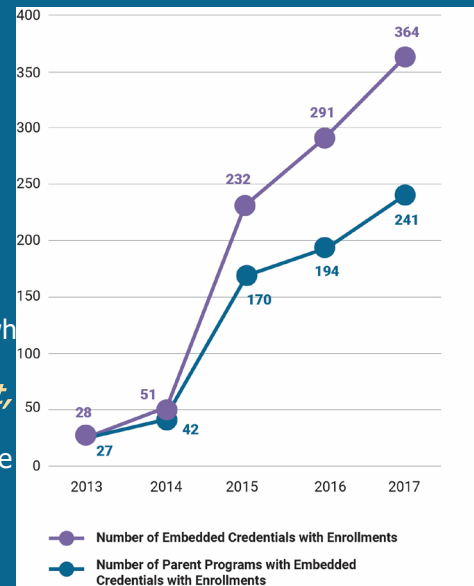
Wisconsin, with its two Round 4 grants (ACT for Healthcare and Advancing Careers for TAA and Transitioners, or ACT²), sought to expand *healthcare pathways* within its technical colleges, to scale up the state's career pathways system, and to better align career pathways policies at the state and local levels (Price et al., 2018). These efforts built on a decade of philanthropic, state, and previous TAACCCT investments in industry partnerships and career pathways. This previous experience likely contributed to the state's substantial expansion of career pathways in Round 4, especially by establishing *career pathways as a central student success and employer engagement strategy* (Roberts et al., 2018; Price et al., 2018). Wisconsin also leveraged the knowledge and momentum built through an existing interagency state planning group on WIOA implementation to integrate its TAACCCT pathways work with career pathways *system development* under WIOA (DuBenske, 2018).

Colleges in the statewide ACT for Healthcare consortium developed 14 new *stackable certificates, diplomas, and degrees* to respond to employer needs. In addition the consortium developed *statewide resources*, including 151 simulations; two new courses in Digital Literacy and Culture of Healthcare; and a VA Medic to Nursing pathway that awards credit for prior learning. Consortium colleges also adopted more *flexible delivery*, such as block scheduling; online/hybrid courses; remote locations; and evening, weekend, and summer courses.

An independent evaluation found that students and faculty especially valued ACT's academic support, which included embedding academic support staff in courses or labs; providing targeted tutoring and group review sessions; and offering *concurrent, contextualized basic skills* courses. Students who received academic and non-academic supports had significantly *higher rates of program retention, credential attainment, employment, and earnings gains* than a comparison group. Despite these results, the evaluation observed that colleges were unlikely to sustain ACT-funded support services after the grant ended, except in cases where supports were integrated into the curricula. Instead, ACT's curricular and instructional innovations likely made the most lasting contribution to building career pathways systems statewide because college leaders predicted those would be sustained, absent shifts in employer demand. (Price et al., 2018).

ACT² had a broader focus than Act for Healthcare. The grantee devoted the bulk of the grant to placing a *Career Pathway Coordinator* (CPC) at each technical college to engage faculty, employers, and staff to build or expand career pathways, including through a self-assessment tool. According to an independent evaluation, CPCs were viewed by colleges as very valuable resources. College senior *leadership commitment to career pathways* strategies was also key to expanding the career pathways system as it lent credibility to the CPCs and made clear college-wide that career pathways were an institutional priority. Over the grant period colleges expanded career pathways by greatly increasing the number of stackable credentials embedded in career pathway "parent" programs (top line, **Exhibit 8**); the number of parent programs containing those embedded credentials grew sharply as well (bottom line, **Exhibit 8**). Colleges also improved a range of their policies and practices integral to career pathways implementation (Roberts et al., 2018).

Exhibit 8. Growth in Stackable Credentials and Parent Programs, Wisconsin Technical Colleges, 2013-2017



Source: Reproduced from Roberts et al., 2018; data from Wisconsin Technical College System Career Pathway Scorecard, January 2018

CONCLUSION

This brief's analysis of college survey responses across the four grant rounds shows that grant-funded colleges implemented many individual career pathways strategies that broadly addressed the elements of the WIOA career pathways definition. Round 4 colleges stand out for their greater development of strategies to align services with industry needs, their stronger collaboration with employers and industry, and for the ways in which they sought to expand partnerships and non-TAACCT funding strategies to build career pathways systems.

Together the college survey data and examples from third-party evaluations presented here suggest that industry partnerships and expanded, more institutionalized, career pathways offerings and credentials may be the most lasting contributions made by Round 4 grantees toward building career pathways systems. A synthesis of Round 4 third-party evaluations found that "partnerships were expected to be one of the most enduring legacies of TAACCT" (Scott et al., 2020). In addition, Round 4 colleges themselves were most likely to report that enhancing and expanding programs or curricula and upgrading equipment and machinery were their greatest accomplishments (Trutko et al., 2020). Other WIOA career pathways elements, such as student supports, that are not embedded in curriculum and require a separate ongoing funding commitment, appear more challenging to sustain. In addition states with past career pathways or sector partnership experience may have found it easier to build or expand career pathways systems, as illustrated by the experiences of Minnesota (**Box 6**), Missouri (**Box 7**), and Wisconsin (**Box 9**).

These findings have several implications for the field. First, the fact that colleges across TAACCT rounds implemented multiple career pathways strategies suggests that grant-funded colleges are well-positioned to continue these efforts, especially given the embedding of these strategies within approved college programs and credentials and the close alignment between TAACCT strategies and key elements of the WIOA career pathways definition. Second, the greater success of Round 4 colleges in partnering with employers and industry suggests that sustained investment, as well as ongoing college and industry leadership, appear to be critical for institutionalizing state career pathways systems over time. Third, this descriptive research adds to the existing literature on career pathways summarized here as well as other descriptive and impact research underway, much of which studied early career pathways efforts. This body of research can inform decision-making by policymakers and program administrators to help them improve the design and implementation of the next generation of career pathways programs and systems.

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APPENDIX

The TAACCCT Round 4 National Evaluation is comprised of four components, including analyses of both of these two data sources (below). Though part of the Round 4 evaluation, this brief analyzes career pathways implementation across all four grant rounds.

Data Sources

Online surveys of grant-funded colleges conducted across all four rounds of TAACCCT grants served as the primary data source for this brief. The focus of these surveys was: *What service delivery and systems-change innovations were implemented to support improved outcomes for participants?* The survey of Round 4 colleges also included questions about specific employer partnerships. Altogether, 1,040 colleges responded to these surveys, including 263 Round 4 colleges and 777 colleges in Rounds 1-3. To the extent that some colleges were involved in more than one grant round, they may have responded to more than one survey. The main unit of analysis for the brief, therefore, is colleges rather than grantees, although for single institution grants they are one and the same.

By contrast, third-party evaluations of TAACCCT grantees provided information on the state and local examples highlighted throughout the brief in textboxes. In these evaluations the grantee is the unit of analysis. Beginning in Round 2, DOL required grantees to engage an independent third-party evaluator to design and conduct an evaluation of their grant projects. The third-party evaluations documented and assessed the implementation of capacity-building and career pathways funded by the grant and examined participants' educational and employment outcomes and impacts.

Methodology

This brief analyzes colleges' survey responses to assess the extent to which colleges in all rounds implemented WIOA career pathways elements individually and comprehensively, using indices that map TAACCCT grant strategies against the seven elements of the WIOA career pathways definition.

Exhibit A-1 below shows the crosswalk between WIOA elements and TAACCCT strategies for those indices.

In addition, to address the question of whether Round 4 increased college efforts to build career pathways systems, the brief creates additional indices of college survey responses pertaining to three examples of these efforts: developing partnerships, gaining support from different partners for specific grant strategies, and adopting non-TAACCCT funding strategies for career pathways programs and systems. **Exhibit A-2** below shows the crosswalk between those three areas of activity and TAACCCT strategies for these additional indices.

Note that the content of these indices and the crosswalks underlying them were constrained by the extent to which the four rounds of surveys of grant-funded colleges included questions and responses for relevant TAACCCT strategies.

Exhibit A-1. Indices for WIOA Elements and TAACCCT Strategies

WIOA Definition: Career Pathways Are a Combination of Rigorous and High-Quality Education, Training, and Other Services That include These Elements—	TAACCCT Strategies Relevant to Each WIOA Element that Were Included in the Surveys of Grant-Funded Colleges
Element 1: Aligns with skill needs of industries in state and regional economies	<ul style="list-style-type: none"> • expanded current/developed new partnerships with industry associations, employers or Chambers of Commerce • developed industry recognized credentials • developed “KSAO”⁹ • purchased/upgraded equipment • employers sat on advisory/steering committees • employers helped with curriculum development • employers donated equipment/space • employers provided instructors or allowed use of employer staff as instructors • use of employer facilities • employers operated training programs
Element 2: Prepares individuals to be successful in a full range of secondary and postsecondary education options	<ul style="list-style-type: none"> • developed stackable/latticed credentials • created/enhanced <i>for-credit</i> programs of study • designed new career pathways programs • established articulation and transfer agreements or included articulation from programs to more advanced programs • expanded current/developed new external partnerships with universities • expanded current/developed new external partnerships with K-12
Element 3: Includes academic and career counseling, as well as non-academic supports	<ul style="list-style-type: none"> • career coaching/counseling • job shadowing • student remediation/enhanced academic supports • peer support groups/mentors • improved financial aid processes • expanded current/developed new external partnerships with CBOs/other social service agencies
Element 4: Includes, as appropriate, education offered concurrently with and in the same context as occupational training	<ul style="list-style-type: none"> • contextualized learning • improvements to basic skills/Adult Basic Education • improvements to English as a Second Language • team teaching • restructuring of developmental education • expanded current/developed new partnerships with adult education/remedial education services
Element 5: Organizes education, training, and other services to meet individual needs in a way that accelerates educational and career advancement;	<ul style="list-style-type: none"> • hybrid/online learning, online teaching/learning, asynchronous learning, or real-time online instruction • assessment technology • credits for prior learning/work experience or prior learning assessments • competency-based learning • modular or chunked courses

⁹ KSAO is an acronym for “Knowledge, skills, abilities and other characteristics”; lists of KSAO are commonly used by employers to recruit for jobs.

WIOA Definition: Career Pathways Are a Combination of Rigorous and High-Quality Education, Training, and Other Services That include These Elements—	TAACCCT Strategies Relevant to Each WIOA Element that Were Included in the Surveys of Grant-Funded Colleges
Element 6: Enables individuals to attain a secondary school diploma or its recognized equivalent, and at least 1 recognized postsecondary credential;	<ul style="list-style-type: none"> • created new certificates of completion for programs (less than one year, one to two years in length) • developed new professional and industry certifications, and academic degrees, or developed industry-recognized credentials
Element 7: Helps individuals to enter or advance within a specific occupation or occupational cluster	<ul style="list-style-type: none"> • internships or clinical placements • industry mentors or employer mentors • On-the-Job Training (OJT) • Registered Apprenticeship • cooperative education or work-study • simulations • occupational preparatory classes (pre-apprenticeship, boot camps) • workforce system provided job placement services

Exhibit A-2. Three Indices of Support for Building Career Pathways Systems

Indices of Survey Responses on TAACCCT Partnerships, Partner Support for Career Pathways Strategies, and Non-TAACCCT Funding Strategies
1) Developed/expanded partnerships
<p>Internal partners:</p> <ul style="list-style-type: none"> • Adult education/remedial education services • Career services • College administration • Financial aid • Information technology/computer services • Student support services • Tutoring/academic support centers • Other academic departments • Other workforce/career and technical education departments
<p>External partners:</p> <ul style="list-style-type: none"> • Career or job centers (other than American Job Centers; One-Stops) • Community or technical colleges other than those in your consortium (if applicable) • Community-based organizations or other social services agencies • Economic development organizations • Faith-based organizations • Industry associations, employers, or Chambers of Commerce • Local government • Local workforce development boards (LWDB)/ American Job Centers • Philanthropic community (e.g., foundations) • School districts (K-12) • Seed and venture capital organizations or individuals, investor networks, or entrepreneurs • State government agencies • Unions • Universities or other four- year institutions • Vocational or trade schools • State workforce development boards
2) Gained support from different partners for specific career pathways strategies
<p>Internal college departments/offices:</p> <ul style="list-style-type: none"> • Academic support and tutoring • Assistance with tuition waivers • Career navigation and information • Counseling on program selection/enrollment • Curriculum development (course specify instructional design and content) • Development of articulation agreements • Development of prior learning assessments • Enrollment processes • Financial counseling and aid • Leadership/oversight • Job search assistance • Program development (e.g., career pathways, course sequencing, modularization of courses, incorporation of technology-enabled tools, internships) • Purchase and operation of technology, equipment, or other learning tools • Remediation • Testing for college readiness • Student recruitment/outreach

Indices of Survey Responses on TAACCCT Partnerships, Partner Support for Career Pathways Strategies, and Non-TAACCCT Funding Strategies

Public workforce boards:

- Access to financial support for participants (e.g., Individual Training Accounts)
- Career or skill assessments
- Connections to employers or industry associations
- Curriculum development
- Direct funding/training contracts
- Internships or other work experience activities
- Job placement services
- Job readiness/soft skills training
- Mentoring
- Operation of training activities
- TAA program services (e.g. case management)
- Use of facilities (e.g., space for training activities, meetings with employers, job fairs)
- Use of staff as counselors/navigators

Employers/industry associations:

- Apprenticeships
- Curriculum development
- Financial resources for students
- Equipment or space donated
- Instructors
- Internships/clinical placements
- Interviews of program graduates
- Job shadowing opportunities
- Mentoring
- Operation of training programs
- Paid time for incumbent workers in training
- Support services
- Use of facilities
- Use of staff/employees as instructors

Other partners (e.g. community organizations, social service agencies):

- Curriculum development
- Financial resources for students
- Internships/clinical placements
- Mentoring
- Operation of training programs
- Support services
- Use of facilities
- Use of staff/employees as instructors

3) Adopted non-TAACCCT funding strategies

- Created/enhanced for-credit programs (i.e. financial aid-eligible)
- Improvement of financial aid processes
- Workforce system provided access to financial support for participants (e.g., Individual Training Accounts)
- Workforce system provided direct funding/training contracts
- Expanded current/developed new partnership with seed/venture capital organizations or individuals, investor networks, or entrepreneurs
- Expanded current/developed new partnership with philanthropy
- Employers paid time for incumbent workers in training
- Employers provided financial resources for students
- Employers provided support services
- Other partners provided support services
- Other partners provided financial resources for students

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